

Logic, Soul, and World

ESSAYS IN ARABIC PHILOSOPHY

IN HONOR OF TONY STREET



EDITED BY

ASAD Q. AHMED,

MOHAMMAD SALEH ZAREPOUR

AND RICCARDO STROBINO

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Logic, Soul, and World

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Essays in Arabic Philosophy in Honor of Tony Street

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Madḥal of *Avicenna's Kitāb al-Šifā'* (De Gruyter 2021), received the 30th World Award of Book of the Year in Iran.

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Introduction

Asad Q. Ahmed, Mohammad Saleh Zarepour and Riccardo Strobino

The study of Arabic logic in western academia began in earnest in the 1960s with the remarkable contributions of Nicholas Rescher. Following his work on modal logic in the Arabic tradition and some spadework that offered a general idea of the development of the discipline, the field saw some early contributions in the 1970s by Nabil Shehaby. Then following a few years' gap, the late 1970s and 1980s witnessed some important publications by Fritz Zimmermann, Abdelali Elamrani-Jamal, Ahmad Hasnawi, and others. Their work began to bring to light various other hidden facets of this neglected discipline, which despite its centrality for the development of Islamic civilization, had been all but neglected by modern western scholarship. Valuable work by Joep Lameer that appeared in the mid-1990s reconfirmed the need for greater scholarly investment. And it is from this point onward that the field began to grow by leaps and bounds.

Starting in the late 1990s, a major impetus behind the unprecedented transformation of the field has been Tony Street. For the past two and a half decades, his works have not only presented fine-grained analyses of some of the most exercising problems of Arabic logic, but have also laid out a map for the study of the field that practically every serious scholar uses as a point of reference. In many ways, he is responsible for shaping the field and for setting its standards. His work has become a model to emulate in its precision and clarity; and his command of his art—in its breadth and depth—is staggering.

In the spring of 2022, students and colleagues of Tony Street gathered at the University of California, Berkeley, to celebrate his groundbreaking contributions in the form of a conference. The highly original contributions engaged various figures, periods, geographical areas, and topics; and many transformed into the chapters that are collected in this volume. Most of the chapters in this collection are directly related to logic. Some of them are on issues related to the existence of the immaterial human soul, its acquisition of knowledge, and its interaction with the external world in general. A third group of articles deal with some metaphysical issues regarding the world, independently of how it is perceived by the human mind. Many of the articles included in this collection offer solutions to longstanding queries of the discipline or open up entirely new directions for future investigations. As such, this dynamic volume is a fitting tribute to a master scholar of Arabic intellectual history.

The first chapter, by Mohammad Saleh Zarepour, is entitled “Al-Fārābī on Future Contingency”. It examines a traditional interpretive problem for all iterations of the Aristotelian tradition engaging with Aristotle’s *De Interpretatione*, namely the problem of future contingents. The chapter examines in particular al-Fārābī’s position from an analytic perspective. Contemporary interpretation are discussed and evaluated. The chapter argues that al-Fārābī is in fact concerned with two related but distinct problems, the universal applicability of the principle of bivalence and the questions of God’s foreknowledge. Zarepour shows how the solution turns on al-Fārābī’s understanding of the distinction between definite and indefinite truth at a time and on a rejection of the claim that determinate truth entails determinism.

In the second chapter, “‘Subtraction’ (*rafʿ*) as Method for Finding First Principles of Demonstrations and for Establishing or Destroying: From Aristotle to al-Fārābī”, Cornelia Schoeck investigates Ibn Sīnā’s frequent reference to the method of “taking away” or “removing” (*rafʿ*) in his logical writings, in particular in the *Topics* (*K. al-Jadal*), the *Isagoge* (*K. al-Madkhal*) and the *Demonstration* (*K. al-Burhān*) of his *Shifāʾ*. In the *Metaphysics* (*al-Ilāhiyyāt*) of the *Shifāʾ* he explains the ontological aspect of the method of “removing.” And in the *Canon of Medicine* (*al-Qānūn fī ṭ-Ṭibb*) he applies this method. This article gives an overview of how this method works in al-Fārābī and Ibn Sīnā and explains its philosophical and logical background. It shows that this method has its origin [a] in Aristotle’s method of finding first principles by *aphaíresis* (ἀφαίρεσις, Arab. *rafʿ* or pass. *irtifāʿ*) in its original meaning of “taking away,” “subtraction,” or “removal” in conjunction with Aristotle’s theory of following and consequence (ἀκολουθία, Arab. *luzūm*) of cause and caused, and of prior and posterior, [b] in the conflation of the Peripatetic notion of following and consequence with the Stoic notion of consequence, and [c] that al-Fārābī’s *topos* of “existence and being removed” (*al-wujūd wa-l-irtifāʿ*) and Ibn Sīnā’s method of “removal” (*rafʿ*) and “being removed” (*irtifāʿ*) can be traced back to Galen’s notion of ‘endeixis’ or ‘indication’.

In Chapter Three, “On Avicenna’s Theory of Conception and Assertion: Towards a Systematic Ambiguity Reading”, Zhenhyu Cai addresses Avicenna’s account of the distinction between *taṣawwur* and *taṣdīq*, which he translates, respectively, into ‘conception’ and ‘assertion.’ Discussing the exact meaning of these notions in Avicenna’s philosophy and their differences with notions in their vicinities (e.g., the notion of *maʿnā*, *ḥaml*, and *ḥukm*), Cai rejects a prevalent reading of Avicenna according to which *taṣawwur* and *taṣdīq* are two types of mental acts. The alternative that Cai defends is that these notions are systematically ambiguous (*mushakkik*). They are used in different senses, and depending on the senses they are used in, they have different relationships with each

other and with other relevant notions. For example, analysing *taṣdīq* in terms of *a judgmental force*, Cai shows that there is a sense of *taṣdīq* that is included in *ḥaml* and another that is not.

Chapter Four is entitled, “Struggling with the Essentials: A Debate between Avicenna and His Contemporaries on Essentiality and Necessity in Demonstrations”. Here, Silvia Di Vincenzo offers a reconstruction of an important debate concerning one of the building blocks of Avicenna’s logic and metaphysics, drawing from primary sources such as Avicenna’s reworking of the *Posterior Analytics* (*Kitāb al-Burhān*) in the *Kitāb ash-Shifā’* (chapter 11.2) and his Letter addressed to Vizir Abū Sa’d. The problem concerns the distinction between essential and accidental attributes. Rooted in a late ancient debate that starts with Porphyry and involves prominent Alexandrian commentators, the distinction turns on whether or not an essential attribute of something is only what is constitutive of its essence and part of its definition. Based on a close analysis of chapter 1, 6 of Avicenna’s *Madkhal* and *Burhān* 11, 1, and a reading of 10th-century sources, Di Vincenzo advances a novel proposal involving the analysis of the views of two anonymous targets of Avicenna’s criticisms and their potential identification with philosophers associated with the Peripatetic school of Baghdad, including Abū l-Qāsim al-Kirmānī.

In Chapter Five, “Avicenna and Suhrawardī on the Flying Man: From the Flying Man to Existentialism” Tianyi Zhang explores the connection between Avicenna’s Flying Man—one of the most famous thought experiments in the Arabic philosophical tradition—and Shihāb ad-Dīn as-Suhrawardī’s existential metaphysics. In his novel interpretation, Zhang shows how as-Suhrawardī, based on an account of his Sufi experience of what he calls the Purified Self, turns Avicenna against himself by offering an ontological reading of the Flying Man and attendant theory of primitive self-awareness. The latter turns out to be instrumental for the rejection of Avicenna’s signature distinction between quiddity and existence, which lies at the core of as-Suhrawardī’s central notion of systematic ambiguity of existence, or gradation of existence in terms of perfection and deficiency.

Chapter Six, Paul Thom’s “Al-Kātibī’s Deduction of the Predicables” provides a detailed analysis of Najm ad-Dīn al-Kātibī’s argumentation for establishing a division of the predicables into genus, species, differentia, proprium and accident. Kātibī’s strategy involves three stages each of which exhibits an exclusive and intensionally exhaustive division of the output of the previous stage. In his chapter, Thom compares Kātibī’s argumentation with those of al-Fārābī and Avicenna and discusses the advantages and disadvantages of them with respect to each other.

In Chapter Seven, “Harmonizing the Sages: Abravanel Reading Maimonides through Avicenna and Averroes” Daniel Davies explains that prolific author

Isaac Abravanel wrote two major works dedicated to discussing the creation of the world. He operated at the turn of the sixteenth century and therefore looked back over a few hundred years of theological discussion. One of the two books, *New Heavens*, took the form of an extended commentary on a chapter of Maimonides' *Guide for the Perplexed*. Abravanel therefore also reflected on disagreements over how to understand the *Guide*. A number of such debates were inspired by apparently conflicting stances that Maimonides himself adopted. In *New Heavens*, Abravanel reports that three of them reflect disagreements between Avicenna and Averroes. This chapter presents Abravanel's attempts to settle these disputes. In two of the three cases, he endorses both opinions by distinguishing different ways in which they are true. In the third, he supports Averroes' position and comments on some statements in the *Guide* in order to argue that Maimonides understood the problems with Avicenna's position. As well as explaining Abravanel's novel attempts to reconcile Avicenna and Averroes, the chapter shows some of the influence of the two Arabic philosophers had on late medieval Hebrew philosophy. Furthermore, the issues that Abravanel considers continue to be contested in scholarly interpretations of Maimonides today. His solutions can contribute to the debate and, even if they are rejected, his approach represents a methodology that is worthy of greater consideration.

In Chapter Eight, "As-Suhrawardī's Stance on Modalities and the Logic of Presence" Shahid Rahman and Alioune Seck offer an analysis of Shihāb ad-Dīn as-Suhrawardī's modal logic as it is presented in *Ḥikmat al-Ishrāq*. They investigate as-Suhrawardī's account of modality and its connections to his theory of knowledge by presence. In particular, Rahman and Seck aim to show how as-Suhrawardī's criticism of Avicenna can be compatible with his accounts of temporal and modal syllogisms, which look very Avicennian at first glance. According to the interpretation offered by Rahman and Seck, as-Suhrawardī does not take modalities as propositional operators. Instead, they describe the modes of the relation between the subject and predicate. Rahman and Seck argue that the notion of *actual presence* plays a crucial role in as-Suhrawardī's modal logic, and it is through this notion that his account of contingency is linked to both generic and individual forms of the Principle of Plenitude that he endorses.

In Chapter Nine, "The Logic of Divine Discourse: Fakhr ad-Dīn ar-Rāzī's Application of Logic to Qur'ānic Interpretation", Tareq Moqbel explores the relationship between the discipline of logic and Fakhr ad-Dīn ar-Rāzī's (d. 606/1209) Qur'ānic hermeneutics. It attempts this through an examination of logic in ar-Rāzī's Qur'ān commentary, *Mafātīḥ al-Ghayb*, that is, the Qur'ānic passages on which ar-Rāzī commented by recourse to logic. References are also

made to ar-Rāzī's works in logic to discern how they contributed to his *tafsīr*. The article shows that ar-Rāzī's adherence to the principles of logic generates the particulars of his Qur'ānic exegesis, and consequently argues that ar-Rāzī deployed logic because he considered it to be an appropriate instrument for solving interpretive problems and, thus, for understanding the Qur'ān. More generally, the article shows that, for ar-Rāzī, logic was not merely a theory—it had a real applications.

In Chapter Ten, "A Problem with the Wholly Hypothetical Syllogism: Some 13th-Century Arabic Discussions" Khaled El-Rouayheb discusses the treatment of a class of syllogistic inferences from two conditional premises. In the Arabic tradition these argument forms, known as wholly hypothetical syllogisms, were first recognized by Avicenna, who identified a series of issues that continued to be discussed in the subsequent centuries by post-Avicennan logicians. The chapter examines the approaches of al-Khūnajī (d. 1248), al-Bandahī (d. 1259), al-Abharī (d. 1265), aṭ-Ṭūsī (d. 1274), al-Kātibī (d. 1276), al-Urmawī (d. 1283) and Ibn Wāṣil (d. 1298). Apparent counterexamples to such inferences were given already by Avicenna and came to be discussed intensely in the thirteenth century and beyond.

In Chapter Eleven, "A 12th-Century Attack on Peripatetic Logic: Rashīd ad-Dīn al-Waṭwāt's (d. 1182) Treatise 'A Doubt About *reductio ad absurdum*' and Its Aftermath" Dustin Klinger investigates a previously unstudied treatise by Rashīd ad-Dīn al-Waṭwāt (d. 1182) on the implausibility of the rule of *reductio ad absurdum*. In the context of the Aristotelian syllogisms, this rule is needed to establish the conversions of certain propositions and, consequently, the validity of any syllogistic mood (other than the four purely universal ones). Therefore, an argument against the plausibility of *reductio ad absurdum* casts doubt on the whole system of the Aristotelian syllogisms. The core idea of Rashīd ad-Dīn's criticism goes as follows: Although every proposition has only one converse, *reductio* can establish several distinct propositions as conversions of a single proposition. This means that *reductio* is not a defensible strategy for establishing conversions. As a result, it is not plausible to use it to prove the validity of syllogistic moods. In Addition to Rashīd ad-Dīn's own argument, Klinger discusses and evaluates the responses by Ibn Ghaylān al-Balkhī (d. ca. 1194), Shihāb ad-Dīn as-Suhrawardī (d. 1191), and Fakhr ad-Dīn ar-Rāzī (d. 1210). Klinger argues that, by surpassing his predecessors, Rāzī decisively disproved Waṭwāt's arguments.

In Chapter Twelve, "Four Moves to Rule Them All: *Qiyās*-Dialectic Metatheories and the Ascendancy of Master-Category Objections in Post-Classical Islamic Dialectics" important aspects of the post-classical genre of *ādāb al-baḥṭh wa-l-munāẓara* are discussed by Walter Edward Young in his study of Molla

Fenârî's (d. 834/1431) *Fuṣūl al-Badā'ī'*. Young's chapter is, in particular, focused on the questions of why and how the great plurality of objections known to classical juristic *jadal* was reduced to a mere handful in the post-classical genre of *ādāb al-baḥth*. He believes that Fenârî's *Fuṣūl al-Badā'ī'* can help us answer these questions. Investigating the views of Molla Fenârî and his predecessors in legal theory and dialectic, Young shows how the scholars of the post-classical *ādāb al-baḥth* introduced metatheorizing processes to categorize the wide variety of general objections to classical juristic *jadal* under a few general types or "master categories". Molla Fenârî himself subsumes twenty-three objections under only four general types. In his chapter, Young discusses four metatheories and illustrates them with examples predating Molla Fenârî's early Ottoman rendering.

In Chapter Thirteen, "The Negative-Predicate Proposition in Later Arabic Logic" Asad Q. Ahmed explores an invention in the field of post-classical (ca. 1200–1900 CE) Arabic logic that was meant to circumvent various problems related to propositional semantics. In view of the collection of various entrenched and general rules established in the tradition, certain seemingly-true claims emerged as problematic, leaving one with the limited possibility that they should be abandoned as false, be declared to be exceptions to the rules, or determined to be nonsensical. Similarly, in preserving a set of such rules and principles, certain other equally well-established ones appeared compromised. In other words, the system appeared to be strained under the weight of its own principles. Post-classical logicians invented various ways to engage such issues; and one among them was the negative-predicate proposition (*qaḍīyya sālībat al-maḥmūl*).

Finally, in Chapter Fourteen, "Prolegomena to a Critical Edition of Sāwī's *Baṣā'ir*" Eshera, Savadi, and Wisnovsky reconstruct in detail the history of the reception of *al-Baṣā'ir an-Naṣīriyya fī Manṭiq* ([*Logical*] *Insights for Naṣīr* [*ad-Dīn*]), an early post-Avicennan 12th-century logic text by 'Umar ibn Sahlān as-Sāwī's (d. ca. 566/1170) and offer, in the appendix, a blueprint for a future critical edition of the text. The chapter casts new light on the early Modern Circulation of the *Baṣā'ir* in Mount Lebanon in the context of the Christian-Arabic logical tradition as well as on the role played in the history of its reception by Egyptian educational reformer Muḥammad 'Abduh (d. 1323/1905) and the Bulaq Press in Cairo at the turn of the 20th century.

Taken together, these highly original chapters on logic, soul, and the world constitute a fitting tribute to field-changing scholar.

Interview with Tony Street: A Retrospective

1 How Did You Start in Islamic Studies?

I got a BA in Asian Studies with an Arabic major from the ANU in 1980 and went straight on to do a doctorate there with Tony Johns. He had suggested I work on Fakhr ad-Dīn ar-Rāzī's commentary on the Koran. I settled on a study of angels in the Koran and the creed. I'd never read anything like ar-Rāzī's commentary on the *Fātiḥa* before or since: the systematic generation of myriad questions, followed by their orderly resolution. The mind that could generate such doubts! Here was a genius in finding cause to doubt.

2 But You Did Most of the Work in Cairo?

Tony set things up so I could go to Cairo to study with Father Georges Anawati. Life with the fathers in IDEO (Institut dominicain d'études orientales) was austere but idyllic. Father Anawati gave me an hour each evening before prayer. He would check my translations and explain the context for ar-Rāzī's methods and claims. In retrospect, I can't believe how generous he was with his time. Father Anawati also read my first essay on ar-Rāzī. He came back after he'd read it and told me (roughly) "this is unintelligible nonsense." I will be forever grateful to him for his honesty.

There is no way to say how much I owe Tony and Father Anawati. Even though Father Anawati taught me more about solving specific problems that came up while reading ar-Rāzī, Tony taught me more about reading, or to be more precise, gave me the gold standard for the kind of interpretation to which I still aspire. Every moment I spend trying to formulate a medieval author's position on something, I hear Tony ask, "But what do the texts say?"

3 What Happened to the Doctorate?

I never published it, though the ANU made it available—against my will, as it happens—as a download. I published a couple of articles from it, an overview of angels in Islamic theology, and an attempt to correct a tendency in the field to look on ar-Rāzī as someone who disowned his rationalist work in later life. I think the field has moved on too far for the dissertation to be of interest, but I guess I'll look at it again in retirement and see whether it has anything to offer.

It's certainly true that Rāzī studies are booming now. I always like to remind everyone that it was Father Anawati who noticed—as late as 1967!—that there was no article in the *Encyclopaedia of Islam* on ar-Rāzī. It was an astonishing gap.

4 How Did You Go from ar-Rāzī on Angels to the Logic?

The doctorate defined me. It left me with a fascination in commentary and in the logical machinery so close to the surface of ar-Rāzī's commentary. I turned to deal with the second of those fascinations, the logic. I thought it would take only a little time (reading Tareq Moqbel's article, it's easy to see the Koranic commentary deploys a solid but not frightening number of standard logical moves) and started reading the logic of ar-Rāzī's *Lubāb al-Ishārāt*. At that stage I couldn't find a copy of ar-Rāzī's long commentary on the *Ishārāt*, though later I found an article by Nicholas Heer that mentioned a good manuscript in Berlin; even before then, it became obvious through a photo in one of Arberry's handlists that there was a bad copy in the University Library (Cambridge). In fact, the transcription of the passage in my article on ar-Rāzī's critique of Avicennan logic came first from the UL manuscript.

5 But You Weren't Interested in Avicennan Logic for Its Own Sake?

It rapidly became clear that everything ar-Rāzī did in the logic had to be understood in light of Avicenna's logic. Tony had given me a copy of Dunyā's edition of Avicenna's *Ishārāt* with aṭ-Ṭūsī's commentary on it, *Ḥall Mushkilāt al-Ishārāt*; since aṭ-Ṭūsī wrote it at least in part to answer ar-Rāzī's objections to Avicenna, I thought I would start with a section in which aṭ-Ṭūsī explicitly mentioned and dwelt on rejecting a claim ar-Rāzī had made. It was on conditionals and the disjunctives they are equivalent to, a paper that I think started out okay. Even when I was writing it, I knew it fell into ruins at the end. Now I know I should have read al-Ḥillī's *al-Qawā'id al-Jaliyya fī r-Risāla ash-Shamsiyya*; I would have known about the strong and weak readings of the conditionals and disjunctions that would in turn have solved the final part of the paper. I went on to a study of the absolute proposition in Avicenna (that maybe introduced the choice of "descriptive" as a translation of *waṣfī*), then a study of his syllogistic. All three papers tried to make sense of what ar-Rāzī was doing, with varying degrees of partial success. Everyone counselled me to focus on Avicenna's longer and clearer works, especially the *Shifā'*, but also the *Najāt*.

They were right, and I wish I'd had the sense to beat Asad Ahmed to the punch in translating the logic from the *Najāt*.

Anyway, it was soon after I submitted the article on absolute propositions that I got a new job; in 1999 I left the ANU for Cambridge.

6 Was There Anyone Else from the Early Days Who Inspired You?

The second two papers mentioned above were both inspired by work of my former colleague at ANU, Paul Thom. He had set out what still seems to me to be the ideal description of Aristotle's modal syllogistic, neutral enough to await whatever interpretation turned out to be appropriate. I tried to mimic his approach for an overview of Avicenna's syllogistic. Paul became the most valuable collaborator I could have hoped for, responding to translations and correcting many things that I had misrepresented. As far as I'm aware, he was the first person to attempt a formal interpretation of Avicenna's logic. When I was on a sabbatical from the ANU at the Oxford Centre for Islamic Studies, I translated bits of aṭ-Ṭūsī's commentary on *Pointers* (the *Ḥall Mushkilāt al-Ishārāt*), mainly the bits on syllogistic. Paul responded to it in several publications. The translated extracts float round the internet, and I guess my major goal in retirement is to publish the full version I have with facing-page Arabic.

7 What Were Your Biggest Mistakes?

They are legion. I remember when I was writing the overview of Avicenna's categorical syllogistic, I was external examiner for Fritz Zimmermann's MPhil program at Oxford. I told him that I was devoting a footnote to correcting the mistakes I'd made so far. "A footnote? That's enough space? It would take me volumes." Well, me too.

But I guess the real blunders came around 2000, and they were strategic blunders. I'd agreed to several requests to write introductory accounts of Arabic logic. It was the worst mistake I ever made, to get involved in writing one entry after another for encyclopaedias and handbooks. When you've got a field without much of a tradition of research, every new contribution has an impact on what you need to say quite unlike a new contribution in an established field. What was worse was how dispiriting it was, trying to convince medievalists working on the Latin tradition that masses of creative work went on after Averroes. (And the focus among Latinists on Averroes probably made me reactively underestimate the scale of his contribution to the history of Arabic logic;

Fouad ben Ahmed has rightly upbraided me for that.) I also got stuck on a small range of issues that cropped up regularly from the earliest days of the tradition through to about 1350 (the self-imposed limit I had for how late I would go); the issues provided elements for a narrative of selective appropriation of the Greek tradition, and its naturalization and active development. The end date was arbitrary, except that I wanted it to be after the Mongol invasion; at least from my perspective, important work in Arabic logic—no less interesting than Avicenna's—was done after the invasions. I regret the end date, because I have been asked more times than I care to think whether I stopped at that point because there's nothing of interest afterwards. I wish I'd worked on ad-Dawānī and the other early modern logicians; I think recent papers by Khaled El-Rouayheb are immensely important because they push back against this unfortunate tendency to relegate later work by Arabic logicians to the dustbin of history.

I also got stuck on writing about post-Avicennan logicians on the question of Avicenna's modalized syllogistic. I think a couple of studies (on al-Khūnajī and al-Ḥillī) presented new material to the field, but I had got to the limit of my technical competence and the gains I was making (if any) were meagre relative to the work I was putting in.

8 Any Sunlit Uplands?

At about the same time that I got distracted by writing overviews, or a little bit later, I started writing grant applications. I'm immensely proud of two, one on Aristotelian logic in the Arabic and Latin traditions (John Marenbon piloted the Latin side of the project), the other, on post-Avicennan philosophy of language (with Cornelia Schöck, who got funding from the DFG that dwarfed the funding from the AHRC). I don't think the publications that resulted from either grant were field-changing, but both grants gave me an opportunity to work with people new to the field. I'm especially happy that in the second project I got the chance to work with Riccardo Strobino. Anyway, I think the grants helped support people who have gone on to do excellent things.

And there have been the doctoral students. The thing I fear most about retirement is not having a chance to watch someone come fresh to the field and find new things.

9 It Took a Long Time for the Book ...

Near the beginning of the second grant, I guess in 2012, I was asked by James Montgomery if I wanted to translate Najm ad-Dīn al-Kātibī's *Epistle on Logical Rules for Shams al-Dīn*. Translating the *Epistle* was the best decision I've ever made. It looks easy, and it had been translated long ago by Sprenger and Kay. More, Rescher had devoted what for me had been ground-breaking studies of its modal logic. But once I started to translate, I found I had to go back time and again to the commentaries on it for help. I mainly used three early commentaries, by al-Ḥillī, at-Taḥṭānī and at-Taftāzānī. Once they made me aware of the thicket of problems round each paragraph of the *Epistle*, and how deeply the problems ramified, I resolved to go no deeper than al-Ḥillī did in his commentary. Even so, the *Epistle* goes into some difficult areas. More importantly, it gives one influential perspective on how the whole discipline develops systematically from the opening division into conception and assertion through to the closing presentation of the theories of fallacy and demonstration.

10 What Do You Look Forward to?

Except for a putative auto-commentary on the *Epistle* by al-Kātibī (which came out in 2019), most of the recent work on al-Kātibī's logic that needs to be considered for a full assessment of his contribution came out after my translation and commentary went to the publisher. Now we have editions of his commentary on Khūnājī and of his long *Summa of Subtle Points* (*Jāmi' ad-Daqā'iq*), the most pressing need is for an edition of his commentary on ar-Rāzī's *Mulakhkhaṣ*. With these texts, we'll be able to go on to map the claims in the *Epistle* against al-Kātibī's advanced logic, and against his greatest post-Avicennan predecessors. That's the project I would most like to see underway. That said, I think it would be immensely valuable for understanding Aristotle's different receptions to compare the *Epistle* and the commentaries on it with Peter of Spain's *Summaries of Logic* and the commentaries on it.

I've been involved in a few projects, mostly as a benevolent supernumerary, but two stand out for me. One is in Lille with Leone Gazziero and Shahid Rahman on fallacies literature in the great Mediterranean religio-linguistic traditions. I've been a bit desultory in getting on with a translation of Avicenna's *Safsaṭa*, but I've been fascinated to learn how differently scholars from the various traditions understood the text, and how fervently (or otherwise) they adopted it. The other project was in Jerusalem at the Israel Institute of Advanced Studies, on the reception and impact of Aristotelian logic on medieval Jewish

culture, led by Charles Manekin and Yehuda Halper. My own contribution was on Abū l-Barakāt al-Baghdādī, a twelfth-century Jewish philosopher who converted—whether willingly or not we do not know—to Islam and who responds to Avicenna in a brilliantly subversive way. I've been drawn to comparative work by those two projects even more strongly than before. I think we'll arrive at important cultural insights into the reception of Aristotle, not only with respect to the Arabic world, but the Latin and Hebrew worlds too.

Al-Fārābī on Future Contingency

Mohammad Saleh Zarepour

1 Introduction

According to the Principle of Bivalence (PB), every proposition has exactly one truth-value, either true or false.¹ However, the application of this principle to future propositions—i.e., propositions which express a future state of affairs—might have counterintuitive consequences. It might imply that everything in the future is necessary, whereas at least some future propositions seem to be contingent.² Suppose that P is a proposition that expresses a future state of affairs (e.g., a future event or action) S.³ If P is now true, then S will definitely be realised. It cannot not happen, because otherwise P must be false at the present time. Similarly, if P is now false, then there will be no way for S to be realised. It cannot happen, because otherwise P must be true at the present time. But if PB is applicable to all future propositions, then P is now either true or false. This implies that S either necessarily occurs or necessarily fails to occur. Put otherwise, if every future proposition now has a truth-value, either true or false, then there is no contingency in the future. Everything that will happen is necessary. Despite appearances, there is no future contingent state of affairs. This is the puzzle of Logical Determinism (LD) that Aristotle addresses in *De Interpretatione*.

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- 1 For the sake of simplicity, throughout this paper I do not consider any significant differences between ‘proposition’, ‘statement’, and ‘sentence’. I take them to be coreferential, and so all of them can in principle be truth-value bearers and subject to the application of PB. There are two principles that are strongly related to, though distinct from, PB: The Principle of Non-Contradiction (PNC), which states that a proposition and its negation cannot both be true (at the same time and in the same respects), and the Principle of Excluded Middle (PEM), which states that any such couple of propositions cannot both be false. For a clarifying discussion of PB and its connections to PNC and PEM, see Jean-Yves Béziau, “Bivalence, Excluded Middle and Non Contradiction,” in *The Logica Yearbook 2003*, ed. Libor Běhounek (Prague: Academy of Sciences, 2004), 73–84.
 - 2 Following the standard practice, I interpret contingency as strict or two-sided possibility, which excludes both impossibility and necessity.
 - 3 For the sake of simplicity and brevity, hereafter I use ‘P’ and ‘S’ to refer, respectively, to an arbitrary future proposition and the state of affairs expressed by it. Unless otherwise specified, S is assumed to be a contingent state of affairs in the sense that it may or may not happen.

tion 9 through his notorious example of a future contingent proposition (FCP): There will be a sea-battle tomorrow.

A closely related puzzle about future contingency that is not addressed by Aristotle is the puzzle of Theological Determinism (TD), according to which God's foreknowledge of the future leaves no room for future contingencies.⁴ Reconsidering P, even if one believes that there is a way out from LD and that the truth of P is compatible with the contingency of S, one may still insist that God's foreknowledge of P is incompatible with the contingency of S. If God foreknows P but S will not be realised, then God's foreknowledge will be falsified. But God's knowledge is infallible, and God's foreknowledge cannot be falsified. So, if God foreknows P, then S will necessarily be realised. God's foreknowledge of P rules out the possibility of its being false. Therefore, God's foreknowledge of P is incompatible with the contingency of S. More generally, God's foreknowledge of future propositions renders all of them necessary. If God foreknows the future, there will be neither future contingency nor any genuine FCPs.

The present chapter engages with a tenth-century discussion of these two puzzles offered by al-Fārābī (d. 950) in his *Commentary on Aristotle's De Interpretatione* (*Sharḥ al-ʿIbāra*).⁵ In his engagement with *De Interpretatione* 9, al-Fārābī first analyzes Aristotle's discussion of LD and its solution. According to al-Fārābī's reading, the conclusion of Aristotle's discussion is that FCPs cannot have *definite* (*muḥaṣṣal*) truth-values. The nature of the states of affairs expressed by FCPs is *indefinite* (*ghayr muḥaṣṣal*) in the sense that their existence is not yet settled. And, due to the indefiniteness (*ghayr at-taḥṣīl*) of their nature, FCPs cannot be known definitely (*ʿalā at-taḥṣīl*). Al-Fārābī then raises an objection to this solution by presenting TD, which was not touched on by

4 In a broader sense, theological determinism can be understood as any incompatibility between any of God's attributes and the existence of contingencies and indeterminacies. For example, one might argue that everything is theologically determined because (1) everything is necessarily caused by God (either immediately or through some mediate causes) and (2) every attribute of God (including God's will, causal power, and action) is necessary. Nevertheless, in this chapter, by 'Theological Determinism' I refer exclusively to the claim that God's foreknowledge rules out all future contingencies.

5 The original Arabic text of this commentary can be found in Alfarabi, *Alfarabi's Commentary on Aristotle's Περὶ Ἑρμηνείας*, ed. Wilhelm Kutsch and Stanley Marrow (Beyrouth: Imprimerie Catholique, 1966) and al-Fārābī, *Al-Manṭiqiyyāt*, ed. Muḥammad Taqī Dānishpazhūh, 2nd print (Qum: Maktaba Āyat Allāh al-Marʿashī an-Najafī, 2012), 2: 1–259. I use the former edition and refer to it simply as '*Sharḥ al-ʿIbāra*'. An English translation of this commentary can be found in Fritz W. Zimmermann, *Al-Farabi's Commentary and Short Treatise on Aristotle's De Interpretatione* (Oxford: Oxford University Press, 1981). Although I have consulted and benefited from this translation, all the translations from Arabic texts are mine.

Aristotle. God has foreknowledge of the future only if God knows FCPS in a definite sense, or so al-Fārābī argues. But the definite knowability of FCPS seems to be incompatible with the indefiniteness of their truth-values and, consequently, with the contingency of the future states expressed by these propositions. After rejecting a potential solution, apparently popular in his time, al-Fārābī develops his own solution to TD, whose core idea can also be used to construct a solution to LD.

Al-Fārābī's theory of future contingency has been analysed in several works, the most meticulous of which is probably Peter Adamson's seminal paper "The Arabic Sea Battle".⁶ Nevertheless, there is no consensus on whether or not al-Fārābī's own solution to LD is compatible with his reading of Aristotle's solution to this puzzle. Some scholars believe that al-Fārābī's solution to LD is just a complement to (or enhancement of) the view he attributes to Aristotle. Others see the two solutions as completely incompatible. According to the latter view, the Fārābian solution is offered as an alternative to the Aristotelian solution, which is vulnerable to the objection built upon the doctrine of divine foreknowledge. Defending this approach, Peter Adamson argues that the source of the incompatibility between the two solutions is that although al-Fārābī (like Aristotle) believes that the future is indefinite, al-Fārābī's own understanding of the notion of *(in)definiteness* is different from what he attributes to Aristotle. In other words, *(in)definiteness* in al-Fārābī's discussion of Aristotle's theory must be understood in one sense and in al-Fārābī's discussion of his own solution in another sense, or so Adamson suggests.

In this chapter, I provide a detailed analysis of al-Fārābī's theory of future contingency and show that he does not find Aristotle's solution to LD defensible. Indeed, I defend the view that al-Fārābī's own solutions to TD and LD are radically inconsistent with the solution that he attributes to Aristotle. However,

6 Some of the most notable works on al-Fārābī's view regarding future contingency are as follows: Nicholas Rescher, "An Interpretation of Aristotle's Doctrine of Future Contingency and Excluded Middle," in *Studies in the History of Arabic Logic* (Pittsburgh: University of Pittsburgh Press, 1963), 43–54; Zimmermann, *Al-Farabi's Commentary*, "Introduction"; Michael E. Marmura, "Divine Omniscience and Future Contingents in Alfarabi and Avicenna," in *Divine Omniscience and Omnipotence in Medieval Philosophy: Islamic, Jewish and Christian Perspectives*, ed. Tamar Rudavsky (Dordrecht: Springer, 1985), 81–94; Barry S. Kogan, "Some Reflections on the Problem of Future Contingency in Alfarabi, Avicenna, and Averroes," in *Divine Omniscience and Omnipotence in Medieval Philosophy: Islamic, Jewish and Christian Perspectives*, ed. Tamar Rudavsky (Dordrecht: Springer, 1985), 95–101; Fehrullah Terkan, "Does Zayd Have the Power Not to Travel Tomorrow? A Preliminary Analysis of al-Fārābī's Discussion on God's Knowledge of Future Human Acts," *The Muslim World* 94, no. 1 (2004): 45–64; and Peter Adamson, "The Arabic Sea Battle: al-Fārābī on the Problem of Future Contingents," *Archiv für Geschichte der Philosophie* 88, no. 2 (2006): 163–188.

it does not seem to me that the source of this inconsistency can be identified as his change of mind regarding the meaning of *(in)definiteness*. What he means by this notion in the development of his own solutions is the same as what he means by it in his presentation of Aristotle's view. The tension between the two approaches stems from the fact that, by contrast with Aristotle (or, more precisely, with al-Fārābī's Aristotle), al-Fārābī does not think that the truth-values of FCPs are indefinite. But nor does he think that the definiteness of the truth-value of a proposition rules out the contingency of its content.

This chapter proceeds as follows: In section 2, I discuss the overall structure of al-Fārābī's engagement with *De Interpretatione* 9 and clarify the general role of the notion of *(in)definiteness* in his analysis of Aristotle's theory of future contingency. Section 3 illustrates what al-Fārābī really means by this notion. I argue that, according to al-Fārābī, Aristotle thinks that FCPs have indefinite truth-values in the sense that they are not yet either true or false. They are hovering between truth and falsity. My discussion in this section reveals how al-Fārābī's investigation of Aristotle's view naturally leads him to address TD. In section 4, I examine al-Fārābī's own solutions to TD and LD, and defend the claim that he has not changed his views regarding the meaning of *(in)definiteness*. I show that he instead rejects the Aristotelian idea that FCPs have indefinite truth-values. He seems to believe that although their truth-values are definite, such a definiteness does not imply the necessity of the future. In section 6, I close by making some concluding remarks. To justify my construal of al-Fārābī's theory of future contingency, I also engage—though only occasionally—with his abridgement of Aristotle's *De Interpretatione* (*Al-Ibāra*).⁷

2 Al-Fārābī's Engagement with *De Interpretatione* 9

The general structure of Aristotle's presentation of LD in *De Interpretatione* 9 can be seen in two different ways. Aristotle can be read as offering a *dilemma* between the applicability of PB to future propositions and our strong belief in the openness (or indeterminacy) of the future. On this interpretation, Aristotle's discussion aims to settle which horn of the dilemma must be preserved

7 The original Arabic of this abridgement can be found in al-Fārābī, "Kitāb Bārī armīnyās ay *Al-Ibāra*," ed. and trans. (in Turkish) by Mübahat Türker-Küyel, *Arastırma* 4 (1966): 35–85, and al-Fārābī, *Al-Manṭiqiyyāt*, 1: 83–114. I use the latter edition and refer to it simply by '*Al-Ibāra*'. The English translation of this work can be found in Zimmermann, *Al-Farabi's Commentary*, 220–247.

and which one must be given up. None of them is presupposed to be true from the outset. Alternatively, Aristotle's description of LD can be read as a *reductio*. According to this interpretation, Aristotle takes it for granted as a piece of common sense that the future is—in at least some respects (e.g., those that depend on our future voluntary actions)—open (or indeterminate). He then formulates LD as a *reductio* which intends to show that the assumption of the general applicability of PB to future propositions is not justifiable because it has absurd consequences. This assumption allegedly entails the closedness (or determinacy) of the future, which contradicts our certain knowledge of the openness of the future.

Regardless of which interpretation we hold, Aristotle's anti-determinist (or anti-fatalist) reaction to LD can be interpreted in one of the following ways:

- (I) PB is not applicable to all future propositions because FCPS have no truth-value.
- (II) PB is not applicable to all future propositions because FCPS have a truth-value other than true or false.
- (III) Although PB is applicable to all future propositions (including FCPS), this does not imply the determinacy of the future.⁸

Note that the commitment to a certain interpretation of the structure of LD does not force us to embrace a specific reading of Aristotle's solution. Most importantly, there is no incoherence in believing both that Aristotle has presented LD as a *reductio* and that his indeterminist solution must be read as (III). One can consistently hold that although Aristotle presents LD as a *reductio*, he wants to show eventually that this *reductio* is fallacious, and fails because the general applicability of PB to future propositions does not validly imply the closedness of the future. A proponent of this reading could insist that, for Aristotle, PB is unproblematically applicable to genuine FCPS.

According to al-Fārābī, Aristotle presupposed the indeterminacy and contingency of the future and presented LD as a *reductio* which shows that a certain view about future propositions (namely, the general applicability of PB to future propositions) must be rejected because it contradicts the contingency of the future. On this interpretation, Aristotle is *not* investigating whether or not the future is (at least to some extent) indeterminate in nature. However, al-Fārābī reports that this is not 'what the majority of the commentators [of Aristotle] say about it [i.e., Aristotle's approach].'⁹ Al-Fārābī argues that the

8 For different historical and contemporary interpretations of Aristotle's solution, see Richard Gaskin, *The Sea Battle and the Master Argument: Aristotle and Diodorus Cronus on the Metaphysics of the Future* (Berlin: Walter de Gruyter, 1995).

9 Al-Fārābī, *Sharḥ al-Tbāra*, 83, l. 8.

dilemmatic analysis of these commentators is not acceptable because it presumes that Aristotle's mind has not been formed about the modal status of the future and he is examining different options about this issue in *De Interpretatione* 9. Two reasons are provided by al-Fārābī for the implausibility of this presumption.

First, al-Fārābī contends that 'we know that many things are possible to be and not to be, and the first thing known as such is what depends on our choice and volition.'¹⁰ He believes that 'what we know by nature (*fuṭirnā 'alayhi*) regarding the evident existence of possibility in voluntary things, whose choice is up to us, should not be put as a subject of inquiry.'¹¹ Everyone takes the existence of contingencies for granted even if they refuse to acknowledge it verbally and explicitly. This suffices to establish that the existence of possibilities is self-evident to everyone. Alluding to *Posterior Analytics* (74b24), al-Fārābī states that, for Aristotle, verbal acknowledgement and explicit common acceptance of a claim are not criteria for its being self-evident. Even if one refuses to acknowledge the existence of future contingencies, everyone's mind acknowledges it by nature.¹² This indicates that we should take the claim that there are future contingencies 'as one of the self-evident premises (*al-muqaddmāt al-bayyina bi-anfusihā*) and principles (*al-awā'il*) whose denial is impossible (*mumtani'*) and absurd (*muḥāl*).'¹³ In other words, the openness of the future is something we should begin our arguments *from*, rather than something that we should argue *for*. As a result, the dilemmatic reading of Aristotle's discussion is not defensible.

Second, al-Fārābī argues that the commentators of Aristotle are wrong to take his presentation of LD as a dilemma because this 'makes them [i.e., the commentators] take logic as investigating into the nature of the existing things and how they exist.'¹⁴ The mere fact that *De Interpretatione* is a treatise in logic

¹⁰ Al-Fārābī, *Sharḥ al-'Ibāra*, 83, ll. 14–15.

¹¹ Al-Fārābī, *Sharḥ al-'Ibāra*, 83, ll. 24–25.

¹² Al-Fārābī, *Sharḥ al-'Ibāra*, 83, ll. 25–84, l. 3. See also pages 90–93, where al-Fārābī, discussing lines 18b31–19a9 of *De Interpretatione* 9, argues extensively that the mere fact that we deliberate on and make provisions for our future actions implies that we have already accepted the existence of contingencies. Absent future contingencies, such deliberations and reflections would be pointless.

¹³ Al-Fārābī, *Sharḥ al-'Ibāra*, 84, l. 5.

¹⁴ Al-Fārābī, *Sharḥ al-'Ibāra*, 84, ll. 12–13. Although Zimmermann doubts whether any ancient commentator has offered a dilemmatic interpretation of Aristotle's discussion, Adamson has shown that such an interpretation can indeed be found in Ammonius. See Zimmermann, *Al-Farabi's Commentary*, cix, and Adamson, "The Arabic Sea Battle," 168–169, respectively.

(and, therefore, not the right place to discuss metaphysical issues such as the (in)determinacy of the future) could rule out the dilemmatic reading of Aristotle's discussion of LD, or so al-Fārābī suggests:

T1. That is their [i.e., the commentators'] mistake. They themselves abstain from that [in other logical works]. That is why, in the *Categories*, they abstained from making the categorization of existents inasmuch as they are existents. Their abstinence from making any part of logic as an investigation into the nature of existents in themselves is more appropriate [than what they do about *De Interpretatione* 9 by seeing it as engaging with a metaphysical issue].¹⁵

Seemingly unaware of commentators who offered the same reading as his own, al-Fārābī's argues that Aristotle's presentation of LD must be construed as a *reductio*.¹⁶ Since the existence of future contingencies is an indisputable fact, every claim that contradicts this fact must be rejected. That is how al-Fārābī understands Aristotle's approach. Commenting on *De Interpretatione* 9, 18a28–33, al-Fārābī describes what Aristotle begins to do in these lines as follows:

T2. He then investigates the issue of two opposites (*al-mutaqābilayn*), whether or not truth in one of them and falsity in the other are definite (*'alā at-taḥṣīl*). If we take it [i.e., the association of truth and falsity with propositions] to be definite, then this implies the utter elimination of possibility from things. We should therefore know that our statement—that the truth of the true one of them is definite and the falsity of the false one of them is definite—is false, both in itself (*fī nafsīhi*) and to us (*'indanā*). Thus, we should say that the truth of the true one of two opposites expressed about contingent things is in itself indefinite (*ghayr 'alā at-taḥṣīl fī nafsīhi*).¹⁷

By 'two opposites,' al-Fārābī here refers to the pair of a proposition and its negation.¹⁸ If we endorse all PB, PNC, and PEM, then necessarily, in each pair of such

15 Al-Fārābī, *Sharḥ al-Ibāra*, 84, ll. 13–16.

16 Zimmerman (*Al-Farabi's Commentary*, cix) contends that reading Aristotle as offering a *reductio* is, in fact, 'a thoroughly traditional interpretation of the chapter, transmitted no doubt by the very commentators he [i.e., al-Fārābī] criticizes.' Adamson ("The Arabic Sea Battle," 169) has shown that Boethius, in particular, held such an interpretation.

17 Al-Fārābī, *Sharḥ al-Ibāra*, 84, ll. 6–10.

18 To refer to the pair of a proposition and its negation and/or to the logical relation between

opposite propositions, one proposition is true and the other is false.¹⁹ However, the crucial notion in the above passage is *definiteness* (*taḥṣīl*). Al-Fārābī contends that if the association of truth and falsity with propositions is definite, then possibility (or, more precisely, contingency) will be removed from the things (i.e., the states of affairs) expressed by such propositions. But since it is undeniable that there are contingent states of affairs, we have no option but to accept that the truth of propositions expressing such states must be intrinsically indefinite.

T2 indicates that, according to al-Fārābī, Aristotle's concern is not a metaphysical issue regarding the modes of existence. It is rather a logical issue regarding the modes of truth. Aristotle has taken for granted the presence of contingency in existence and is now examining whether or not truth can be definite. More precisely, in al-Fārābī's reading, the main question of *De Interpretatione* 9 is whether contingent facts can be described by definite truths. He understands *De Interpretatione* 9, 18a28–33 as stating that although the association of truth-values with past and present propositions is definite, their association with FCPs cannot be definite. He first points to the definiteness of the truth-values of past and present propositions for Aristotle:

T3. He [i.e., Aristotle] says that [in] the contradictories (*al-mutanāqidāt*) regarding what has passed and what exists now—meaning the individual opposites that have passed or exist now—the false one of them is definitely false, and the true one of them is definitely true, whether we know it or not, as we said.²⁰

Al-Fārābī then observes that Aristotle considers a different status for future states of affairs:

T4. That is how his opening—which is his statement: 'but with future particular meanings (*al-ma'ānī al-juzwiyya al-mustaqbala*) it is not like

them, al-Fārābī uses derivatives sometimes from the Arabic term '*taqābul*' and sometimes from '*tanāquḍ*'. I translate these terms as 'opposition' and 'contradiction,' respectively. According to the standard terminology of Aristotelian logic, every contradiction is an opposition but not vice versa. However, it seems that al-Fārābī has incautiously used these two notions interchangeably. That is why the pair consisting of a proposition and its negation is referred to sometimes as 'two opposites' and sometimes as 'two contradictories' (compare, for example, T2, T3, T11, and T12).

19 On PNC and PEM, see the first footnote. It will shortly be shown that al-Fārābī endorses both of them.

20 Al-Fārābī, *Sharḥ al-'Ibāra*, 82, ll. 16–18. See also 82, ll. 4–7 and 96, ll. 15–16.

this’—points to what we said. That is how he wants to elucidate that the things he mentioned [about future states of affairs] are different from their counterparts regarding past and present issues. That is why he puts the contrary of what he wants to elucidate as a clause stating that ‘but with them it is not like this’, i.e., [it is not] definite.²¹

Thus, according to al-Fārābī’s reading of Aristotle, by contrast with past and present propositions, truth-values of FCPS are not definite. Indeed, al-Fārābī believes that Aristotle ‘puts as a conclusion to all that he says in this context that the truth or falsity of [each of] the two opposites regarding the possible states of affairs is in itself indefinite.’²² Aristotle tries to establish that the definiteness of the truth-values of FCPS implies the necessity and closedness of the future. Since this consequence is self-evidently absurd, the definiteness of the truth-values of FCPS must be rejected. Hence, in al-Fārābī’s reading, the conclusion of Aristotle’s discussion is that FCPS have indefinite truth-values.²³ To reject the view of the commentators who thought Aristotle aimed to defend the openness of the future based on the indefiniteness of future truths, al-Fārābī rhetorically asks: ‘How could he [i.e., Aristotle] appeal to it [i.e., the indefiniteness of the truth-values of FCPS] while he has already put it as the conclusion of what he has said?’²⁴ Here al-Fārābī is warning us not to confuse the correct direction of the development of Aristotle’s discussion.

To clarify how al-Fārābī interprets Aristotle’s view about FCPS, more work is in order. This is because the mere fact that FCPS have indefinite truth-values does not reveal how exactly FCPS differ from past and present propositions. Nor does it determine whether or not PB is applicable to FCPS. These issues depend on how we understand the notion of (*in*)definiteness. As noted by Adamson, the Arabic term ‘*alā at-taḥṣīl*’ corresponds to the Greek term ‘*ἀφωρισμένως*’ in ancient commentaries on *De Interpretatione* 9.²⁵ Although the Greek term, which literally means ‘definitely’ or ‘separately’, is not used by Aristotle in *De Interpretatione*, its Arabic counterpart can be found in al-Fārābī’s abridgement of this book.²⁶ But there is no consensus either on what al-Fārābī means by

21 Al-Fārābī, *Sharḥ al-ʿIbāra*, 84, ll. 23–26.

22 Al-Fārābī, *Sharḥ al-ʿIbāra*, 84, ll. 20–21.

23 As observed by Adamson (“The Arabic Sea Battle,” 164), this is also how Ammonius and Boethius read Aristotle.

24 Al-Fārābī, *Sharḥ al-ʿIbāra*, 84, ll. 21–22.

25 Adamson, “The Arabic Sea Battle,” 172–173.

26 See, for example, al-Fārābī, *Al-ʿIbāra*, 110, l. 12. Aristotle used this term in the *Categories*. In Ishāq Ibn Ḥunayn’s Arabic translations of the *Categories*, ‘*ἀφωρισμένως*’ has been translated with different derivatives of the root *ḥ-ṣ-l* in Form II. For example, it is translated as

‘(in)definiteness’ or on whether he uses this term consistently in different parts of *Al-Ibāra* and *Sharḥ al-Ibāra*. More specifically, the notion of (in)definiteness has been interpreted in two different ways. Following Adamson, I refer to these interpretations by (A) and (B), though I describe them in my own words:²⁷

- (A) For every proposition P, P’s truth-value is indefinite if and only if P is neither true nor false. On the other hand, P’s truth-value is definite if and only if P is either true or false.
- (B) For every proposition P, P’s truth-value is indefinite if and only if although P is either true or false, it is neither necessarily true nor necessarily false. On the other hand, P’s truth-value is definite if and only if P is either necessarily true or necessarily false.

If we understand the indefiniteness of the truth-values of FCPs in the sense of (A), then it means that BP is not applicable to FCPs at all. If we consider an FCP and its negation, neither of them is either true or false. We can still maintain that necessarily either the state of affairs expressed by the FCP in question or the state of affairs expressed by its negation will occur. Nevertheless, since neither state of affairs has yet occurred, truth and falsity are not yet distributed between the two contradictory propositions. Truth and falsity are hovering between them. Neither of the two truth-values is settled in any of the two propositions. If the notion of *indefiniteness* is understood in the sense of (A), then indefinite truth and indefinite falsity are one and the same thing. On this account, FCPs would be both indefinitely true and indefinitely false. Finally, if we read al-Fārābī’s use of ‘indefiniteness’ in his discussion of Aristotle’s solution in the sense of (A), then we have to conclude that the indeterminist solution that al-Fārābī attributes to Aristotle is either (I) or (II), depending on whether we take ‘being indefinitely true’ as ‘having a truth-value other than truth and falsity’ or as ‘having no truth-value at all’.²⁸

By contrast, if the indefiniteness of the truth-values of FCPs is understood in the sense of (B), then PB will be applicable to them. The only constraint that

‘*alā at-taḥṣīl*’ at 8b4 and as ‘*muḥaṣṣalan*’ at 12b39. See Aristotle, *Manṭiq Aristū*, ed. ‘Abd al-Raḥmān Badawī (Beyrūt: Dār al-qalam, 1980), 1: 53, l. 2 and 66, l. 21 (which correspond to 8b4 and 12b39, respectively). Both uses of the Greek term are translated as ‘definitely’ in *The Complete Works of Aristotle: The Revised Oxford Translation*, ed. Jonathan Barnes (Princeton: Princeton University Press, 1984). I am grateful to Alexander Lamprakis for an insightful discussion on the exact relations between the aforementioned Greek and Arabic terms.

27 Adamson, “The Arabic Sea Battle,” 165.

28 I do not know of any discussion of al-Fārābī’s view sensitive to the latter distinction. This is probably because his approach is not so fine-grained as to distinguish between (I) and (II). Logically speaking, it seems that his reading of Aristotle’s solution is compatible with both.

this sense of indefiniteness puts on the truth-values of propositions is that they cannot be necessary. On this interpretation of ‘indefiniteness’, indefinite truth and indefinite falsity are incompatible. As a result, the claim that FCPs have indefinite truth-values must be read in the sense that every FCP is either contingently true or contingently false but of course not both.

Some scholars (e.g., Zimmerman, Gaskin, and Adamson) believe that al-Fārābī takes Aristotle’s indeterminist solution to LD to be based on the indefiniteness of the truth-values of FCPs in the sense of (A). Others (e.g., Rescher) contend that al-Fārābī takes Aristotle’s solution to be based on the indefiniteness of the truth-values of FCPs in the sense of (B). One might think that this is because certain aspects of al-Fārābī’s discussion align more closely with the former interpretation, and others with the latter interpretation. But I argue that there is *no* evidence for such heterogeneity in al-Fārābī’s uses of the notion of (*in*)*definiteness* in different places. In the next section, I show that, in his analysis of Aristotle’s view, al-Fārābī uses this notion in the sense of (A). Furthermore, I argue that he consistently preserves this sense of indefiniteness even when he turns to develop his own solutions to TD and LD.

3 Al-Fārābī’s Aristotle and the Indefiniteness of FCPs

Just before commencing his discussion of *De Interpretatione* 9, al-Fārābī explains the meaning of *definiteness* as follows:

T5. The meaning of *definiteness* is that one of the opposites is true in itself (*fī nafsihī*)—even if we do not know its truth—and the other is false—even if we do not know its falsity. In such a case, the truth of the true one of them is in itself distinct (*mutamayyiz*) from the falsity of the false one of them, while their status in themselves may not be similar to their status to us (*‘indanā*).²⁹

According to this passage, a pair of opposites have definite truth-values only if one of them is true and the other is false. The true one must be distinct from the false one, even though we might be unable—for some reason (e.g., due to limitations in our cognitive capacities)—to know which one is true and which one is false. Put differently, while it is *logically* possible to know the truth-value of a definite proposition, our cognitive limitations may render this knowledge

29 Al-Fārābī, *Sharḥ al-‘Ibāra*, 81, ll. 12–15.

unattainable to us.³⁰ T5 does not take the necessity of a proposition as a constraint for its definiteness. According to this passage, a proposition has a definite truth-value whenever its truth-value is settled. For every P, if P is either true or false but not both, it has a definite truth-value, regardless of whether its truth or falsity is necessary. Thus, it is evident that, in T5, definiteness is understood in the sense of (A).

The last sentence of T5 states that the status of a definite proposition to us might be different from its status in itself. This means that a proposition with a definite truth-value might be indefinite to us. Now if we take the two sentences of T5 as expressing the same content in different words, we can conclude that the claim that a definite proposition might be indefinite to us means that although a definite proposition has a settled truth-value, we might not know what its truth-value is. Accordingly, for every proposition P, P is indefinite to us if and only if it is neither true nor false to us. Equivalently, P is indefinite to us if and only if either (a) we know that P is neither true nor false or at least (b) we do not know whether P is true or false.³¹ On the other hand, P is definite to us if and only if either (a*) we know that it is true or (b*) we know that it is false. It seems that in al-Fārābī's discussion of future contingency, a subject's having (in)definite knowledge of a proposition is taken to be equivalent to the (in)definiteness of the proposition to the subject.

Obviously, if P is not yet either true or false, neither (a*) nor (b*) can be satisfied. Therefore, if P is indefinite in itself, it will be indefinite to us as well. But even if P is settled as either true or false, we might still not know its truth-value. It might still be neither true nor false *to us*. In such a case, (b) is satisfied and P is indefinite to us. So, a definite proposition can be indefinite to us. Note that the indefiniteness of a proposition to us does not entail that its truth-value is in principle unknowable. Al-Fārābī seems to believe that, for every proposition P expressing a state of affairs S, P is in principle unknowable only if the existence of S is itself unsettled and therefore indefinite. This point is clearly highlighted in his description of the meaning of *indefiniteness* that appears immediately after T5:

30 Al-Fārābī uses 'definite' and 'indefinite' as adjectives not only for the truth-values of propositions but also for many other things like the distribution of truth-values between a pair of contradictory propositions, propositions themselves, the state of affairs expressed by propositions, knowledge of propositions, existents, and even existence itself. Fortunately, the contexts of his discussions clarify how these different uses are linked to one another.

31 Knowledge of the indefiniteness of P implies indefinite knowledge of P, but the other way around does not hold. I do not know the truth-value of some future necessary propositions, but this does not imply that I know that they are neither true nor false.

T6. But that they distribute truth and falsity indefinitely are in their existence like their status to us in terms of indefiniteness. To us, the predicate (*al-maḥmūl*) [of a proposition with an indefinite truth-value] is indefinitely true [of its subject]. Thus, we have to consider the unknown opposites [to see] whether or not their status in themselves in terms of indefiniteness is like their status in terms of indefiniteness to us.³²

If a proposition has an indefinite truth-value, then it is indefinite both in existence and to us. If P is indefinite, then the existence of S would be indefinite as well. S may or may not be instantiated. Neither disjunct is now settled and there is no ground for definite knowledge at all. This makes P indefinite to us. This understanding of indefiniteness again fits (A), rather than (B). Suppose that P is a true proposition that is indefinite in the sense of (B). This means that P is true but not in a necessary way. The mere fact that P is true in a way which excludes falsity suffices to establish that its truth is in principle knowable.³³ One way to justify this claim goes as follows: If P is *now* true, something which grounds the truth of that proposition must *now* exist. Everything that now exists is in principle knowable. Therefore, the ground of the present truth of P is in principle knowable. Moreover, knowledge of the truth of a proposition seems to be drawable from knowledge of the ground of its truth. Therefore, the truth of P must be in principle knowable.³⁴ This means that the indefiniteness of a proposition in the sense of (B) does not necessarily imply its indefiniteness to us, and hence that the notion of *indefiniteness* described in T6 should not be understood in the sense of (B).

The last sentence of T6 invites us to examine the status of the contradictory pairs of propositions that are unknown to us (in the sense that we do not know which disjuncts are true and which are false) to see whether their being unknown is due to the indefiniteness of these propositions (or the states of affairs that they express) in themselves, or due to some external reason (e.g., our cognitive limitations). This is perhaps meant to remind us that we cannot validly conclude the indefiniteness of the truth-value of a proposition from the

32 Al-Fārābī, *Sharḥ al-ʿIbāra*, 81, ll. 16–19. Zimmerman (*Alfarabi's Commentary*, 75, n. 2) has suggested that '*al-maḥmūl*' should have been transcribed as '*al-majhūl*'. However, such a change does not seem to be necessary.

33 The claim that every truth is knowable does not imply that every truth is knowable to us. Nevertheless, the assumption that every truth is knowable raises concerns like Fitch's Paradox of Knowability, according to which if every truth is knowable, then every truth is actually known. But such concerns fall beyond the scope of this paper.

34 I have developed this line of argument in Mohammad Saleh Zarepour, "Sunday School Student and Theological Fatalism," *Sophia* 52, no. 3 (2013): 533–535.

mere fact that we do not know it. All the past and present propositions have definite truth-values even though we do not know many of them. Thus, we must find another reason for the indefiniteness of FCPs. Al-Fārābī suggests that our discussion of the status of FCPs must begin by considering all the different statuses one may attribute to them:

T7. To begin our investigation [of the status of the pair of an FCP and its negation], we say that either they distribute truth and falsity definitely, or they are both true, or they are both false, or they distribute it [i.e., truth or falsity] indefinitely.³⁵

Here definiteness and indefiniteness are considered properties of the distribution of truth-values between the two propositions in question. Apparently, al-Fārābī takes the distribution to be definite if and only if both propositions have definite truth-values, and to be indefinite if and only if both have indefinite truth-values. This is perhaps because he thinks that the status of the truth-value of a proposition in terms of (in)definiteness is the same as that of its negation. Understood as such, the four options that al-Fārābī considers for the pair of propositions are as follows: (1) one of them is definitely true and the other is definitely false, (2) both of them are true, (3) both of them are false, and (4) one of them is indefinitely true and the other is indefinitely false. Al-Fārābī seems to assume that these four options exhaust all the different ways for distributing truth-values between an FCP and its negation. Ruling out the first three options due to their absurd consequences, he allegedly establishes the last option. Al-Fārābī assumes that this is exactly the strategy that Aristotle pursued.³⁶

It is worth noting that al-Fārābī has not distinguished the case in which both propositions are definitely true from the case in which they are both indefinitely true. Nor has he considered the distinction between a pair in which both propositions are definitely false and a pair in which both propositions are indefinitely false. The best explanation for this observation seems to be that he understood (in)definiteness in the sense of (A). Recall that, according to (A), to be indefinitely false, to be indefinitely true, and to be neither true nor false are all one and the same thing. Moreover, (A) renders definite truth as truth *simpliciter* and definite falsity as falsity *simpliciter*. Thus, if we cash out the notion of (in)definiteness in the sense of (A), then T7 is simply stating that in a pair of

35 Al-Fārābī, *Sharḥ al-'Ibāra*, 85, ll. 3–4.

36 Al-Fārābī, *Sharḥ al-'Ibāra*, 89, ll. 18–19.

contradictory FCPs, one of the following options must be realized: (1) one of them is true and the other false, and it is now settled which one is which, (2) both of them are true, (3) both of them are false, or (4) although one of them will be true and the other false, it is not yet settled which one is which. These options exhaust all the ways for truth-value distribution between an FCP and its negation. So, (4) can be established by rejecting (1)–(3).

In al-Fārābī's discussion of Aristotle's view, (2) and (3) are rejected by appealing to, respectively, PNC and PEM.³⁷ I do not touch on the details of al-Fārābī's arguments for the absurdity of (2) and (3). Instead, I focus on the argument for the absurdity of (1), whose details reveal significant insights regarding the main concerns of this section. In particular, the details of this argument can support the idea that, within the context of al-Fārābī's discussion of Aristotle's view, the notion of (*in*)definiteness should be read in the sense of (A) rather than (B). Al-Fārābī argues that if a proposition is definitely true, then the state of affairs expressed by the proposition (or, more precisely, the existence or occurrence of this state of affairs) must be definite as well. Moreover, he contends that a definite state of affairs cannot be contingent. It must occur of necessity. But we know that there are future contingencies. Therefore, the truth of propositions that express these contingencies cannot be definite. Thus, option (1) is rejected as well, and (4) will be established. FCPs must have indefinite truth-values. This argument involves several remarkable ideas that must be spelt out.

The first idea is the homogeneity or mutual conformity of truth and existence in terms of their (*in*)definiteness. Al-Fārābī seems to conclude this thesis from the fact that, by definition and necessarily, the truth of a proposition is logically equivalent to the existence (or occurrence) of the state of affairs it expresses. Commenting on *De Interpretatione* 9, 18a34–35, al-Fārābī argues:

T8. The truth of a statement implies the existence of the state of affairs (*al-amr*) [described by the statement] and the falsity of the statement implies the non-existence of the state of affairs. The other way around [also holds]: The existence of the state of affairs implies the truth of the statement of the one who has stated that it [i.e., the state of affairs in question] exists. And the non-existence [of the state of affairs] necessarily implies the falsity of the statement of the one who has stated that it [i.e., the state of affairs in question] exists. Furthermore, if the truth is definite, the existence implied by it would be definite. And if it [i.e., the truth] is

37 Aristotle denies that an FCP and its negation can share the same truth-value in *De Interpretatione* 9, 18b16–23. Al-Fārābī analyses his arguments for this view in *Sharḥ al-'Ibāra*, from 87, l. 27 to 89, l. 9.

indefinite, the existence of the state of affairs would be indefinite. The same is the case for falsity.³⁸

Al-Fārābī has emphasized the same claim regarding the conformity of truth and existence in terms of (in)definiteness in other passages.³⁹ This idea implies that the definite truth of a future proposition is tantamount to the definite existence of the future state of affairs expressed by that proposition. In the next step, al-Fārābī contends that the definiteness of the existence of a state of affairs implies that it cannot be contingent. Borrowing Aristotle's phrase, one can say that a future proposition whose truth is definite cannot express a state of affairs whose existence is *by chance* or *coincidence*.⁴⁰ Al-Fārābī puts this as follows:

T9. If it is necessary that the truth of the affirmative [proposition] from a pair of opposites about future states of affairs is a definite truth and the falsity of the false one of them is a definite falsity—[and this is the case] regarding all future states of affairs—then there is no thing, of what will be in the future or of what exists now without having existed before, whose existence is by coincidence (*bi-l-ittifāq*) ... Nor is anything going to be non-existent (*ghayr mawjūd*) by coincidence. Rather all the future states of affairs are necessary and occur inevitably. His [i.e., Aristotle's] phrase, 'by coincidence', means that it [i.e., the thing which occurs by coincidence] does not have an essentially definite cause in itself (*min dhātihī sabab muḥaṣṣal bi-dh-dhāt*) ... Existence is not more likely than non-existence for the nature of a contingent thing in itself. Whenever something [contingent] exists, it exists due to an indefinite and accidental cause (*sabab bi-l-ʿaraḍ*).⁴¹

The passage states that if every future proposition has a definite truth-value, then nothing in the future will be by chance and coincidence. According to al-Fārābī's understanding of the Aristotelian notion of *coincidence*, the existence of something is not by coincidence if and only if it essentially has a definite cause. This means that the existence of such a thing does not depend on a cause that may or may not be realized—i.e., an indefinite cause. By con-

38 Al-Fārābī, *Sharḥ al-ʿIbāra*, 85, ll. 12–16.

39 For example, he highlights the idea of the conformity of truth and existence in his discussion of *De Interpretatione* 9, 18a33 and 19a32–b4. See, in particular, al-Fārābī, *Sharḥ al-ʿIbāra*, 82, ll. 22–25, and 97, ll. 7–9.

40 *De Interpretatione* 9, 18a39–b5.

41 Al-Fārābī, *Sharḥ al-ʿIbāra*, 86, ll. 16–28.

trast, something exists by coincidence if and only if its existence depends on an indefinite cause whose existence is not yet settled. The intrinsic nature or essence of a necessary thing makes it exist. That is perhaps why al-Fārābī says that such a thing has an intrinsic cause (or, more precisely, that the cause of such a thing is itself). Quite differently, there is nothing in the intrinsic nature of a contingent thing that can make it exist. The existence of such a thing is by coincidence because its nature is neutral with respect to existence and non-existence. Therefore, its existence must be caused by something extrinsic and accidental to the essence of that thing.

One might think that the last sentence of T₉ is in tension with (A). According to that sentence, a contingent existent exists due to an indefinite cause. Now if we understand the (in)definiteness of causes in the same spirit as the (in)definiteness of truth-values in the sense of (A), then we should take an indefinite cause as something whose existence is not yet settled. It is not yet determined whether or not it comes into existence. One might therefore complain that, understood as such, an indefinite cause cannot ground the existence of anything. This is because such a cause itself does not yet exist. And a non-existent cannot ground the existence of something else. But if the indefinite cause is interpreted in the spirit of (B), then it would be an existing cause that is not necessary. So, by endorsing (B), we can avoid facing the aforementioned objection. This should encourage us to reject (A) in favor of (B), one might conclude. However, I do not find this maneuver tenable. What al-Fārābī wants to convey is that *if* some future existent, say X, whose existence is *now* contingent comes into existence at some time, its existence is due to a cause, say Y, whose existence is not *yet* settled. This is because if it were *now* settled that Y would definitely exist, then the existence of X would *now* itself have been settled. Thus, the existence of X could not *now* be contingent and by coincidence. This reading is perfectly compatible with (A).

T₉ states that for Aristotle, the necessary and unavoidable existence of a definite existence depends on a cause that is definite, essential, and intrinsic to the nature of that thing; and the contingent and coincidental existence of an indefinite existence depends on a cause that is indefinite, accidental, and extrinsic to the nature of that thing. Thus, the existence of both types of existents is caused. Now, if we take causation as a necessary relation between cause and effect, both types of existents have sorts of necessary existence. The existence of an existing thing is necessitated either by its intrinsic essence or by its accidental cause. T₉ is, therefore, putting forward a distinction between two types of necessity. Inspired by al-Fārābī's own phrases, one type of necessity can be referred to as 'essential necessity', 'intrinsic necessity', 'necessity in itself', or 'necessity in its essence' and the other type as 'accidental necessity' or 'extrinsic

necessity'. An existent is essentially necessary if and only if its cause is intrinsic to its essence. Alternatively, an existent is accidentally necessary if and only if its cause is extrinsic to it.

The distinction between *essential* and *accidental* necessity—which is implicitly made in T9—is closely related to the Aristotelian distinction between *absolute* and *conditional* necessity. Commenting on lines 19a18–27 of *De Interpretatione* 9, where Aristotle distinguishes the conditional sense of necessity from its absolute sense, al-Fārābī says:

T10. He [i.e., Aristotle] says that the existence of a thing, while it exists, is necessary. And the non-existence of the thing, while it does not exist, is necessary non-existence. He then says: 'It is not the case for every existent that its existence is necessary' in an absolute sense (*'ala al-iṭlāq*). Rather it is with some condition (*bi-sharīṭa*). 'Nor is it the case for every non-existent that its non-existence is necessary' in an absolute sense. Rather, it is with some condition. He then mentions what that condition is. So, he says: 'For in saying that the existence of every existent is necessary when it exists, we do not assert that its existence is necessary in an absolute sense. This is also the case regarding what does not exist.' He has divided necessary existence into two types, of which one is necessary so long as (*mā dāma*) it exists, and the other is necessary in an absolute sense.⁴²

The existence of every existing thing is necessary so long as it exists. Similarly, the non-existence of every non-existing thing is necessary so long as it does not exist. But such a necessity is qualified and conditional. On the condition that X exists, its existence would be necessary. But this on its own does not show

42 Al-Fārābī, *Sharḥ al-'Ibāra*, 95, ll. 13–19. The phrases in quotation marks are quoted from the Arabic translation of 19a18–27 that al-Fārābī has mentioned earlier in *Sharḥ al-'Ibāra*, 94. Al-Fārābī also investigates a sub-division (made by the commentators of Aristotle) of the conditional necessity of a predicate for its subject: a predicate is necessary for its subject either (a) as long as its subject exists or (b) as long as the predicate exists. See al-Fārābī, *Sharḥ al-'Ibāra*, 95, ll. 20–22, and *Al-'Ibāra*, 113, ll. 11–18. I do not go into the details of this latter distinction because it does not seem to have any bearing on the concerns of this chapter. Nevertheless, it is worth noting that this division was probably a source of inspiration for Avicenna's distinction between essential/substantial (*dhātī*) and descriptive (*wasfī*) readings of modal propositions. The Avicennian distinction is analyzed in Tony Street, "An Outline of Avicenna's Syllogistic," *Archiv für Geschichte der Philosophie* 84, no. 2 (2002): 129–160 and Shahid Rahman and Mohammad Saleh Zarepour, "On Descriptive Propositions in Ibn Sīnā: Elements for a Logical Analysis," in *Mathematics, Logic, and their Philosophies*, ed. Mojtaba Mojtahedi, Shahid Rahman, and Mohammad Saleh Zarepour (Dordrecht: Springer, 2021), 411–431.

whether or not X exists. In particular, the conditional necessity of the existence of X does not guarantee its perpetual existence. But if the existence of something is absolutely necessary, it cannot fail to exist. Its existence does not depend on the satisfaction of any such condition. So, it always exists. Absolute necessity implies perpetual existence. The above passage does not establish whether the other way around holds as well. It does not say that perpetual existence implies absolute necessity. It does not exclude that the existence of something that always exists could still be dependent on something else, possessing only a conditional sense of necessity. Nevertheless, according to the standard reading of Aristotle's theory of modality, the absolute necessity of the existence of X is logically equivalent to its perpetual existence (i.e., its existence at all moments of time). Accordingly, the conditional necessity of the existence of X is logically equivalent to its temporary existence (i.e., its existence at some but not all moments of time).

If we endorse the standard construal of Aristotle's distinction between absolute and conditional necessity, then this distinction has a significant conceptual difference with the Fārābian distinction between essential and accidental necessity. According to the standard construal, the core idea behind the Aristotelian distinction is whether or not the necessity of the thing in question is temporary. Quite differently, the Fārābian distinction is mainly concerned with whether or not the necessity of that thing is causally dependent on *other* things.⁴³ On the standard interpretation of Aristotle's view, everything that always exists (or, to give it a more Aristotelian flavor, everything with eternal existence, e.g., the whole universe) is necessary in the absolute sense, without any condition or qualification. Confirming the standard interpretation, al-Fārābī concedes that, for Aristotle, absolute necessity is tantamount to perpetual existence. But al-Fārābī also seems to think that, for Aristotle, absolute necessity (in its standard temporal interpretation) is the same thing as essential necessity.⁴⁴ In other words, according to al-Fārābī's Aristotle, absolute necessity

43 This is exactly what makes the Fārābian distinction between essential and accidental necessity a source of inspiration for the Avicennian distinction between necessity in itself (*bi-dh-dhāt*) and necessity through another (*bi-l-ghayr*). On Avicenna's debt to al-Fārābī for the idea of the latter distinction, see Robert Wisnovsky, *Avicenna's Metaphysics in Context* (New York: Cornell University Press, 2003), ch. 12.

44 See al-Fārābī, *Al-'Ibāra*, 113, ll. 11–22, where he distinguishes three homonymous uses of 'necessary,' the first of which corresponds to absolute necessity and the others to two forms of conditional necessity. To describe the first meaning of necessity, he attributes it to anything whose existence is perpetual so that it has never failed to exist nor ever will. Al-Fārābī then states that this meaning of necessity captures the real meaning of 'inevitability' or 'unavoidability' (*'iḍṭirār*). Immediately after this, al-Fārābī discusses homonymous uses of

is the most fundamental/substantial necessity, which contradicts contingency and occurrence by coincidence. And this is exactly what al-Fārābī finds controversial.

As we will see in the next section, in developing his own solution to LD and TD, al-Fārābī argues that neither the definite truth-value of future propositions nor God's definite knowledge of them can render these propositions necessary in themselves. Put differently, he believes that even if definiteness somehow implies absolute necessity, it does not imply essential necessity. And this is because although absolute necessity follows from essential necessity, the other way around does not hold.

Returning to T₉, it seems that this passage is intended to explain the Aristotelian idea that the definiteness of future propositions implies their essential necessity, which contradicts the openness of the future. Since the openness of the future is self-evident and indisputable, at least some future propositions must have indefinite truth-values. Equivalently, the distribution of truth and falsity between at least some pairs of contradictory future propositions (i.e., FCPS) must be indefinite. This argument is presented in *Al-'Ibāra* as follows:

T₁₁. [Regarding the propositions expressing] the future contingent states of affairs, such as our statements that 'Zayd will go to the market tomorrow' and 'Zayd will not go to the market tomorrow': They are two contradictories that distribute truth and falsity, though indefinitely in themselves. Thus, it is not possible (*lā yumkinu*) that truth is definitely attained (*muḥaṣṣal*) in one of them that is referred to (*mushār ilayhi*) and falsity in the other that is referred to in such a way that it is not possible (*lā yumkinu*) for the true one of them to be true and for the false one of them to be true. They are indefinite both in themselves and to us.⁴⁵

In this abstruse passage, the phrase 'referred to' is used to clarify that the distribution of truth and falsity between two contradictories is definite only when it is *specified* which of the two propositions is true and which one is false. In other words, this phrase is used to emphasise that the mere *vague* fact that one of

'absolute' ('*muṭlaq*') and 'possible' ('*mumkin*'). We should be careful not to confuse '*muṭlaq*' with '*darūri 'alā l-ittlāq*'. By contrast with a proposition that is '*darūri 'alā l-ittlāq*', a '*muṭlaq*' proposition is supposed to be free from modalities.

45 Al-Fārābī, *Al-'Ibāra*, 110, ll. 17–22. Taking '*mushār ilayhi*' as the translation of Aristotle's 'τόδε τι', the sentence before the last could be translated into something like 'Thus, it is not possible that truth is definitely attained in one concrete instance and falsity in the other in such a way that ...'. I am grateful to Peter Adamson for drawing my attention to this issue.

the two propositions is true and the other is false, without any specification of which one is which, cannot make the distribution of the truth-values definite. The distribution is definite only when truth is attained in a particular one of the two contradictories and falsity in the other. The truth-value of each proposition must be specified in itself (regardless of whether or not we are aware of it). Otherwise, the distribution remains indefinite.

Some scholars have mentioned that T₁₁, on its own and isolated from other passages, implies that (in)definiteness must be understood in the sense of (B). This is because it states that when a proposition has a definite truth-value, it is (or would have been) impossible for it to have the other truth-value. For example, referring to (Zimmerman's translation of) T₁₁, Richard Gaskin contends that al-Fārābī's use of the word 'impossible' (which corresponds to the phrase 'not possible' in my translation) is *unfortunate* because the claim that the truth-values are not distributed between a couple of contradictory FCPS 'in such a way that they *cannot* be distributed contrariwise is a weaker claim than al-Fārābī is entitled to make, and putting the point in that way is likely to give an encouragement to supporters of R [= (B) in Adamson's presentation] (according to which 'definitely' means 'necessarily' and 'indefinitely' means 'non-necessarily').⁴⁶ Gaskin then tries to reject (B) by appealing to al-Fārābī's claim, which appeared in *Al-'Ibāra* shortly after T₁₁, that a pair of contradictory FCPS can never be known and definite to us in the sense that a specific one of them is true rather than the other.⁴⁷ Adamson agrees with Gaskin that, in the context of al-Fārābī's discussion of Aristotle's view, (in)definiteness must be understood in the sense of (A). However, Adamson believes—correctly in my opinion—that the mere unknowability of FCPS to us is an epistemological fact that cannot settle a semantical (or ontological) issue regarding the truth-values of FCPS (or the occurrence of the states of affairs expressed by them). Thus, to come to a reliable view regarding the plausibility of (A) or (B), we have to appeal to other passages, particularly from *Sharḥ al-'Ibāra*.⁴⁸

It seems to me that T₁₁ can justifiably be read not as defining or describing the meaning of (in)definiteness, but rather as presenting al-Fārābī's interpretation of Aristotle's view in *De Interpretatione* 9—which is the claim that definiteness of the truth-values of FCPS implies the necessity of their truth-values and the necessity of the states of affairs expressed by them. There is a difference between the claim that 'the definite truth *is* the necessary truth' and the claim

46 Gaskin, *The Sea Battle*, 330.

47 Al-Fārābī, *Al-'Ibāra*, 111, ll. 5–7.

48 Adamson, "The Arabic Sea Battle," 175, n. 30.

that ‘the definite truth *implies* (perhaps when conjoined with other assumptions) the necessary truth’. It seems to me that, in T11, al-Fārābī is not defining the notion of *definiteness* by mentioning the former claim. Rather, he is trying to describe his understanding of Aristotle’s view, according to which definiteness implies necessity and, consequently, determinism. We will see in the next section that al-Fārābī finds this view objectionable. But he does not address this issue in *Al-‘Ibāra*, from which T11 is quoted. And this is not surprising, because *Al-‘Ibāra* was supposed to include only an abridgement of *De Interpretatione*. In *Al-‘Ibāra*, al-Fārābī presents Aristotle’s views in his own wording but does not critically engage with them, even when he does not find them defensible. For all this, I do not think that T11 can easily be interpreted in favor of (B). Overall, there appears to be no evidence contradicting the claim that, within his examination of Aristotle’s view, al-Fārābī consistently employs the concept of (*in*)definiteness in accordance with (A).

The last thing that should be addressed before closing this section is the relationship between knowability and definiteness. As I mentioned above, Adamson is right that the unknowability of a proposition to us does not entail that it has no truth-value. However, it is frequently echoed, in both *Al-‘Ibāra* and *Sharḥ al-‘Ibāra*, that the unknowability of FCPs to us is not due to some deficiencies in us.⁴⁹ Rather, it is the nature of FCPs which makes them unknowable. FCPs express states of affairs whose occurrence or non-occurrence is not yet settled. Such states of affairs, al-Fārābī believes, have an incomplete existence. So, there is nothing to be known. There is no settled object of knowledge. Commenting on lines 19a32–b4 of *De Interpretatione* 9, al-Fārābī argues that FCPs have indefinite truth-values due to their intrinsic nature and this makes them absolutely unknowable:

T12. Regarding the contingent [propositions], the truth of one of the two contradictories is indefinite to us and in themselves. Therefore, the contingent [propositions], exactly because they are contingent, are unknown due to their nature. It is impossible for them, due to their nature, to be known to us. Our ignorance of them is not due to the incapability of our nature but due to their incomplete existence.⁵⁰

I showed earlier that al-Fārābī considered some sort of conformity between truth and existence according to which, for every proposition P expressing a

49 I emphasized this point earlier in my discussion of T5 and T6.

50 Al-Fārābī, *Sharḥ al-‘Ibāra*, 97, ll. 19–22. See also *Al-‘Ibāra*, 111, ll. 8–17.

state of affairs S, (a) the truth of P is logically equivalent to the existence of S, and (b) the status of the truth-values of P in terms of (in)definiteness is the same as that of the existence of S. Putting passages like T6 and T12 together, we can now see that he also links the statuses of the truth-value of P and the existence of S to the status of their knowability.⁵¹ More clearly, he thinks that if P is indefinite, then it would be inherently unknowable. It cannot be known that P; nor can it be known that not-P. If P is indefinite, S's existence is unsettled and incomplete. Therefore, there is nothing to be known. Of course, the proposition that 'P is now indefinite' can itself be a definite proposition. So, that 'P is now indefinite' might in principle be knowable. But this does not make P knowable. The knowledge of the indefiniteness of P just affirms the unknowability of P. Note that although the indefiniteness of P makes it unknowable, the mere fact that P is unknown to some agents (e.g., human beings) does not establish the indefiniteness of P. A definite proposition could in principle be unknown to us due to our cognitive limitations. Having said that, I think al-Fārābī would be sympathetic to the idea that if a proposition is inherently unknowable to every *possible* agent (no matter how strong the cognitive powers of this agent could be), then it must be an indefinite proposition. Nevertheless, he has not defended this claim explicitly.

The crucial thing for our purposes is that, from the outset (as we saw in T5 and T6), al-Fārābī's discussion of *indefiniteness* is interwoven with the issue of (un)knowability. It is repeatedly emphasised that if a proposition is in itself (intrinsically or inherently) indefinite, it would be inherently unknowable. No one can know it because there is no settled thing that can be the object of the knowledge. At first glance, it is not really clear why al-Fārābī highlights such a connection. Aristotle himself did not address the notion of (in)definiteness at all, let alone examine its connection to knowability. Nevertheless, it is crystal clear that it was the investigation of this connection that led al-Fārābī to address TD, which was not touched on by Aristotle at all. God is usually assumed to be aware of everything. God knows everything. Therefore, one could say, everything is knowable to God. If so, nothing is inherently unknowable. Coupling this with the thesis that indefiniteness implies inherent unknowability, one can conclude that there is no indefinite thing. Everything, including every future state of affairs, is definite. On the other hand, the existence of future contingencies is self-evident and uncontroverted. Therefore, there remains no option but to cut off the link between definiteness and (essen-

51 For the purposes of this chapter, it does not matter whether the object of knowledge is a proposition or a state of affairs that is (or can be) expressed by a proposition.

tial) necessity. So, the general structure of Al-Fārābī's discussion of Aristotle's theory can be seen as follows: Al-Fārābī first describes the conclusion of Aristotle's discussion as the idea that 'the definiteness of the future implies its necessity and closedness'. Al-Fārābī then objects to this conclusion by appealing to the doctrine of divine foreknowledge. But what makes TD useful to his critical purposes is the connection he has earlier identified between definiteness and knowability. Al-Fārābī has astutely defined (*in*)*definiteness* in connection to knowability at the beginning of his discussion to pave the way for a more convincing presentation of his final objection to Aristotle's account, or so it seems to me.

4 Al-Fārābī's Own Solutions to TD and LD

Al-Fārābī criticizes Aristotle's view that FCPs are indefinite in themselves by arguing that this view contradicts the doctrine of divine foreknowledge, whose denial is harmful and detrimental to people. More precisely, al-Fārābī shows that if Aristotle's argument from LD for the indefiniteness of the truth-values of FCPs is sound, the parallel argument from TD for the indefiniteness of God's knowledge of such propositions must be sound as well. But the latter argument must be rejected because it implies the openness of the future to God and contradicts the doctrine of divine foreknowledge. As a result, the argument from LD must be rejected as well:

T13. If the issue is like that [i.e., what Aristotle has said], a questioner might ask about the knowledge of God Almighty to one of the two opposites regarding the contingent states of affairs: Does it [i.e., God's knowledge] include it [i.e., the proposition in question]? If it does, how is the status of the truth of one of the two opposites to Him (may He be exalted)? Is its truth to Him definite because of His knowledge of it or not? If it is not definite to Him, then it would be indefinite to Him as to us. Therefore, God Most High does not know which of the two opposites regarding the future states of affairs will occur, the affirmative or the negative one. Thus, they [i.e., FCPs] would be unknown to God Most High. Therefore, God Most High would not be aware of things before they come to be. This is repugnant (*dhālika shanī'*) and unacceptable (*ghayr maqbūl*). All religions take it differently; and it seems to be very harmful (*dārr*) to people to believe that. But if the issue is like that [i.e., what is accepted by religions] and God Most High definitely knows the truth of one of the two opposites, then the indefiniteness in it [i.e., the proposition

in question] is not due to the very nature of the state of affairs [expressed by that proposition]. Therefore, the cause of our ignorance of them [i.e., FCPS and/or the states expressed by them] is not the nature of the state[s] of affairs, rather it is a deficiency in our nature. If the issue is like that, then the truth of one of the two opposites is definite in its essence, even if we do not know it. It then would be like the indefiniteness of an unknown necessary [proposition] to us.

If we accept this, then the doubt raised by Aristotle returns; namely, if something is truly known to be [the case], it cannot not be [the case]. Thus, the existence of what exists in the future will be necessary if the statement about it, which precedes it, is true. Therefore, all things will turn out to be necessary in themselves. Things will be possible only with respect to our knowledge.⁵²

Discussing the first paragraph of this passage, Adamson writes that '[i]n contrast with the original sea battle problem as al-Fārābī understands it, the problem of divine foreknowledge is here set out as a genuine dilemma. The argument would force us to choose between determinism and the belief in divine foreknowledge, in a way that al-Fārābī believes we were *not* forced in *De int* 9 to choose between determinism and the denial of PB.'⁵³ I have a different reading. In the first paragraph of T13, al-Fārābī aims to reject the Aristotelian view that FCPS have indefinite truth-values. It has nothing to do with determinism. Al-Fārābī there wants to say that FCPS cannot be indefinite because God knows them. Since God knows FCPS, they are not inherently unknowable. So, they are not indefinite in themselves. In the second paragraph of T13, al-Fārābī anticipates an objection to the argument presented in the first paragraph by highlighting the apparent connection between the definiteness of FCPS and determinism. Put differently, he is saying that God's comprehensive knowledge of the future provides us with a reason to conclude that Aristotle's view regarding the indefiniteness of FCPS is wrong, but we can safely embrace this conclusion only when we can show that the definiteness of them does not really imply determinism.

Moreover, I do not think that reading the first paragraph as presenting a dilemma is tenable. Recall that one of al-Fārābī's reasons for why Aristotle's discussion should not be seen as a dilemma was that the dilemmatic reading of Aristotle's discussion is indeed accusing him of making a bold methodological mistake by investigating a metaphysical issue (i.e., whether or not determin-

⁵² Al-Fārābī, *Sharḥ al-Ibāra*, from 97, l. 27 to 98, l. 14.

⁵³ Adamson, "The Arabic Sea Battle," 180–181.

ism is true) in a logical treatise. In a parallel way, we can say that the dilemmatic reading of the first paragraph of T13 is tantamount to accusing al-Fārābī of making a similar methodological mistake, i.e., investigating the plausibility of the doctrine of God's foreknowledge in a logical treatise. But it seems to me that al-Fārābī has carefully avoided this mistake. He simply assumes that God foreknows the future and concludes that future propositions are definite. It is true that he seems to be less sure of the truth of the doctrine of God's foreknowledge than of the falsity of determinism. Unlike the falsity of determinism, the truth of the doctrine of divine foreknowledge is not self-evident. We should endorse this doctrine just because its denial is repugnant and harmful for people to believe.⁵⁴ Nevertheless, al-Fārābī does not suggest that we should choose between this doctrine and the idea of the definiteness of future propositions. Nor does he engage in any investigation regarding the truth of this doctrine. He simply presupposes the truth of this doctrine and draws the definiteness of the future propositions from it. Thus, the structure of his discussion should not be interpreted as dilemmatic, even though it appears so.

As I said, in the second paragraph of T13, al-Fārābī has anticipated an objection to the soundness of the argument from divine foreknowledge to the definiteness of FCPS: This argument is not defensible unless we can show that definiteness does not imply determinism. But before addressing this concern, he examines an attempt to reconcile God's foreknowledge with the indefiniteness of FCPS:

T14. Some people have responded to that [problem] that God (may He be exalted) knows every existent in accordance with (*bi-ḥasab*) [the status of] its existence. He knows the necessary as necessary and the possible as possible. And he knows the necessary opposites in accordance with what they are at [i.e., their status in terms of (in)definiteness] and the possible opposites in accordance with what they are at [i.e., their status in terms of (in)definiteness]. But they do not add anything more to their answer.⁵⁵

Consider the proposition P, expressing a future contingent state of affairs S. Defenders of the view as explained in T14 believe that God knows P in a certain sense. God knows P as it is, with the status it has in terms of (in)definiteness.

54 See also al-Fārābī, *Sharḥ al-'Ibāra*, 98, ll. 14–19, where he argues that the denial of free will (due to determinism) is also a repugnant and harmful belief, as it implies that God punishes and rewards people for actions over which they have no control.

55 Al-Fārābī, *Sharḥ al-'Ibāra*, 98, ll. 21–24.

More precisely, God knows that P has an indefinite truth-value and that S has an indefinite existence. Accordingly, God knows that they are not necessary in themselves. But al-Fārābī does not find this answer compelling:

T15. The respondent has not added anything other than confessing that God Most High does not know a possible thing before its being [or occurrence].⁵⁶

Given the meaning of indefiniteness, if God knows that P is indefinite, God knows that P is neither true nor false and, consequently, that P is inherently unknowable. Thus, although God knows the status of P, God does not know P itself. God's knowledge of the indefiniteness of P implies God's indefinite knowledge of P. So, the aforementioned maneuver cannot save the compatibility of God's foreknowledge and the indefiniteness of FCPS. It merely reaffirms that God cannot know genuine FCPS—a conclusion that is presupposed to be unacceptable from the outset.

Al-Fārābī's presentation of TD and his discussion of the above attempt at saving the compatibility of the divine foreknowledge and the indefiniteness of FCPS indicate that he still uses the notion of (*in*)definiteness in the sense of (A). This is because God's foreknowledge is perfectly compatible with the indefiniteness of God's knowledge of the future in the sense of (B). If God's knowledge of P is indefinite in the sense of (B), it is possible for God to know P. The only restriction, in this case, is that God's knowledge of P cannot be necessary. Nevertheless, the mere knowability of P to God guarantees the possibility of God's foreknowledge. So, if one thinks that God's foreknowledge is incompatible with the indefiniteness of future propositions (as al-Fārābī does), one should have understood the notion of (*in*)definiteness in the sense of (A). Adamson believes that al-Fārābī has both senses of (*in*)definiteness, 'one applied in his interpretation of Aristotle, and another that he is forced into by the problem of divine foreknowledge.'⁵⁷ But the above discussion leaves no doubt that, even in his discussion of TD, al-Fārābī uses the notion of (*in*)definiteness in the sense of (A). He believes that all future propositions are definite because God foreknows everything. But, as he was well aware, this conclusion cannot be accepted unless we can prove that the definiteness of all the future propositions does not imply determinism. To achieve this goal, he writes:

⁵⁶ Al-Fārābī, *Sharḥ al-Ibāra*, 98, l. 28.

⁵⁷ Adamson, "The Arabic Sea Battle," 163.

T16. The correct answer to this [problem] is to say that the implication of something from something [else] is not necessity, i.e., that the implied thing is necessary in itself. The truth of the affirmative statement necessarily implies the existence of the state of affairs [expressed by that statement]. But this does not imply that the state of affairs is necessary in itself. Rather, its implication from the truth of the statement is a necessary implication. And it is not the case that when something necessarily implies something else, it [i.e., the former thing] is in itself necessary. This is like when, in syllogisms, something necessarily implies conclusions that are possible in their essences, while the conclusions that are necessarily implied are not necessary in themselves. Their possibility is not ruled out by the unavoidability of their implication from the premises.⁵⁸

Recall that, for al-Fārābī, determinism is true if and only if nothing occurs by coincidence. Equivalently, determinism is true if and only if everything is necessary in itself.⁵⁹ Now reconsider proposition P expressing the future contingent state of affairs S. Suppose that P is definitely true in the sense of (A). This simply means that P is true but does not say anything about whether or not P is necessary. According to the argument developed in T16, although the truth of P necessarily implies the occurrence of S, it does not imply the necessary occurrence of S. Stated differently, given the conformity between truth and existence, it is necessary that the truth of P implies the existence of S; but this does not show that S is necessary in itself. The existence of S is necessary only with respect (or in relation) to the truth of P. It is not necessary in itself. We cannot draw the essential necessity of S from the truth of P. In the same sense that the conclusion of a logical syllogism for a possible proposition is necessary with respect to its premises without losing its possibility in itself, the existence of S can be both possible in itself and necessary with respect to the truth of P. Thus, the necessity of S in itself does not follow from the truth of P. More generally, determinism does not follow from the definiteness of the truth-values of future propositions. A solution in the same spirit can be offered for TD:

T17. If God Most High foreknows that he [i.e., Zayd] will do that thing [i.e., to travel tomorrow], the knowledge of God Most High that he will do [that action] does not remove his power not to do [that action]. Rather it is necessarily implied that he will do what God foreknew that he would do and

⁵⁸ Al-Fārābī, *Sharḥ al-Ibāra*, 99, ll. 1–8.

⁵⁹ See T9 and the second paragraph of T13.

that Zayd will inevitably do it. But this necessity is in the implication of Zayd's action from the knowledge of God Most High, not in that Zayd's action together with that from which the action is implied is inevitable.⁶⁰

God's knowledge of P necessarily implies the occurrence of S. So, the occurrence of S is necessary with respect to God's knowledge of P. But this does not suffice to establish that the existence of S is necessary in itself. If God knows that Zayd will travel tomorrow, then it is inevitable that Zayd will travel tomorrow. There is a necessary connection between God's knowledge and the realization of its object. But this does not make Zayd's travel necessary in itself. Al-Fārābī believes that Zayd's power to refrain from travelling is still maintained, even though God knows that Zayd will travel. Moreover, since the power to refrain from travelling is maintained, Zayd's being free in traveling is maintained.⁶¹ Of course, if God knows that Zayd will travel tomorrow, he will inevitably travel tomorrow and never exercise his power not to travel. Nevertheless, this does not remove Zayd's free will, or so al-Fārābī thinks.

One might object that even if we accept that God's knowledge of P does not imply the essential necessity of P, it still implies the absolute necessity of P. When God knows P, it is true in all moments of time that P is the case. And this means that the truth of P is perpetual and, accordingly, has an absolute necessity. Moreover, the absolute necessity of P, the objector might insist, implies its essential necessity. But al-Fārābī casts doubt on the validity of this implication:

T18. This is something about which the philosophers of antiquity have different views. Some people believed that one should not say of what does not and will not fail to exist that it is possible for it not to exist. The same is true of what has never existed and will not exist in the future. It is not admissible that it is possible to say that such a thing can exist. But some people took it to be admissible. And one who took this to be admissible believes that if God definitely knows of one of the two opposites that it will be [the case], it will; but this does not eliminate its possibility even though its opposite is not [the case]. And this does not eliminate its

60 Al-Fārābī, *Sharḥ al-'Ibāra*, 100, ll. 10–13.

61 Apparently al-Fārābī endorses a libertarian conception of free will according to which having alternate possibilities is necessary for being free: An agent is free in doing action A only if the agent has also the possibility of not doing A (or has the power to refrain from doing A). See also al-Fārābī, *Sharḥ al-'Ibāra*, 99, ll. 9–17. In contemporary analytic philosophy, having alternate possibilities was studied as a condition in the first place for moral responsibility (not free will directly). See Harry G. Frankfurt, "Alternate Possibilities and Moral Responsibility," *The Journal of Philosophy* 66, no. 23 (1969): 829–839.

possibility even though its opposite is [the case]. Its non-existence is permanent and never removed while its possible existence is never removed either. This belief is more beneficial to religions than the belief of those who believe otherwise.⁶²

Al-Fārābī reports to us that there is no consensus among the philosophers of antiquity on whether or not absolute necessity implies essential necessity. He then clarifies that the solution he has proposed for TD could be defensible when we reject that necessity in itself follows from absolute necessity. On this account, the perpetual existence of X is compatible with the perpetual possibility of its non-existence. Of course, such a possibility might never be realized, but it prevents X from being necessary in itself. Al-Fārābī does not try to provide more justification for this view, perhaps because he does not want to be more strongly critical of his hero, Aristotle, or perhaps because his heart is not really content with his own solution.

5 Conclusion

Al-Fārābī uses the notion of (*in*)*definiteness* consistently in the sense of (A), both in his discussion of Aristotle's view and in developing his own solutions to TD and LD. He thinks that determinism is obviously false because it is self-evident to us that we are free in our future actions. Like Aristotle he thinks that determinism is true if and only if nothing occurs by coincidence. To explain what occurrence by coincidence means he implicitly makes a distinction between essential necessity (or intrinsic necessity or necessity in itself) and accidental necessity (or extrinsic necessity or necessity implied by something else). He thinks that, for Aristotle, this distinction would correspond to the distinction between absolute and conditional necessity. The latter distinction describes the modes of the existents whose existences are perpetual and temporary, respectively. Al-Fārābī takes the kernel of Aristotle's theory of future contingency to be that FCPs cannot be definite because their definiteness implies their absolute and essential necessity, from which determinism follows.

Al-Fārābī then criticizes Aristotle's view by appealing to the doctrine of divine foreknowledge. He thinks this doctrine can be accepted because its denial is repugnant and harmful for people to believe. This doctrine implies

62 Al-Fārābī, *Sharḥ al-'Ibāra*, 100, ll. 19–25.

that all future propositions including all FCPs must be definite. The indefiniteness of a proposition makes it inherently unknowable to all possible knowing agents. Even God cannot know an indefinite proposition. Therefore, if we accept the doctrine of divine foreknowledge, we should also accept that all future propositions are definite. Al-Fārābī believes that the definiteness of FCPs makes them absolutely necessary, but not essentially necessary (or necessary in themselves). This is because absolute necessity does not imply essential necessity. Something can always exist without being necessary in itself. Similarly, a perpetual non-existent can maintain the possibility of existence.

For al-Fārābī, the truth of the doctrine of divine foreknowledge is not as obvious as the falsity of determinism. He just insists that the rejection of God's foreknowledge is a harmful belief for people. Moreover, he does not provide a detailed and well-developed defence of the idea that absolute necessity does not imply essential necessity. Indeed, the tone of T18 leaves the impression that al-Fārābī does not eventually endorse his own solution to TD. Rather, he just clarifies the underlying assumptions of the solution without defending them in detail. Adamson suspects that these observations can be explained by the fact that 'he does not really believe that God knows truths about future contingents. Indeed, he probably does not believe that God knows truths about particulars at all, whether past, present or future, at least not *qua* particulars.'⁶³ However, it seems to me that we do not have enough evidence to justify this bold claim. It is more cautious to say that he could not make up his mind on this issue. He was able to see the tensions between two authorities that were highly influential on him, philosophy and religion (or, more specifically, Aristotle and Islam). But he failed to find his own way between these two poles of ideas. It was Avicenna who overcame such hesitations and explicitly contended that FCPs are neither true nor false and that God does not know particulars *qua* particulars. I intend to investigate Avicenna's theory of future contingency and its connection to al-Fārābī's theory in a future study. Will I achieve this goal? It is indefinite; if not in itself, at least to us.

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63 Adamson, "The Arabic Sea Battle," 186.

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References

- Adamson, Peter. "The Arabic Sea Battle: al-Fārābī on the Problem of Future Contingents." *Archiv für Geschichte der Philosophie* 88, no. 2 (2006): 163–188.
- Alfarabi. *Alfarabi's Commentary on Aristotle's Περὶ Ἑρμηνείας*. Ed. Wilhelm Kutsch and Stanley Marrow. Beyrouth: Imprimerie Catholique, 1966.
- Al-Fārābī. *Al-Mantiqīyyāt*. Ed. Muḥammad Taqī Dānishpazhūh. 2nd print. Qum: Maktaba Āyat Allāh al-Mar'ashī an-Najafī, 2012.
- Al-Fārābī. "Kitāb Bārī armīniyās ay *Al-'Ibāra*." Ed. and trans. (Turkish) by Mübahat Türker-Küyel. *Arastırma* 4 (1966): 1–85.
- Aristotle. *Mantiq Aristū*. Ed. 'Abd ar-Rahmān Badawī. Biyrūt: Dār al-qalam, 1980.
- Aristotle. *The Complete Works of Aristotle: The Revised Oxford Translation*. Ed. Jonathan Barnes. Princeton: Princeton University Press, 1984.
- Béziau, Jean-Yves. "Bivalence, Excluded Middle and Non Contradiction." In *The Logica Yearbook 2003*. Ed. Libor Běhounek. Prague: Academy of Sciences, 2004, 73–84.
- Frankfurt, Harry G. "Alternate Possibilities and Moral Responsibility." *The Journal of Philosophy* 66, no. 23 (1969): 829–839.
- Gaskin, Richard. *The Sea Battle and the Master Argument: Aristotle and Diodorus Cronus on the Metaphysics of the Future*. Berlin: Walter de Gruyter, 1995.
- Kogan, Barry S. "Some Reflections on the Problem of Future Contingency in Alfarabi, Avicenna, and Averroes." In *Divine Omniscience and Omnipotence in Medieval Philosophy: Islamic, Jewish and Christian Perspectives*. Ed. Tamar Rudavsky. Dordrecht: Springer, 1985, 95–101.
- Marmura, Michael E. "Divine Omniscience and Future Contingents in Alfarabi and

- Avicenna." In *Divine Omniscience and Omnipotence in Medieval Philosophy: Islamic, Jewish and Christian Perspectives*. Ed. Tamar Rudavsky. Dordrecht: Springer, 1985, 81–101.
- Rahman, Shahid and Mohammad Saleh Zarepour. "On Descriptive Propositions in Ibn Sinā: Elements for a Logical Analysis." In *Mathematics, Logic, and their Philosophies*. Ed. Mojtaba Mojtahedi, Shahid Rahman, and Mohammad Saleh Zarepour. Dordrecht: Springer, 2021, 411–431.
- Rescher, Nicholas. "An Interpretation of Aristotle's Doctrine of Future Contingency and Excluded Middle." In *Studies in the History of Arabic Logic*. Pittsburgh: University of Pittsburgh Press, 1963: 43–54.
- Street, Tony. "An Outline of Avicenna's Syllogistic." *Archiv für Geschichte der Philosophie* 84, no. 2 (2002): 129–160.
- Terkan, Fehrullah. "Does Zayd Have the Power *Not* to Travel Tomorrow? A Preliminary Analysis of al-Fārābī's Discussion on God's Knowledge of Future Human Acts." *The Muslim World* 94, no. 1 (2004): 45–64.
- Wisnovsky, Robert. *Avicenna's Metaphysics in Context*. New York: Cornell University Press, 2003.
- Zarepour, Mohammad Saleh. "Sunday School Student and Theological Fatalism." *Sophia* 52, no. 3 (2013): 533–535.
- Zimmermann, Frits W. *Al-Farabi's Commentary and Short Treatise on Aristotle's De Interpretatione*. Oxford: Oxford University Press, 1981.

‘Subtraction’ (*rafʿ*) as Method for Finding First Principles of Demonstrations and for Establishing or Destroying: From Aristotle to al-Fārābī

Cornelia Schoeck

1 Introduction

In Iamblichus's excerpts of Aristotle's *Protrepticus* we read:

[Text 1:] Things that are prior are always better known than things that are posterior [...] For knowledge (ἐπιστήμη) is more concerned with things that are defined and ordered than with their contraries, and more with causes than with effects [...] things that are prior are causes rather than things that are posterior, for if the former are taken away, the things that have their substance from them are taken away (ἐκείνων γὰρ ἀναιρουμένων ἀναίρεται τὰ τὴν οὐσίαν ἐξ ἐκείνων ἔχοντα)—lines if numbers, planes if lines, solids if planes, the so-called syllables if letters.¹

The method of “subtracting,” “taking away,” or “removing” (Arab. *rafʿ*; pass. *irtifāʿ*) is omni-present in Ibn Sīnā's logic, in particular in the *Topics* (*K. al-Jadal*), the *Isagoge* (*K. al-Madkhal*) and the *Demonstration* (*K. al-Burhān*) of his *Shifāʿ*, but also in the *Metaphysics* (*al-Ilāhiyyāt*) of his *Shifāʿ* where he explains the ontological aspect of this method. And in the *Canon of Medicine* (*al-Qānūn fī al-Ṭibb*) he applies this method. I intend to give an overview on how this method works in Aristotle up to al-Fārābī and to explain its philosophical and logical background and its function. I also refer to some influential passages in Alexander of Aphrodisias, Galen, Sextus Empiricus, Proclus, Philoponus, but I disregard influential testimonies from ancient medicine and from Philodemus.² The aim is to provide the background before we should study Ibn Sīnā's

1 *Aristotelis Opera*, vol. III, *Librorum Deperditorum Fragmenta*, ed. by Olof Gigon (Berlin, e.a.: De Gruyter, 1987), fr. 73, § 16 (p. 304); Engl. trans. Jonathan Barnes, *The Complete Works of Aristotle*, vol. II (Princeton: Princeton University Press, 1995), 2407 (modified).

2 For testimonies from Philodemus see David Sedley, “On Signs,” in *Science and Speculation*,

theory of ‘taking away’ and consequence (*luzūm*), including his semantic theory of the signification of linguistic expressions (*dalālat al-alfāz*).

I focus on the following aspects and theses:

§2: In the *Posterior Analytics* *aphaíresis* (ἀφαίρεσις/ Arab. *raf^c* or pass. *irtifā^c*) in its original meaning of “subtraction,” “taking away,” or “removal,” and ἀναιρεῖν (“to take away, to remove,” Lat. *tollere*),³ functions as an epistemological method for finding first, universal principles of demonstrations by finding the primary, immediate and sufficient cause on whose existence the existence of a posited thing depends.⁴ The reference to the sought cause is expressed by the qua-operator (ἤ/ Arab. *min ḥaythu*) referring to the aspect under which something is the ‘because of which’ (διὰ τῆ/ *limā, min ajli, li-ajli*), namely the proximate, sufficient cause of the existence of the thing which is the starting point of the inquiry. Inasmuch the qua-operator refers to a universal, partial aspect of the existence of a sensible compound particular, as in mathematics the reference to, e.g., a given figure *qua* being that kind of figure, it allows a universal conclusion regarding a universal represented by a particular.⁵ The subtraction method is a tool for regressive analysis with the goal of finding the cause from the caused by means of the recognition of the cause upon the investigation of the caused. A prominent application of this technique in practical sciences is Galen’s method of healing where ‘subtraction’ functions as analytical method for finding the causes of diseases out of the existence of symptoms and to take away the symptoms by taking away the causes of the diseases.

§3: The analytical subtraction method of the *Posterior Analytics* rests on Aristotle’s theory of following (ἀκολουθήσις, Arab. *luzūm*) going back to Aristotle’s *topoi* useful for “constructing, establishing” (κατασκευάζειν/ *an yuthbita*) or “destroying” (ἀνασκευάζειν/ *an yubtila*) an existence hypothesis by discovering the conditions and causes of the existence of the thing under examination. The background is the ‘construction’ (κατασκευή/ Arab. *amal*)⁶ in geometry which

ed. by Jonathan Barnes, Jacques Brunschwig, Miles Burnyeat, Malcolm Schofield (Cambridge: Cambridge University Press, 1982), 239–272.

3 Often in the form of passive participles taken as conditional followed by the consequent (when/if ... then), translated into Arabic by conditional clauses, e.g. ἀναρουμένων ἀναιρεῖται (in the quote from Iamblichus, above); *idhā rufī’a/* ἀφαιρεθέντος (text 3, below); *wa-ini rtafa’a minhu/* εἶναι ἀφαιρεθέντος (text 4, below); ἀναρουμένου ... συναναιρεῖται (text 14 below); ἀναρουμένου συναναιρεῖ (text 15, below), etc.

4 Cf. for the function of the method of *aphaíresis* for philosophy in general *Met.* XI.3, 1061a28–1061b5.

5 Cf. Proclus, *Procli Diadochi in primum Euclidis Elementorum librum commentarii*, ed. by Gottfried Friedlein (Leipzig: Teubner, 1873), 207,4–25.

6 The Arabic translation of κατασκευάζειν by *amila* and of κατασκευή by *amal* in geometry

proves the real existence of a geometrical figure by analysis and synthesis of the internal and external necessary and sufficient conditions for its construction.⁷ These *topoi* pave the way to the *Posterior Analytics*, insofar they are made independent of the goal of refuting an adversary's argument⁸ and become the proper method of the scientific research into 'whether' (εἰ/ *hal*) and 'because of what' (διότι/ *limā*) something exists. Destroying works by providing evidence of the non-existence of a necessary condition and cause for the existence of the hypothesized thing, whereby its existence is taken away (ἀναιρεῖται/ *irtafa'a*).⁹ Establishing is by proof of an implication by contraposition. It functions by providing evidence of the existence of the sufficient condition and cause for the existence of the hypothesized thing. The *topoi* work by regressive analysis from caused to cause in the same way as from the middle to the major term of

seems to indicate that κατασκευή has been understood as the product and work of ποίησις, that is the product of constructing, i.e. producing ('amila) a geometrical figure by the art (τέχνη/Arab. *ṣinā'a*) of geometry in contrast to generation by nature.

- 7 Cf. e.g. Proclus, op. cit. 203, 4 and 10 (and *passim*). On construction as demonstration of existence see Hieronymus G. Zeuthen, "Die geometrische Konstruktion als 'Existenzbeweis' in der antiken Geometrie," *Mathematische Annalen* 47 (1896): 222–228. Roshdi Rashed explains that the coincidence of construction and demonstration of existence in antiquity is due to the fact that the construction is accomplished by ruler and compass. When the number of mathematical problems which could not be solved by a construction by ruler and compass increased, construction and demonstration of existence had been separated in the way that the demonstration of existence follows the construction. Rashed exemplifies this separation of construction and demonstration of existence by the writings of Ibn al-Haytham. See Roshdi Rashed, "L'analyse et la synthèse selon Ibn al-Haytham," in *Mathématique et philosophie de l'antiquité à l'âge classique*, ed. by Roshdi Rashed (Paris: Éditions de centre nationale de la recherche scientifique, 1991), 131–162 (esp. 134).
- 8 Cf. Louis-André Dorion, "Aristotle's definition of elenchus in the light of Plato's *Sophist*," in *The Development of Dialectic from Plato to Aristotle*, ed. by Jakob L. Fink (Cambridge: Cambridge University Press, 2012), 264–265. Dorion argues that he "can see only one explanation, although I admit that it raises a problem: if Aristotle uses the words ἀνασκευάζειν and ἀναιρεῖν in preference to ἐλέγχειν, it is because these words are neutral on an ethical level. In other words, unlike ἐλέγχειν, they do not imply an ethical intention. Since the term ἐλέγχειν, by virtue of its original use and its tradition, implies the moral connotation of a test having as its goal a person's genuine nature, Aristotle abandons this verb in favor of the verbs ἀνασκευάζειν and ἀναιρεῖν" (265). However, in light of the *Posterior Analytics*, Aristotle's intention goes beyond this reason already in the *Topics*. Aristotle combines ἀνασκευάζειν (cf. Arab. *ibṭāl*) with κατασκευάζειν (cf. Arab. *ithbāt*), and the explanation is that his intention is scientific, not only dialectic. This is how Aristotle's commentators saw it. See e.g. in continuation of the commentary tradition al-Fārābī's clear statement for ἀνασκευάζειν (*ibṭāl*) and κατασκευάζειν (*ithbāt*) as scientific tools of demonstration, below § 5 (text 25).
- 9 Cf. *APo* I.26, 87a21 with *ini rtafa'a shay'un* for εἰ ἀναιρεῖσθαί τι in the Arabic translation of Abū Bishr Mattā b. Yūnus, and GlossGA s.v. ἀναιρέω for Abū 'Uthmān ad-Dimashqī's Arabic translations of derivatives of ἀναιρέω by the verb *irtafa'a*.

a first figure syllogism of a demonstration of the fact in the *Posterior Analytics*, providing the cause of the recognition of the conclusion and of the assent to it.

§ 4. *Categories* 12 and 13 complement the ways of destroying and establishing by a systematization of the conditions and causes of the existence of a thing according to the aspects of epistemological or ontological priority and posteriority of cause and caused (*Cat.* 12) or of concomitance and reciprocity without a relation of cause and caused (*Cat.* 13). The emphasis here is on non-reversibility or reversibility with regard to the consequence of existence (*fī luzūm al-wujūd*/κατὰ τὴν τοῦ εἶναι ἀκολούθησιν) which becomes the focal point of the subtraction method in the commentaries of Alexander of Aphrodisias and Philoponus as well as in Galen and later in al-Fārābī. In cases in which caused and cause and middle and major term in an argument from what is prior to us to what is prior in nature are “reciprocal with regard to the consequence of existence (*fī luzūm al-wujūd*),” the cause for a demonstration of the reasoned fact can be established by the reversibility of a sign-inference (τεκμήριον/ *dalīl*) to a ‘because of what’ (διότι/ *limā*) demonstration as exemplified *APo* 1.13 by the example of the sign of the non-twinkling of the planets.

§ 5–6: al-Fārābī’s method (*ṭarīq*) and *topoi* (*mawāḍiʿ*) of “existence and being taken away” (*al-wujūd wa-l-irtifāʿ*) is in agreement with Alexander of Aphrodisias’s interpretation of Aristotle’s *topoi* aiming at establishing or destroying “from consequence” (ἐξ ἀκολουθίας) analogous to Chrysipp’s first and second indemonstrable,¹⁰ and his division of these *topoi* by the distinction between complete and incomplete consequence (*luzūm*) and conflict (*ʿinād*) can be traced back to Galen’s *Institutio logica*, his *De methodo medendi*, and perhaps it has also been part of Galen’s lost work *On Demonstration*. The aim of Galen’s and al-Fārābī’s division of consequents based on Aristotle’s *topos* useful for establishing and destroying is to provide the missing division of the syllogisms ἐξ ὑποθέσεως (Arab. *ʿan sharīṭa*), namely “the distinctive features of these hypothetical syllogisms, and in how many modes they occur” (*fuṣūlu hādhihī l-maqāyisi sh-sharṭiyyati wa-ʿalā kam jihatīn takūnu*), announced by Aristotle *Prior Analytics* 1.44, 50a39–50b4, but not accomplished.¹¹

§ 7–8: In the *Metaphysics* Aristotle expounds the different kinds of causal relations on which ‘the consequence of existence,’ formulated as hypothetical proposition depends. Since one refers to the thing posited in the antecedent by

10 See Susanne Bobzien, “Alexander of Aphrodisias on Aristotle’s Theory of the Stoic Indemonstrables,” in *Strategies of Argument: Essays in Ancient Ethics, Epistemology, and Logic*, ed. by Mi-Kyoung Lee (Oxford: Oxford University Press, 2014), 199–228.

11 For Alexander of Aphrodisias regarding this point see Bobzien, loc. cit., esp. 202–205.

a name, the truth of the consequence of existence depends on the exact determination of the referent of the name. *Metaphysics* v. 6 sets out a taxonomy of the referents of names by which Aristotle distinguishes between referents which are one *per accidens* and divisible, and referents which are one *per se* and indivisible. This taxonomy provides the basis for the division of what is essential for a referent in concrete existence, for a referent in imaginary existence and for the referent of a definition distinguished by Ibn Sīnā by the method of subtraction.

2 **Finding Principles of Demonstration by ἀφαίρεῖν, συναίρεῖν and περιαιρεῖν in Aristotle, *Topics* VI.3–4, *Posterior Analytics* I.5, *Categories* 7**

Topics VI.4 and *Posterior Analytics* I.5 Aristotle uses the method of ἀφαίρεσις in the sense of “subtraction,” “taking away” and “removal” in the context of his epistemological approach to finding first principles of scientific knowledge.¹² These principles must be generally accepted and universal, prior causes of scientific knowledge. The method of subtraction seeks these causes by taking away from something given everything whose removal does not remove the given thing. It is a method which starts the scientific investigation from a given and posited thing, whether empirically observable, imaginable, concrete or abstract, leading to the recognition of its hidden causes by revealing and uncovering what is the “first,” i.e. primary (πρῶτον/ *awwalan*) and ‘immediate’ (δὲ ἀμέσων/ *lā bi-ghayri dhāwāt al-awsaṭ*)¹³ universal on which the mental and/or extramental existence of the given thing depends. The starting point and subject of the inquiry in all of these passages are given special objects of reference of which is sought either

- (a) the genus and differentia and thereby the definition of their quiddity (*Topics* VI.3–4),

or

- (b) the thing (*ma’nā*/ *πρᾶγμα*) to which a property belonging to the subject of inquiry belongs first, either *qua being* something, e.g., *qua being triangle*, or *qua having* something, e.g., *qua having the property of being master* (*Posterior Analytics* I.5, *Categories* 7).¹⁴

12 Cf. on the passages discussed in this paragraph John J. Cleary, “On the Terminology of ‘Abstraction’ in Aristotle,” *Phronesis* 30 (1985): 13–45.

13 *APo* I.13, 78a24–26.

14 On the distinction between being something and having something see § 2.3.

In the central passages on ‘subtraction’ quoted below two epistemological details are remarkable. First, Aristotle never uses the term ‘knowledge’ (*ilm*/ἐπιστήμη), but always the term ‘to become acquainted with, to recognize’ (*maʿrifā*/γνῶριζω) and its derivatives. Second, in the Arabic translation of *Topics* VI.3, 140a31–b2 the proper name ‘Zayd’ is added to signify an individual referent to which is referred *qua* being ‘human’ as point of departure of the inquiry.¹⁵

The method of ‘subtraction, taking away, removing’ is hence inductive and analytical, starting from the reference to a thing, seeking the causes of its existence from the aspect referred to. It analyzes backwards from a particular object of reference, referred to by a linguistic term put down for it, to the conditions and causes of the mental or extra-mental occurrence of features appearing at the object referred to, e.g., Zayd *qua* human being an animal and rational or *qua* breathing being alive, planets *qua* not-twinkling being near, the moon *qua* eclipsed indicating the interposition of the earth. Its function is to establish signs indicating things, events, states of affairs which are not only accompanying and concomitant to the things, events, states of affairs which operate as signs, but necessary or sufficient conditions of their generation and happening.

The subtraction method can be applied to all things which are generated, whether by nature or by technical production, to discover the causes of their becoming which are, in Aristotle’s terminology, necessary “from an assumption” (ἐξ ὑποθέσεως),¹⁶ in Ibn Sīnā’s terms “dependent on a condition” (*muʿallaqa bi-shart*).¹⁷

2.1 *Topics* VI.3–4: Finding the Definition by Subtracting What Is ‘Posterior’ to the Thing

Topics VI.4 Aristotle applies the procedure of ‘subtraction’ to ground a method for definition which is more scientific (*ashbah bi-ṭarīq al-ʿilm*) than the way in which most people (*jumhūr an-nās*) define things. Aristotle argues that most people define for instance ‘point’ by saying that “a point is the limit of a line, a line of a plane, a plane of a solid.” They do so because it is easier for them to grasp point from line, line from plane and plane from solid, because the solid is the thing first grasped from sense-perception. But “absolutely,” identified by Aristotle with “by nature” (*bi-ṭ-ṭabʿ*),¹⁸ plane is prior to solid, line prior to plane, and point prior to line. And likewise oneness (*waḥda*) is prior and

15 See below § 2.1 (n. 27).

16 Aristotle, *PA* I.1, 639b21–30.

17 E.g. Ibn Sīnā, *al-Ishārāt wa-t-Tanbīhāt*, ed. by Mujtabā az-Zāriʿī (Qom: Būstān-e Ketāb, 2008/1429q./1387sh), 4.2, 88, 10.

18 See below § 2.3.

principle to every number (*ʿadad*). So ordinary people explain what is prior by what is posterior and thereby do not give a definition that signifies the quiddity (*māhiyya*/τὸ τί ᾗν εἶναι) of the thing whose definition is sought. A scientific definition, however, must proceed from what is “better recognized absolutely” (*aʿraf ʿalā l-iṭlāq, maʿrūf ʿalā l-iṭlāq*) and prior by nature, to what may be “better recognized by us” (*aʿraf ʿindanā, maʿrūf ʿindanā*) but posterior by nature, just as the solid grasped from sense-perception is posterior by nature to plane, line, point.¹⁹

The examples ‘solid, plane, line, point’ are taken from geometry, and the examples ‘number, oneness’ are taken from arithmetic. The term ἀφαίρεσις stems from these sciences and has the meaning of “taking away” or “subtraction” of what is later from what is prior until the principle of a thing is reached, point by taking away line, oneness by subtracting number. The way is regressive, analyzing backwards, revealing the simple from the complex and the cause from the effect. Simple and cause are prior in nature and in recognition in the absolute sense. But they are revealed starting from what is complex and the effect by subtracting from the posterior everything unnecessary for the recognition of the prior.

The examples from geometry and arithmetic serve as templates for the relation of prior to posterior regarding genus, differentia, species, property:

[Text 2:] Because someone who defines correctly (*ʿalā ṣ-ṣawāb*) must define by genus and differentia. And these belong to things which are better recognized than the species and prior to it (*aʿraf wa-aqdam*). This is because the genus and the differentia take away the species by their being taken away (*yarfaʿānī n-nawʿa bi-rtifāʾhimā*/συναίρει). Therefore, the genus and the differentia are also prior than the species and better recognized than it. This is because, when the species is recognized (*ʿurifa*), it is necessary (*fa-wājibun ḍarūratan*) that the genus and the differentia are recognized, since someone who has recognized ‘human being’ (*al-insān/ἄνθρωπος*) also has recognized ‘walking living being’ (*al-ḥayy al-mashshāʾ*/καὶ ζῶν καὶ πεζὸν γνώριζε).²⁰

19 *Topics* VI.4, 141b5–25.

20 Cf. *Cat.* 13, 14b36 and 15a6. The problem with ζῶν for the Arabic translators is that it can stand for ‘living being’ and for ‘animal,’ the name indicating “living being endowed with sense” (*ḥayy ḥassās*), for which the Arabic translators use the term *ḥayawān*. The translators vary in their translations of ζῶν between *ḥayy* and *ḥayawān*. See GlossGA s.v. ζῶν. In *Cat.* 13 the interpolation *ḥayawān* in the Arabic translation, which might stem from a

And when the genus or (*aw/ḥ*) the differentia are recognized, it is not necessary that the species is also recognized. Hence the species is not recognized more than the two of them (*akthar minhumā/ ἀγνωστότωρον*).²¹ (*Topics* VI.4, 141b25–34; Arab. trans. Abū ‘Uthmān ad-Dimashqī, ed. Farīd Jabr, *an-Naṣṣ al-Kāmil li-Manṭiq Aristū*, vol. 2, 798–799).²²

The general rule is that the posterior is taken away together with the being taken away of the prior, but not the other way round. This rule holds for the act of recognizing (*ta’arruf/ γνωρίζειν*) (141b16) the species of the given thing by recognizing the genus and differentia of the definition of its species. Aristotle’s example ‘walking on land’ is one of the kinds of animal progression besides flying, swimming, creeping.²³ He uses this example in *Categories* 13 explicitly in function of a dividing difference,²⁴ but explains in *De partibus animalium* I why the kinds of animal progression cannot be used in the definitions of animals.²⁵

The procedure of ‘taking away’ and ‘subtraction’ is complemented by the reverse procedure of ‘addition’ (*ziyāda/πρόσθεσις*). In *Topics* VI.3 Aristotle explains the procedure of finding the correct definition of a given thing by the distinction between differentiae and properties as follows:

marginal note, clarifies the understanding of the reader that ζῶον here means ‘animal’ (see below § 4.2, text 23).

- 21 The Arabic translation deviates from the Greek which has “less known, less recognized” (*ἀγνωστότωρον*) instead of “not recognized more” (*lā yu’rafu akthar*).
- 22 Here and in the following I translated the Arabic translations of Aristotle’s works, not the original Greek.
- 23 *PA* I.1, 639b1–3.
- 24 See below § 4.2, text 23.
- 25 *PA* I.3, 643a35–b2. Cf. *Topics* I.4, 101b30–33 where the questions whether ‘two-footed, walking living being/ animal’ (τὸ ζῶον πεζὸν δίπουν) is the definition of ‘human’ and whether ‘living being/ animal’ (τὸ ζῶον) is the genus are examples for inquiry and the method of establishing and proving something. Alexander of Aphrodisias comments on the passage that ‘two-footed walking living being/animal’ (τὸ ζῶον πεζὸν δίπουν) is *not* the definition of ‘human.’ The strict definition (ὁ κυρίως ὁρισμός) must be by that which most of all makes clear the being (τὸ εἶναι) of the thing which in the case of human is by his being reasonable. ‘Two-footed walking living being/animal’ does not signify (σημαίνει) the being (τὸ τί ἦν εἶναι) and essence (οὐσία) of the thing (πρᾶγμα); it is neither counter-predicable as definition and distinctive property (ἰδιον), because it is “more” (πλέον) than human, in other words, wider in extension. Alexandri Aphrodisiensis *In Aristotelis Topicorum libros octo commentaria* (CAG II.2), ed. by M. Wallies (Berlin: Reimer, 1891) [henceforth = *In Arist. Top.*], 46,6–12; 45,19–22; 43,4; cf. the English trans. by Jan M. van Ophuijsen, *Alexander of Aphrodisias: On Aristotle Topics I* (London: Duckworth, 2001).

[Text 3:] Or [one has to examine] if what is added is proper (*khāṣṣan/ἰδίον*) [to the thing whose definition is sought], and whether, when it is taken away (*idhā rufi'a*), the remaining explanatory speech (*al-qawl al-bāqī*) is proper to it and signifies the substance (*jawhar/οὐσίαν*). For example in the definition of 'human' 'Zayd is capable of knowledge' (*inna Zaydan*²⁶ *qābilun li-l-'ilmi fī ḥaddi l-insān*)²⁷ is futile (*bāṭil*), because this, when it is taken away from him (*rufi'a minhu*), the remaining speech is proper to him and signifies his substance. In sum I say: all that is futile whose remainder signifies what the defined thing is, when it is taken away (*idhā rufi'a/ἀφαιρέντος*). (*Topics* VI.3, 140a31–b2; Arab. trans. Abū 'Uthmān ad-Dimashqī, ed. Farīd Jabr, *an-Naṣṣ al-Kāmil li-Manṭiq Aristū*, vol. 2, 793).

Subtraction, or taking away, reveals the distinction between properties prior to the definition of the quiddity of the given thing and properties posterior to it. All what is posterior to the quiddity is useless for the definition, since it can be taken away without the quiddity being taken away. With Aristotle's example in the quoted passage, when 'human being' is taken away, 'walking living being/animal' remains because these properties are prior, whereas the properties 'capable of knowledge,' 'laughing,' 'writing,' etc. are taken away together with 'human being' because they are later.

2.2 Posterior Analytics 1.5: Finding Principles of Demonstration by Subtracting Non-Primary Attributes

The second relevant passage for the procedure of finding first principles of demonstration by the method of "taking away" and "subtracting" (*ἀφαιρῆν*, noun: *ἀφαιρέσις*) is *Posterior Analytics* 1.4–5. Subtraction is here also treated within the context of 'prior and posterior.' However, Aristotle does not discuss how to find what is prior to a particular species and the sufficient condition and

26 Reading 'Zaydan' instead of 'Zaydun.'

27 The proper name 'Zayd' to signify an individual referent signified *qua* being human—that is a perceptible matter-form composite whose nature is 'human'—is added in the Arabic. The Greek has instead of *inna Zaydun* (*sic!*) [...] *fī ḥaddi l-insān*: ἐν τῷ τοῦ ἀνθρώπου λόγῳ ... (104a35). But since the Arabic has Zayd[un] (if this is actually in the manuscript which I did not check) instead of the grammatical correct Zaydan, the proper name may originally have been a gloss. The addition of the proper name to signify an individual by the translator Abū 'Uthmān ad-Dimashqī or by a later glossator fits nicely to Alexander's solution of the aporia treated in *Quaestio* 1.11a, by tying "the existence of definable natures to the particulars they are the natures of." Martin M. Tweedale, "Alexander of Aphrodisias' Views on Universals," *Phronesis* 29 (1984): 299; cf. § 3.2 below.

cause for its subsistence, existence and its recognition, as in the *Topics* passage. Rather, he discusses how to find the *first, primary, immediate* subject of a given accident or symptom.

The primary subject is found by removing from subjects for which the given accident holds *always and universally* all further accidents which can be taken away without taking away the given accident. The starting point is a certain number of given subjects for which the accident holds always and universally, that is a class of things specified by an accident or property which holds always and universally for all members of the class. Then all those accidents must be subtracted from these subjects, which do not remove together with their removal the sought primary subject and consequently the given accident or property whose first subject is sought.

The sought subject for example is the primary subject of the accident 'having angles equal to two right angles,' experienced as holding for 'isosceles triangle.' The accident 'isosceles' can be taken away from triangle without 'having angles equal to two right angles' being taken away.²⁸ 'Isosceles triangle' is not the primary subject of 'having angles equal to two right angles'; it is narrower in extension than the primary subject of 'having angles equal to two right angles.' 'Triangularity,' however, cannot be taken away from figure without 'having angles equal to two right angles' being taken away. The attribute 'angles equal to two right angles' does not hold *always and universally* for figure; 'figure' is wider in extension than '[thing] having angles equal to two right angles,' and hence 'figure' is not its primary subject and not the sufficient cause for the existence of angles equal to two right angles. Hence, the primary subject of an accident or property is found by excluding everything which is wider and narrower than it in extension:

[Text 4:] If there were no triangle other than the isosceles one, one might opine that the demonstration regarding it were *qua* (*min ḥaythu/ ١١*) being isosceles (74a16–17). [...]

Also a human who would prove of each single triangle, one by one, by one demonstration or by different demonstrations, that each single equilateral, scalene and isosceles triangle has angles equal to two right angles would not have knowledge that the three angles of the triangle are equal to two right angles (74a25–28). [...]

Hence, when do we not know in the universal way, and when do we know absolutely? (74a32–33). [...]

28 Cf. *APo* 1.4, 73b32–74a3.

I wish I knew (*layta shi'ri*) [whether it has angles equal to two right angles] by being a triangle or by being an isosceles [triangle]. And when is it that it belongs to it by virtue of this first (*awwalan/* πρώτον)? In sum, for which thing is the demonstration? Clearly [it refers to] the item to which it [viz. the attribute 'having angles equal to two right angles'] belongs first (*lahū yūjadu awwalan/* ὑπάρχῃ πρώτῳ), when has been taken away [everything which can be taken away] (*idhā rtafa'at/* ὅταν ἀφαιρεθῶντων). For example, the isosceles triangle made from bronze will have angles equal to two right angles. But this also belongs to it, even if it is taken away from it (*wa-ini rtafa'a minhu/* εἶναι ἀφαιρεθέντος) that it is from bronze and that it is isosceles. But it does not belong to it, if it is taken away from it that it is a figure (*shakl*), that it is a limit (*niḥāya*), except that that [viz. figure or limit] is not inseparably tied [to 'angles equal to two right angles'] *qua* being a first (*min ḥaythu huwa awwalun mughtariman*).²⁹ So what then is the first? If it is the case that it is triangle, then it [viz. the attribute 'angles equal to two right angles'] also belongs to that remainder (*li-tilka l-bāqiya*) [viz. the remainder of the subtraction procedure] because of this [viz. because of being a triangle]. And it is for this [viz. for triangle] that the demonstration is in the universal way (74a35–74b4). (*APo* 1.5, 74a16–74b4; Arab. trans. Abū Bishr Mattā b. Yūnus, ed. Farīd Jabr, *an-Naṣṣ al-Kāmil li-Manṭiq Aristū*, vol. 1, 447–449).

The procedure of 'subtraction' uncovers the primary subject as the primary reference point and principle for which an attribute holds universally and absolutely. For expressing the necessity-relation between the primary subject and the given attribute Aristotle uses the operator 'qua' (*min ḥaythu/* ἧ). Having angles equal to two right angles holds for isosceles triangle not *qua* isosceles, but *qua* triangle. Being isosceles is neither a necessary, nor the sufficient condition for having angles equal to two right angles, rather being a triangle is the sufficient cause. The quantity of the remainder of attributes is inversely proportional to the closeness to the primary subject. The lesser the attributes, the closer to the sought primary reference point. The reverse procedure of the addition (*ziyāda/* πρόσθεσις) of attributes leads to a greater distance from the sought principle. The addition of further attributes is therefore not only useless (*bāṭil*), but misleading. It obscures the view and knowledge of the essential item which is the cause on which the demonstration is built.

29 Cf. *Lisān al-'Arab* s.v. gh-r-m: *mughtarim ay lāzīm dā'im; lāzīm lahū*.

2.3 Categories 7: *Subtraction as Method to Find the Relational Aspects of Correlatives*

The third important passage is *Categories* 7, where Aristotle explains “relatives, when they are related in reciprocal relation, are said to be reversible with each other in mutual correspondence” (*al-idāfāt idhā uḍīfat ‘alā l-mu‘ādala qīla annahā yarji’u ba‘duhā ‘alā ba‘dīn bi-t-takāfu’* / τὰ πρὸς τι, ἐάνπερ οἰκείως ἀποδιδῶται, πρὸς ἀντιστρέφοντα λέγεται) (7a22–8a12). Also here the leading question is the search for what is prior and what is posterior and for the first, primary (*awwalan* / πρῶτον) and immediate signified by the qua-operator (7a17):

[Text 5:] When (*matā*) a thing is brought in relation to the thing to which it is interrelated by a speech expressing a reciprocal relation (*bi-l-qawl idāfat-tan mu‘adalatan*), then—if all other accidental things are taken away (*ini rtafa’a ...* / πάντων περιαιρουμένων ...), so that after this that thing alone is left to which it is related—it will always be interrelated by a speech expressing a reciprocal relation. For example, the slave is said to be in relation to the master. If the other things attached to the master are taken away (*ini rtafa’at sā’iru l-ashyā’u l-lāḥiqatu* / περιαιρουμένων ...)—like that he is biped, that he is capable of knowledge, that he is a human—, so that is left (*baqiya*) only that he is a master, then the slave will always be spoken of in relation to him. Since one says of him: The slave is slave of the master.

When a thing is not brought in a reciprocal (*‘alā ghayri mu‘ādala*) relation to the thing to which one relates it in speech, and then the other things are taken away (*irtafa’a* / περιαιρουμένων ...), and that thing alone is left to which it had been interrelated, then it will not be related to that thing in speech. Let us take [as example] that ‘slave’ is brought in relation to ‘man,’ and ‘winged’ to ‘something which has feathers,’ so that from ‘man’ should be taken away that he is a master. Then at that time he will not be said to be ‘slave’ in relation to (*bi-l-qiyās ilā*) ‘man.’ This is because, when the master does not exist (*idhā lam yakun al-mawlā* / μὴ γὰρ ὄντος δεσπότου), there also does not exist the slave. And likewise also from the thing which has feathers should be taken away that it is a thing which has wings. Then at that time ‘winged’ is no relative. This is because when there does not exist the thing which has wings (*idhā lam yakun dhū l-janāḥ* / μὴ γὰρ ὄντος πτερωτοῦ), then ‘winged’ does not belong to something (7a31–7b9). [...]

And one might opine that all relatives are together with regard to the nature [of the relative] (*ma’an fi t-tab’* / πρὸς τι ἅμα τῇ φύσει). And this is true with regard to most of them. For the double and the half exist

together. And if the half exists, the double exists (*wa-in kāna n-niṣfu mawjūdan fa-d-di'fu mawjūdan*/ καὶ ἡμίσεος ὄντος διπλάσιόν ἐστιν). And if the slave exists, the master exists (*wa-in kāna l-'abdu mawjūdan fa-l-mawlā mawjūdan*/ καὶ δούλου ὄντος δεσπότης ἐστίν). And likewise it is the case with regard to the other relative things. And each of them can annul the other together with its annulment (*fa-qad yufqidu ... ma'a faqdihi*/ συναναιρεῖ). This is because when (*idhā*) the double does not exist, the half does not exist. And when the half does not exist, the double does not exist.³⁰ [...]

And one might opine that it is not correct that all relatives are together with regard to the nature [of being a relative] (*ma'an fi t-tab'*/ τὸ ἄμα τῇ φύσει εἶναι). This is because one may opine that the known/knowable [thing] (*al-ma'lūm*) is prior to the knowledge, because in most cases we obtain knowledge of already existent things. And in few cases, almost never, the knowledge and knowable [thing] take place together. Also, if the knowable [thing] is annulled, the knowledge is annulled together with it by it (viz. by the annulment) (*ayḍani l-ma'lūmu in fuqida fuqida ma'ahu l-'ilmu bihi*/ ἔτι τὸ μὲν ἐπιστητὸν ἀναιρεθὲν συναναιρεῖ τὴν ἐπιστήμην). However the knowable [thing] is not annulled together with the knowledge. This is because if the knowable [thing] does not exist, the knowledge does not exist, because at that time (*hīna'idhin*) there does not exist any knowledge of a thing. However, if no knowledge exists, then nothing prevents that the knowable [thing] exists ... (7b15–8a12). (*Categories* 7, 7a31–8a12; Arab. trans. Ishāq b. Hunayn, ed. Farīd Jabr, *an-Naṣṣ al-Kāmil li-Manṭiq Aristū*, vol. 1, 59–62).

As in the *Posterior Analytics* the method of subtraction here serves for finding the primary subject of a property and attribute. The difference between the two passages is that in the *Posterior Analytics* the sought primary subject of the given property and attribute is a substance and an essence, a thing *qua being* this thing. E.g. triangle *qua being triangular*, and triangularity *qua triangularity* is the primary subject of the attribute “*having angles equal to two right angles*.” In *Categories* 7, by contrast, the primary subject is a thing *qua having* a certain property and an essence *qua having attached to it* a certain property. E.g. a substance *qua having* the property of mastery over a slave and an essence to which

30 Cf. on their relation with regard to the “reversibility in mutual correspondence with regard to the consequence of existence,” *Cat.* 13, see below § 4.2.

the property of mastery over a slave is attached, or, e.g., a substance *qua having* the property of being knowable.³¹

A further difference is that in *Categories* 7 the issue of priority and posteriority is linked to the issue of potentiality and actuality. The knowable thing is *qua being potentially* known prior to the knowledge, and it is *qua being actually* known together with the knowledge.

2.4 Subtraction as Method to Establish a ‘Symptom’ (σύμπτωμα)

Aristotle distinguishes cause (αἰτία) and sign (σημείον) of events from ‘symptom’ (σύμπτωμα). Cause and sign are related as cause and effect, but ‘symptom’ is explained in the sense of a mere coincidence.³²

However, Alexander of Aphrodisias, in his *Quaestio* 1.11 on the solution of the aporia resulting from *De anima* 1.1, 402b7³³ by explaining that the existence of a universal depends on the existence of a thing [referred to in thought and by linguistic expression] (*μαῖνᾶ, shay’*/ πρᾶγμα) and hence is posterior to the thing on whose existence its existence depends, uses besides συμβεβηκός the term σύμπτωμα, translated by Abū ‘Uthmān ad-Dimashqī into Arabic by either *‘araḍ* or *‘arīḍ*, to signify the posteriority of something accidental which is consequent upon a thing which is its primary subject.³⁴

31 On Ibn Sīnā’s distinction between the two aspects from which a subject can be related to a predicate, namely “by the fact of being it” (*bi-annahū huwa*) or “by the fact of having it” (*bi-annahū dhū huwa*), see Alexander Kalbarczyk, *Predication and Ontology: Studies and Texts on Avicennian and Post-Avicennian Readings of Aristotle’s Categories* (Berlin: De Gruyter, 2018), 75–76, 122, 258.

32 *De divinatione per somnum* 1, 462b26–463a3, *Aristotelis Opera*, vol. III, ed. by Immanuel Bekker (Oxford: Oxford University Press, 1837): “By a cause (αἷτιον), I mean, for example, the moon as a cause of the sun’s being eclipsed, or fatigue as a cause of fever. By a sign (σημείον), the star’s entry into shadow as a sign of its eclipse, or roughness of the tongue as a sign of someone’s having a fever. And by coincidence (συμπτωμάτων), the sun’s being eclipsed when someone is taking a walk, since that is neither a sign nor a cause of its being eclipsed, nor is the eclipse of the walking. Hence no coincidence happens either always or for the most part.” Trans. quoted from Filip Radovic, “Aristotle on Signs in Sleep: Natural Signification and Dream Interpretation,” in *Forms of Representation in the Aristotelian Tradition*, vol. 2: *Dreaming*, ed. by Christina Thomsen Thörnqvist and Juhana Toivanen (Leiden: Brill, 2022), 63. Cf. Hermann Bonitz, *Index Aristotelicus* (Berlin: Reimer, 1870), s.v. σύμπτωμα for Aristotle’s use of σύμπτωμα in the sense of ἀπὸ τύχης.

33 Cf. below § 3.2 (text 15) and § 4.1.1 (text 19).

34 τὸ ζῶν τὸ καθόλου ... ἔστιν σύμπτωμα ἐπὶ τινι γινόμενον πράγματι/ *al-ḥayawān al-kullī ... ‘arīḍun tābī’un li-ma’nan mā. Alexandri Aphrodisiensis praeter commentaria scripta minora: Quaestiones—De fato—De mixtione*, ed. by Ivo Bruns, CAG, Suppl. vol. 11.2 (Berlin: Reimer, 1892), 22.1–4; Hans-Jochen Ruland, “Zwei arabische Fassungen der Abhandlung des Alexander von Aphrodisias über die Universalia (Quaestio 1 11a),” 266, 26–28; cf. 263, 274 (s.v. σύμπτωμα).

Philoponus, in his extensive commentary on how to find necessary principles of demonstrative knowledge by the subtraction method (on *APo* 1.5, 74a25–74b5), uses the term ‘symptom’ (σύμπτωμα) in the sense of a certain sign established by subtraction:

[Text 6:] Indeed, when the triangle is taken away, the figure and the [feature of] having limits remain, [whereas] the symptom [of triangle, viz. having its three angles equal to two right angles] is taken away. (Philoponus, *In Analytica Posteriora* 1.5, ad 74a32–33, ed. M. Wallies, CAG XVIII, Berlin: Reimer, 1909, 78,21–22).

And Philoponus concludes his comment with the goal of the subtraction method:

[Text 7:] When producing his teaching about the universal, he [sc. Aristotle] said that demonstrations *per se* are about such things of which I thus say: about such things that are the primary universals (τῶν πρώτων καθόλου), and are such things that when they are taken away, the symptom, which we want to prove as belonging to the subject, is taken away (καὶ ὧν ἀναιρεμένων ἀναιρεῖται τὸ σύμπτωμα ...). (Philoponus, *In Analytica Posteriora* 1.5, ad 74b5, ed. Wallies, CAG XVIII, 81,5–8).

Philoponus determines the relation between the universal signified by the middle term of a demonstration and the sought (ζητούμενον/ *matlūb*/ quaesitum), signified by the major term, as the relation between the necessary and proximate cause and condition of the existence of a ‘symptom.’ The cause is “better recognized absolutely” and “prior by nature.” The symptom is posterior by nature, since its existence depends on the existence of its proximate, sufficient cause signified by the middle term. But the symptom is “better recognized by us.” The demonstration of which Philoponus speaks is synthetical, from cause to caused, proving the reasoned fact (τὸ διότι/ *limā*) by the ‘because of which’ (διὰ τί/ *li-ajli*): This thing is a triangle, every triangle has its three angles equal to two right angles, hence this thing has its three angles equal to two right angles *qua* and *because of* its being a triangle. The way from the symptom to its cause, revealed by the method of subtraction is analytical, from caused to cause: This figure has its three angles equal to two right angles, having three angles equal to two right angles is a symptom of triangle, hence this figure is a triangle.

Galen, the older contemporary of Alexander, in *De methodo medendi*, uses the term σύμπτωμα in a more specific sense distinguished from συμβεβηκός.

'Accidents' (συμβεβηκότα) are necessary consequents (τὰ ἐξ ἀνάγκης ἐπόμενα) of healthy, natural constitutions of activities. 'Symptoms' (συμπτώματα)—translated into Arabic by Ḥubaysh by the term *a'rād*, sing. *'arad*³⁵—are necessary consequents of diseases.³⁶ 'Disease' is the condition (διάθεσις) that hinders the activity (ἐνέρθεια), 'symptom' is what follows it, 'cause' (αἴτιον) is what produces (ἐργαζόμενον) it.³⁷ 'Cause' hence is what causes the condition which is the disease. The cause precedes the disease, and the symptom is consequent upon the disease. All three are contrary to nature,³⁸ that is contrary to the natural human powers and capacities (δυνάμεις).³⁹ When the diseases are erased (ἐκκόπτειν), together with them all symptoms are taken away (συναναιρεῖται).⁴⁰

In *De constitutione artis medicae* Galen distinguishes three sub-classes of symptoms distinguished by their differentiae (διαφοραί), and between (a) symptoms which necessarily (ἐξ ἀνάγκης) follow the condition (διάθεσις), i.e. the disease, (b) symptoms which necessarily follow differentiae of the condition, i.e. differentiae of the disease, or (c) the nature (ἦθος) of a disease or its magnitude (μέγεθος). Only in (a) the first case the symptoms follow the disease [itself] by necessity and are things by which the disease [itself] is recognized (γνωρίσματα).⁴¹ In short, Galen seeks in each case the thing to which the symptom belongs primarily and immediately. This may be (a) the disease itself, or (b) a differentia of the disease, or (c) the nature or magnitude of the disease. In each case the existence of the symptom depends on the existence of a particular proximate cause of which the symptom is the effect. 'Subtraction' here is the method to find the proximate cause starting from the symptom.

35 Galen, *On Medical Experience: First Edition of the Arabic Version with English Translation and Notes* by Richard Walzer (London, e.a.: Oxford University Press), 1944, 6,10 (§ IV) and *passim*.

36 *Claudii Galeni Opera omnia*, vol. x: *De methodo medendi*, ed. by Karl Gottlob Kühn (Leipzig: Car. Cnoblochii, 1825), I.9, 70,9–11.

37 Op. cit. II.2, 81,13–16.

38 Op. cit. I.9, 75,11–12; II.3, 90,12–16.

39 On the definition of nature by Galen see Robert Vinkesteijn, *Philosophical Perspectives on Galen of Pergamum: Four Case-Studies on Human Nature and the Relation between Body and Soul*, *Philosophia Antiqua*, vol. 166 (Leiden: Brill, 2022), "Case-Study II: Galen on the Nature of Man," 136, 142.

40 *De methodo medendi* II.4., ed. Kühn, 92,3–5.

41 Galen, *De constitutione artis medicae ad Patrophilum*, in *Claudii Galeni Opera Omnia*, vol. I, ed. by Karl Gottlob Kühn (Leipzig: Car. Cnoblochii, 1821), 273,1–16.

3 To Establish (*ithbāt, tathbūt*/ κατασκευάζειν) and to Destroy (*ibtāl/ ἀνασκευάζειν*) by Taking Away (*rafʿ*/ ἀναιρεῖν) the Consequent (*lāzim/ ἀκόλουθον*) in *Topics* II and VII: the Proof of an Implication by Contraposition

Topics II opens with *topoi* related to the four problems definition, property, genus and accident introduced *Top.* I.4, 101b25. The function of these *topoi* is to establish (*ithbāt, tathbūt*/ κατασκευάζειν) and to take away (*ἀναιρεῖν*)⁴² and thus to destroy (*ibtāl/ ἀνασκευάζειν*) that something exists or does not exist (*yūjadu aw lā yūjadu/ ὑπάρχειν ἢ μὴ*), simply (*ʿalā l-ittlāq/ ἀπλῶς*),⁴³ that is, in the terminology of the *Posterior Analytics*, to answer the question ‘whether it exists or does not exist’ (εἰ ἔστιν ἢ μὴ ἔστι), or in short, ‘whether it is, simply’ (εἰ ἔστιν ἀπλῶς).⁴⁴

3.1 *Topics* II.4: To Establish by the Evidence of the Existence of the Consequent (*lāzim/ ἀκόλουθον*) and to Destroy by Taking Away the Consequent

Topics II.4 formulates the general rules for establishing and destroying:

[Text 8:] Regarding the topos (*mawḍiʿ/ προκειμένον*)⁴⁵ [one seeks to establish or to destroy] we must consider: [a] What is the thing which, when (*idhā*) it exists, then it is necessary that the posited [thing] (*mawḍūʿ/ προκειμένον*)⁴⁶ exists? Or: [b] What is the thing which exists out of necessity when (*idhā*) the posited thing exists? Hence, [a] the existence of the posited thing out of necessity when something exists is [useful] for the one who wants to establish (*an yuthbita/ κατασκευάζειν*) something. This is because, if it has become evident (*in tabayyana/ δειχθῆναι*) that that thing

42 Also *Top.* II and VII, Abū ʿUthmān ad-Dimashqī translates passive derivatives of the Greek infinitive ἀναιρεῖν by the Arabic verb *irtafaʿa* (infinitive *irtifāʿ*), e.g. *Top.* VII.5, 155a9 “being taken away” (ἀνηρημένος) is translated by *irtafaʿa*. Active derivatives of ἀναιρεῖν are translated by derivatives of the verb *rafaʿa* (infinitive *rafʿ*) or of the verb *abtala* (infinitive *ibtāl*). Hence Abū ʿUthmān ad-Dimashqī takes *rafʿ*/*rafaʿa* and *ibtāl*/*abtala* as synonyms equivalent to ἀναιρεῖν and ἀνασκευάζειν.

43 *Top.* II.1, 109a9 and 14–20. See on the absolute use of εἶναι [and ὑπάρχειν] Charles H. Kahn, “The Greek Verb ‘to Be’ and the Concept of Being,” *Foundations of Language* 2 (1966): 250.

44 *APo* II.1, 89b32; II.2, 89b37–38.

45 Lit. “the thing lying before us” (*προκειμένον*). The Arabic edition has in this place *mawḍiʿ* (“topos”).

46 Abū ʿUthmān ad-Dimashqī translated the term *προκειμένον* here in the sense of *τιθέμενον* which is also Alexander of Aphrodisias’s standard term for the thing debated in his *Topics* commentary. Cf. also e.g. *Topics* II.4.

exists, then [the existence of] the posited thing becomes evident (*ṣāra ... mutabaqqinan*/ δεδειγμένον). And [b] for the matter of the existence of something when the posited thing exists—this is [useful] for the one who wants to destroy (*an yubṭila*/ ἀνασχευάζειν) [the claim of the existence of] the thing. This is because we have destroyed [the claim of the existence of] the posited thing if we have made evident that what [necessarily] follows upon the posited thing (*al-lāzim li-l-mawḏūʿ*/ τὸ ἀκόλουθον τῷ προκειμένῳ) does not exist. (*Topics* 11.4, 11b17–23; Arab. trans. Abū ʿUthmān ad-Dimashqī, ed. Farīd Jabr, *an-Naṣṣ al-Kāmil li-Mantiq Aristū*, vol. 2, 683).

The way of [a] establishing is by analyzing [a.1] from something posited which is prior and better known to us *backwards* to the sufficient condition and cause of its existence which is prior in nature to the posited thing. In the conditional ‘when q, then necessarily p’ is ‘q’ the sufficient cause of the recognition that the [hypothetically] posited thing ‘p’ exists *and* the sufficient cause of the existence of the [hypothetically] posited thing ‘p’ itself. E.g., ‘when rational animal exists, then it is necessary that man exists,’ where the recognition of the existence of man *and* the existence of man itself follows necessarily upon the existence of ‘rational animal,’ because the existence of ‘rational animal’ is the sufficient cause of both, the recognition of the existence of man *and* of the existence of man itself. Or, establishing is by analyzing from something given [a.2] to something concomitant in nature, e.g., ‘when the double exists, then the half exists, and when the half exists, then the double exists.’

The way of [b] destroying is [b.1] by analysis from something [hypothetically] posited, prior and better known to us, *backwards* to either [b.1.1] the sufficient condition and cause of the recognition of the existence of the posited which is prior by nature to the posited, or to something concomitant by nature, or [b.1.2] to a necessary condition and cause of the recognition of the existence of the posited, prior by nature to the posited, or [b.2.] to the recognition of the existence and to the existence itself of something posterior by nature to the posited for whose existence the posited is the sufficient cause. In [b.1.1] the conditional ‘when p, then out of necessity q’ the [hypothetically] posited ‘p’ is the sufficient cause of the recognition of the existence of q, e.g., ‘when man exists, then rational animal exists,’ and q is the sufficient condition and cause of the existence of p itself. In [b.1.2] ‘when p, then out of necessity q,’ the [hypothetically] posited thing ‘p’ is a sufficient condition and cause of the recognition of the existence of q, and q is a necessary condition and cause of the existence of p. E.g., ‘when man exists, then out of necessity animal exists,’ or ‘when roof exists, then out of necessity wall exists,’ and ‘when wall exists, then out of necessity foundation exists.’ In [b.2.] ‘when p, then out of necessity q,’ the [hypotheti-

cally] posited thing 'p' is a sufficient cause of the recognition of the existence of q and of the existence of q itself. E.g. if man exists, then laughing [thing] exists, if triangle exists, then the angle sum of two right angles exists.

Hence, the thing following out of necessity upon the posited (*al-lāzim li-l-mawḍūʿ*/ τὸ ἀκόλουθον τῷ προκειμένῳ)—the 'posited' being a "[hypo-] thesis" (*waḍʿ*), in another word an "assumption" and in its function equivalent to "the sought" (*ζητούμενον*/ *maṭlūb*/ quaesitum) in position of the major term of the conclusion of a first figure syllogism of which one seeks the cause⁴⁷—may be causally related to what is posited in the antecedent in three ways. It is either

- [a and b.1.1] the sufficient condition and cause of the existence of the posited thing, or
- [b.1.2] a necessary condition and cause of the existence of the posited thing, or
- [b.2] a thing following 'by nature' upon the existence of the posited thing and being posterior in nature to the posited thing.⁴⁸

Alexander of Aphrodisias explains *Topics* 11.4, 11b17–23 as *topos* "from consequence" (ἐξ ἀκολουθίας) which "is twofold," namely "establishing and destroying."⁴⁹ With that said, Alexander connects *Topics* 11.4, 11b17–23 with *Categories* 12 and 13 which treat two things from the aspect of being "non-reciprocal" or "reciprocal by mutual correspondence with regard to the consequence of existence" (*yarjiʿāni bi-t-takāfuʿ fi luzūmi l-wujūd*/ ἀντιστρέφόντων κατὰ τὴν τοῦ εἶναι ἀκολουθίᾳ).⁵⁰ But that is not all. Alexander draws an analogy between this *topos* and the first and second Stoic indemonstrable.⁵¹

47 Cf. Ibn Sīnā, *K. ash-Shifāʿ, al-Manṭiq* v1, *al-Jadal*, ed. by Ibrahim Madkour and Abd al-Aziz F. Ahwani (Cairo: al-Maṭbaʿa al-amīriyya, 1956), 1.6, 53, 17–19.

48 Cf. below § 4 for the alternative causal relations.

49 Alexander of Aphrodisias, *Alexandri Aphrodisiensis in Aristotelis Topicorum libros octo commentaria*, ed. by M. Wallies, CAG 11.2 (Berlin: Reimer, 1891), *In Top.* 11, 165, 6–7.

50 See below § 4.1.1 with text 20. Whether *Cat.* 12 and 13 are in the right place of the work handed down from Aristotle or not can be neglected here.

51 See in detail Bobzien, "Alexander of Aphrodisias on Aristotle's Theory of the Stoic Indemonstrables," 207–208; 218. Bobzien argues convincingly that Alexander does not mean to identify the Stoic argument based on expressions with the Aristotelian exposition of following in *Topics* 11.4, 11b17–23. See also on Alexanders criticism of the Stoic's understanding of following based on expressions instead of meanings *Alexandri Aphrodisiensis in Aristotelis analyticorum priorum librum 1 commentarium*, ed. by Max Wallies, CAG 11.1 (Berlin: Reimer 1883), 373, 29–31 (ad 49b3–9); Alexander of Aphrodisias, *On Aristotle Prior Analytics* 1.32–46, trans. by Ian Mueller (London: Bloomsbury Academic, 2013), 14–15 (Introduction).

[Text 9:] [ad a] For if the antecedent, also the consequent, establishing according to the so-called first indemonstrable (εἰ γὰρ τὸ ἡγούμενον, καὶ τὸ ἐπόμενον κατὰ τὸν πρῶτον λεγόμενον ἀναπόδεικτον ὄντα ἐξ ἀκολουθίας κατασκευαστικόν)(Alexander of Aphrodisias, *In Top.* 11, 165,12–13).

[ad b] For if not the consequent, also not the antecedent, according to the so-called second indemonstrable which is destructive from consequence (εἰ γὰρ μὴ τὸ ἐπόμενον, οὐδὲ τὸ ἡγούμενον κατὰ τὸν δεύτερον λεγόμενον ἀναπόδεικτον, ὅς ἐστιν ἐξ ἀκολουθίας ἀνασκευαστικός). (Alexander of Aphrodisias, *In Top.* 11, 166,11–13).

Taken in connection with Aristotle’s distinction between prior to us and prior by nature, with the division of priority in *Metaphysics* v and *Categories* 12 and with concomitance by nature treated at *Categories* 13,⁵² establishing is [a] by taking the sufficient condition and cause of the recognition of the existence of the “thing lying before us” (προκείμενον/*mawdū*) and prior or concomitant by nature to that thing as antecedent and the posited thing as consequent, and then concluding from the existence of the antecedent to the existence of the consequent: if q, then p, but q, therefore p. Destruction is [b] by taking the posited thing as antecedent and something which is either [b.1] prior or concomitant by nature and [b.1.1] the sufficient or [b.1.2] a necessary condition and cause of the existence of the posited thing, or [b.2] something necessarily following upon the posited thing and posterior or concomitant by nature as consequent, and then concluding from the non-existence of the consequent to the non-existence of the antecedent: if p, then q, but not q, therefore not p.

Given this, the method of taking away and the ‘twofold’ *topos* ‘from consequence’ work by the contraposition of an implication. The implication ‘if p, then q’ is true, if and only if, the contraposition ‘if not q, then not p’ is true.

A further witness for drawing an analogy between *Top.* 11.4, 111b17–23 and the Stoic first and second indemonstrable is Philoponus on *Posterior Analytics* 1.3, 72b5–7.⁵³ Instead of ‘indemonstrable’ (ἀναπόδεικτον) Philoponus speaks of ‘hypothetical’ (ὑποθετικῶν), and instead of the term ‘to destroy’ (ἀνασκευάζειν) he uses the term ‘to take away’ (ἀναιρεῖν).⁵⁴ The context is the refutation of the

⁵² See below § 4.

⁵³ Philoponus, *In Analytica Posteriora* 1.3, ed. by M. Wallies, CAG XVIII (Berlin: Reimer, 1909), 42–45; trans. by Richard McKirahan, Philoponus: *On Aristotle Posterior Analytics* 1.1–8 (London: Bloomsbury Academic, 2008), 50–53.

⁵⁴ This terminology is in conformity with Alexander. For the term ἀναιρεῖν see below § 3.2 (text 14), and on the development of the Peripatetic terminology for the Stoic indemon-

claims that “demonstration is either of nothing at all or of everything,”⁵⁵ given that demonstration presupposes prior knowledge of the primary things, the Meno puzzle. According to Philoponus both parties advocating either of these two doctrines establish their claim by “the hypothetical”:

[Text 10:] If demonstration exists, necessarily the primary things are previously recognized (εἰ ἔστιν ἀποδείξις, ἀνάγκη προεγνώσθαι τὰ πρῶτα). (Philoponus, *In APo* 1.3, 43,18–19).

But both parties add “through demonstration” (δι’ ἀποδείξεως) to the consequent. Those “taking away” (ἀναιροῦντες) demonstration⁵⁶ make use of the “second hypothetical” (τῷ δευτέρῳ τῶν ὑποθετικῶν), arguing that prior knowledge through demonstration would have to proceed ad infinitum:

[Text 11:] If demonstration exists, necessarily the primary things are previously recognized through demonstration (ἀνάγκη προεγνώσθαι τὰ πρῶτα δι’ ἀποδείξεως).

But now (ἀλλὰ μὴν) impossibly the primary things are previously recognized through demonstration [because this would have to proceed ad infinitum which is impossible].

Therefore demonstration does not exist. (Philoponus, *In APo* 1.3, 44,1–4).

The other party is establishing (κατεσκευάζον) their claim that there is demonstration of everything, saying:

[Text 12:] If demonstration exists, it is necessary to know the primary things through demonstration (ἀνάγκη τὰ πρῶτα εἰδέναι δι’ ἀποδείξεως).

But now (ἀλλὰ μὴν) knowing the primary things through demonstration exist.

Therefore demonstration exists. (Philoponus, *In APo* 1.3, 44,14–16).

Philoponus criticizes that instead of positing the antecedent as additional assumption “in the first of the hypotheticals” they posited the consequent as

strables and for hypothetical syllogistic see Bobzien, “Alexander of Aphrodisias on Aristotle’s Theory of the Stoic Indemonstrables,” 213–219.

55 Philoponus, *In APo* 1.3 (ad 72b5–7), 42,14–15.

56 Philoponus, *In APo* 1.3, 44,13.

additional assumption (πρόσληψις) and so inferred a false conclusion by a circular proof (κύκλω δεῖξις).⁵⁷ Philoponus exemplifies this error by the following example:

[Text 13:] For if I said so: “if man exists, also animal exists,” [and] then use the consequent as additional assumption “but animal exists,” it is not true to conclude “therefore also man [exists].” (Philoponus, *In APo* 1.3, 44,16–21).⁵⁸

The erroneous conclusion is due to the confusion of the necessary and sufficient condition and cause in the consequent.

Philoponus’s criticism is based on the rules of establishing and destroying by taking away explained by Aristotle, *Topics* VII.5 and Alexander in his commentary on *Topics* II.⁵⁹ The wider in extension, ‘animal,’ comprises the narrower in extension, ‘man.’ ‘Man’ is taken away together with animal, since ‘animality’ is a necessary condition of the intramental and extramental existence of the essence of man. Also knowledge of the primary things is a necessary, but not sufficient condition and cause of the existence of demonstration; when knowledge of the primary things is taken away, together with it demonstration is taken away.

Nevertheless, the causal relations between man and animal and between demonstration and knowledge of the primary things as well as the logical implications and semantic entailments in the examples are different. ‘Animal’ is part of the intension of the term ‘man,’ animality is a constitutive, internal element of the essence of man and therefore a necessary condition of its existence, but not prior in time to man. ‘Knowledge of the primary things’ is not part of the intension of ‘demonstration,’ nor part of its essence, but rather an external condition and cause of the existence of demonstration and prior to it in time. Its relation to demonstration is the relation of fundament to wall or roof, the standard example of implication in this narrower sense from Aristotle and his commentators to Ibn Sinā.

3.2 *Topics VII.5: Destroying by Taking Away the Wider in Extension*

Top. VII.5 Aristotle applies the *topos* of establishing and destroying to the four problems ‘definition, property, genus and accident.’ He takes the accident in the

57 On Philoponus’s explanation of the circular proof see *In APo* 1.3, 44,22–45.5.

58 I hesitate to translate πρόσληψις by “additional assumption” and wonder whether or not instead a statement of a fact is meant. Cf. below § 5.1 with n. 104.

59 See below § 3.2.

wider sense of being that which “must merely exist”⁶⁰ and thus being the widest in extension among the four problems and then orders all four from the widest to the narrowest in extension in the sequence ‘accident, genus, property, definition.’ The accident comprises the other three which all must exist, which is why the other three are taken away together with the accident. Genus is the second widest in extension, so that property and definition are taken away together with the genus, but not the accident. If property is taken away, definition is taken away together with it, but neither genus nor accident, since property is wider in extension than definition but narrower than genus and accident. And if definition is taken away none of the other three is taken away together with it, since definition is the narrowest in extension of all four.

Further, Aristotle explains *Topics* VII.5 that it is easier to destroy than to establish definition, property, genus and accident, because for destruction it is enough to raise objections against one thing which is part of the alleged definition or property or part of the alleged genus or class, whereas for establishing definition or property all their parts must be put together, and for establishing genus or accident it must be established that they are genus or accident of all parts and members of the alleged genus or class. In sum, for destruction it is enough to take away one necessary part, whereas for establishing all necessary parts must be put together.

In accordance with Aristotle’s arrangement of accident, property, genus and definition from decreasing extension to increasing intension Alexander of Aphrodisias explains that the starting point of *Topics* II is the accident, since among the four problems this is the widest in extension, comprising the other three problems genus, property and definition, which all ‘belong to the thing’ (ὑπάρχει δὲ τῷ πράγματι).⁶¹

[Text 14:] For nothing can be a genus or a definition or a proprium of something without belonging to it (μὴ ὑπαρχόντα αὐτῷ). For this reason, if the [property of] belonging (τοῦ ὑπάρχοντος)—through which the accident is defined—is taken away (ἀναιρεμένου), then each of the others is taken away (ἀναίρεται); on the other hand, it is not the case, if one of the others is taken away (ἀναιρεμένου), then also the accident is taken away together with it (συναίρεται). So the accident is, in this sense, prior in nature to the other [kinds of predicates]. (Alexander of Aphrodisias, *In*

60 *Top.* VII.5, 155a14–16: *al-‘araḍ ... innamā yanbaghī an yūjada lā ghayru/ ἀναγκαῖον ... τὸ συμβεβηκὸς ... ὑπάρχειν μόνον.*

61 For ὑπάρχει with dative case cf. Arab. *yūjadu li-*.

Top. II, 127,22–27; trans. Laura M. Castelli, *Alexander of Aphrodisias: On Aristotle Topics 2*, 53, slightly modified).

‘To belong’ is the widest in extension, as Alexander further explains, because the higher in degree comprises the lower in degree, and the wider in extension comprises the narrower in extension,⁶² and therefore also “the *topoi* establishing the universal establish together with it the particulars falling under them,” and “the universally destructive *topoi* take away the particulars together [with the universal] (συναναίροῦσι).”⁶³ And he argues that from this aspect the accident, “in this sense” of unqualified existence, is said to be ‘prior in nature’ to the other kinds of predicates. Unqualified ‘belonging to something’ comprises any kind of qualified belonging to something and therefore the former is a necessary condition and cause of the latter.

The authoritative passage for Alexander’s argument is *Posterior Analytics* 1.24, where Aristotle explains why demonstration of the universal is better than a particular demonstration. E.g. the notion of ‘triangle’ extends ‘over more’ (ἐπὶ πλεόν/ *akthar*) than ‘isosceles triangle’ extends, since ‘triangle’ comprises any kind of triangle, which is why demonstration of the universal is better,⁶⁴ and if it is taken away, it takes away any demonstration of what falls under the universal.

Alexander’s most famous application of this aspect of the *topos* ‘from consequence’ is his refutation of Xenokrates’s doctrine that the species[-Form] is prior to genus by nature (*awwalan lahū awwaliyyatan ṭabīʿiyyatan*), because when the part is taken away the whole is taken away (*idhā mā rufīʿa l-juzʿ rufīʿa l-kull*)⁶⁵ and his commentary on *De anima* 1.1, 402b7 in *Quaestio* 1.11:

[Text 15:] For that which is predicated of certain things as their genus, when it is taken away, together with it all the things under itself are taken

62 *In Top. II*, 126–127.

63 *In Top. II*, 128,33–129,3.

64 *APo* 1.24, 85b5–14.

65 ‘Abd ar-Rahmān Badawī, *Aristū ‘inda l-ʿArab* 1 (Cairo: Maktabat an-Nahḍa al-Miṣriyya, 1947), 281–282. See on the debate and its reception and further development Marwan Rashed, “Priorité de l’εἶδος ou du γένος entre Andronikos et Alexandre: vestiges arabes et grecs inédits,” *Arabic Sciences and Philosophy* 14 (2004): 9–63 (with further literature); Robert W. Sharples, “Alexander of Aphrodisias on Universals: Two Problematic Texts,” *Phronesis* 152 (2005): 43–55; Tweedale, “Alexander of Aphrodisias’ Views on Universals,” 294–297. The Arabic translator of the *Topics* Abū ʿUthmān ad-Dimashqī also translated Alexander of Aphrodisias, *Quaestio* 1.11a. He is therefore well acquainted with the aporia resulting from *De anima* 1.1, 402b7 and the debate on its solution.

away, but is not [itself] taken away together with any one of these when they are taken away, wherefore it is first by nature (τὸ μὲν γὰρ ὡς γένος τινῶν κατηγορούμενον ἀναιρούμενον συναναιρεῖ αὐτῷ πάντα τὰ ὑφ' αὐτό, ὣν οὐδενὶ ἀναιρουμένων συναιρεῖται, διὸ πρῶτον τῇ φύσει). (*Alexandri Aphrodisiensis praeter commentaria scripta minora: Quaestiones—De fato—De mixtione*, CAG, Suppl. vol. 11.2, Berlin: Reimer, 1892, 23,11–13; trans. Robert W. Sharples, *Alexander of Aphrodisias: Quaestiones 1.1–2.15*. London: Bloomsbury Academic, 1992, 52, modified).⁶⁶

3.3 Topics 11.5: *From the Consequence of Existence* (luzūm al-wujūd/ ἡ τοῦ εἶναι ἀκολουθῆσις)⁶⁷ to Semantic Entailment

Topics 11.5, 112a16–21 transfers the *topos* from establishing and destroying (*Topics* 11.4, 111b17–23) to semantic entailment:

[Text 16:] Also, everyone who says something, whatever this may be, has said in some way many things, because each thing out of necessity has many things consequent upon it (*lawāzim*/ ἀκόλουθα). E.g. who says ‘human exists’ has said that (*inna*/ ὅτι) animal exists, and that animate exists, and that receptive of knowledge exists, and that two-footed exists. And whichever of the things consequent upon it out of necessity, when it is taken away, together with it also the first fact is taken away (*fa-ayyu shay'in mina l-lawāzim idhā rtafa'a irtafa'a ma'ahū ayḍani l-amru l-awwalu*/ ὥστε ὅποιον ἐνὸς τῶν ἀκολουθῶν ἀναιρεθέντος ἀναιρεῖται καὶ τὸ ἐν ἀρχῇ). (*Topics* 11.5, 112a16–21; arab. trans. Abū 'Uthmān ad-Dimashqī, ed. Farīd Jabr, *an-Naṣṣ al-Kāmil li-Manṭiq Aristū*, vol. 2, 685).

Alexander of Aphrodisias comments that this *topos* is the same as the *topos* “destructive from consequence” (ἐξ ἀκολουθίας ἀνασκευαστικῶ) mentioned before,⁶⁸ and that the “many things [necessarily] following” and said “in some way” are said “potentially” whenever something is said, and further, that these are “the definition of the thing said, its genus, its species-producing⁶⁹ differentia and its propria” (τόν τε γὰρ ὀρισμὸν τοῦ πράγματος τοῦ λεγομένου δυνάμει λέγει ὁ τὸ πρᾶγμα λέγων καὶ τὸ γένος αὐτοῦ καὶ τὰς εἰδοποιούς αὐτοῦ διαφοράς καὶ

66 For the immediate continuation of this quote see below § 4.1.1 (text 19).

67 For the term *luzūm al-wujūd*/ τοῦ εἶναι ἀκολουθῆσις see below § 4.

68 Alexander of Aphrodisias, *In Top.* 11, 172,25–26. The *topos* mentioned before to which he refers is the *Topics* 11.4, 111b17–23 (§ 3.1, text 8 above).

69 The term εἰδοποιός is translated by Abū 'Uthmān ad-Dimashqī in *Top.* 143b7 by the term *muḥdithu naw'in*.

τὰ ἴδια).⁷⁰ According to this comment, the term *lawāzim*/ἀκόλουθα (sing. *lāzim*/ἀκόλουθον) here refers to definition, genus, specific difference and propria as the potentially co-signified logical implicates of things uttered in language. The causal relations between something said and its potentially co-signified logical implicates fall under those types of predicables that are relevant for demonstration, excluding predicates which may follow always, but are irrelevant for establishing or destroying a hypothetically posited subject.

However, given that the *topos* “from consequence” seeks either the sufficient condition and cause of the existence of the posited thing, or a necessary condition and cause of the existence of the posited thing, *or* a thing for whose existence the existence of the posited thing is the sufficient condition and cause,⁷¹ the term “following [by necessity], consequent” (*lāzim*/ἀκόλουθον) upon the existence of something extends to all of these conditions and causes which then are potentially said and thus logically implied in any significant linguistic expression. Also taking into account Philoponus’s explanation of ‘the hypothetical,’ Aristotle’s *topos* of semantic entailment does not only refer to conditions and causes which can be subsumed under the predicables definition, genus, specific difference and proprium, but extends to implicates which are neither part of the essence of a thing nor follow from its essence, but are necessary causes and conditions of its existence.

The term “following [by necessity], consequent” (*lāzim*/ἀκόλουθον) then also here extends to all kinds of implicates of the existence of a thing relevant for establishing and destroying a hypothesis and for scientific demonstration. This wider, inclusive meaning of the term “following [by necessity], consequent” (*lāzim*/ἀκόλουθον) in the logical sense of an implicate is also attested in *Cat-egories* 12 and 13.

4 *Categories* 12 and 13: Non-Reversibility and Reversibility with Regard to the Consequence of Existence (*fī luzūm al-wujūd*/κατὰ τὴν τοῦ εἶναι ἀκολούθησιν) in Cases of Priority and Posteriority and in Cases of Concomitance

Categories 12 and 13 connect the aspects priority and posteriority and of concomitance dealt in *Cat.* 7 from the aspect of ‘taking away’ with the question of reversibility and non-reversibility of the “consequence of existence.”

⁷⁰ Alexander of Aphrodisias, *In Top.* II, 173,4–6.

⁷¹ See above § 3.1.

4.1 Categories 12: *Non-Reversibility and Reversibility with Regard to the Consequence of Existence in Cases of Priority and Posteriority*

Cat. 12 distinguishes five ways in which things are said to be prior (*mutaqaddim*/πρότερον) to something else. Two of these ways are related to “the consequence of existence”:⁷²

- (1.) priority by time (*bi-z-zamān*); example: a thing older or more ancient than another;
- (2.) the priority of what is *not* reversible in mutual correspondence—i.e. not reciprocal—with regard to the consequence of existence (*mā lā yarji’u bi-t-takāfu’ fī luzūm al-wujūd*/τὸ μὴ ἀντιστρέφον κατὰ τὴν τοῦ εἶναι ἀκολούθησιν):

[Text 17:] An example for this is that one is prior to two, because the two, when (*matā*) they exist, by their existence follows the existence of the one. And if (*in*) the one exists, the existence of the two is not necessary. So the consequence of the existence of the two (*luzūm wujūd al-ithnayn*) is not reversible in mutual correspondence from the existence of the one. (14a28–32). (*Categories* 12, 14a28–32; Arab. trans. Ishāq b. Hunayn, ed. Farīd Jabr, *an-Naṣṣ al-Kāmil li-Mantiq Aristū*, vol. 1, 88).

- (3.) the priority with regard to the order (*fī l-martaba*/τάξις) as in the sciences and in [the art of] speeches, since in the demonstrative sciences there is the prior and the posterior according to the order; examples: [in geometry] the elements are prior to the drawn constructions; in the art of writing letters are prior to the alphabet; likewise in [the art of speech] the proem is prior to the diegesis;
- (4.) the priority with regard to nature (*fī t-ṭab’*) according to opinion (*ẓann*); least proper way of speaking of priority; example: what is better and more respectable;
- (5.) the priority of something prior by nature (*mutaqaddim bi-t-ṭab’*/πρότερον ... φύσει) in the proper sense:⁷³

[Text 18:] The cause among two things which are reversible in mutual correspondence with regard to the consequence of existence, from whatever [causal] aspect this may be, is the cause of the existence of some-

⁷² *Categories* 12, 14a24–14b23; Arab. trans. by Ishāq b. Hunayn, ed. by Farīd Jabr, *an-Naṣṣ al-Kāmil li-Mantiq Aristū*, vol. 1, 88–90.

⁷³ Cf. also *Met.* 1059b30 for priority by nature explained by the impossibility of συναναιρεῖν (*irtifā’*).

thing else. And thus it is necessary to say that it is prior by nature (*inna s-sababa mina sh-shay’ayni lladhayni yarji’āni bi-t-takāfu’ fī luzūmi l-wujūdi ‘alā ayyi jihatīn kāna sababan li-wugūdi sh-shay’i l-ākharī fa-l-wājibu yuqālū innahū mutaqaaddimun bi-t-ṭab’* / τῶν γάρ ἀντιστρέφοντων κατὰ τὴν τοῦ εἶναι ἀκολούθησιν τὸ αἴτιον ὅπως οὖν θατέρῳ τοῦ εἶναι πρότερον εἰκότως φύσει λέγοιτ’ ἂν). (14b11–13).

[Example:] If man exists, then the speech ‘man exists’ is true. This is reversible in mutual correspondence with regard to the consequence of existence (*yarji’u bi-t-takāfu’ fī luzūm al-wujūd* / ἀντιστρέφει κατὰ τὴν τοῦ εἶναι ἀκολούθησιν). Since, if the speech ‘man exists’ is true, then man exists, save that the true speech cannot be the cause of the existence of the fact (*as-sabab li-wujūd al-amr* / αἴτιος τοῦ εἶναι τὸ πρᾶγμα), but rather that which makes evident that the fact is in some way a cause of the truth of the speech (*alladhī yuzhīru anna l-amra sababun ‘alā jihatīn mina l-jihātī li-ṣidqi l-qawl* / τὸ μέντοι πρᾶγμα φαίνεται πως αἴτιον τοῦ εἶναι ἀληθῆ τὸν λόγον). It is because of the existence of the fact or because of its non-existence that one says the speech is true or false. (*Categories* 12, 14b14–22; Arab. trans. Ishāq b. Hunayn, ed. Farīd Jabr, *an-Naṣṣ al-Kāmil li-Manṭiq Aristū*, vol. 1, 89–90).

The second and the fifth kind of priority are relevant for the *topoi* of establishing and destroying and for demonstrations of the fact *and* of the reasoned fact.

4.1.1 The Second Kind of Priority: Priority of What Is *Not* Reversible with Regard to the Consequence of Existence

In the case of the second kind of priority the non-reversibility of the consequence of existence is based on the principle that the many presuppose the one, the compound the simple, the whole the part, but not vice versa, since the part is prior to the whole, and when the part is taken away the whole is taken away, but not vice versa. This kind of priority is hence useful for destroying, as Aristotle explained *Topics* II.4, 111b17–23.⁷⁴

Xenokrates refers to this kind of priority with his doctrine that when the species is taken away, together with it the genus is taken away, because when the part is taken away the whole is taken away. In agreement with *Categories* 13, 15a4–5: “The genera are always prior to the species,” Alexander of Aphrodisias replies to Xenokrates’s argument by explaining the posteriority of the genus as

74 See above § 3.1.

its being posterior *to us* in contrast to its being prior *in nature* in *Quaestio* 1.11 on *De anima* 1.1, 402b7:⁷⁵

[Text 19:] But in those [matters] in which the prior and the posterior exist, [destroying from the consequence of existence works in this way:] when the first which contains the thing signified by it is taken away, together with it the thing signified by it is taken away, wherefore it [sc. the thing signified by the first] does no more occur first, but posterior (τὸ δ' ἐν οἷς τὸ πρότερον καὶ τὸ ὕστερόν ἐστιν, ἀναιρουμένῳ τῷ πρώτῳ ἔχοντι τὸ ὑπ' αὐτοῦ σημαζόμενον συναίρεται, διὸ οὐκέτι πρῶτον ἀλλ' ὕστερον γίνεται). (*Alexandri Aphrodisiensis Praeter Commentaria Scripta Monora: Quaestiones, De fato, De mixtione*. CAG, Suppl. vol. 2, Berlin: Reimer, 1892, 23,13–16).

“The first which contains the thing signified” is here the sign (σημεῖον/ *dalīl*) which signifies the genus contained in its meaning and definition. The genus is prior in nature to the first, but is recognized posterior to it. Applying the *topos* ‘from consequence’ this is establishing in the way: if the first [which is prior and better known to us], then the second [which is prior by nature, but posterior known to us]. The first is *prior to us* and the sufficient cause for establishing the recognition and *knowledge of the fact* that the second exists.⁷⁶ The second is a necessary condition for the *knowledge of the reasoned fact* that the first exists and *prior in nature* to it, but posterior known to us.

E.g., the mental or extramental existence of (a) man is a sign for the existence of animal (ζῷον), since animal is contained in the meaning signified by (a) man, not only in the sense that the genus ‘animal’ is part of the meaning signified by the linguistic expression ‘man,’⁷⁷ but also in the sense that the extramental existence of (a) man signifies the extramental existence of (an) animal. From this aspect ‘man’ is prior to ‘animal,’ and the recognition and knowledge that animal exists is posterior to man and taken away together with man when man is taken away.

This is *not* reversible in mutual correspondence—in other words not reciprocal—with regard to the consequence of existence, because the second is not the sufficient cause for establishing the first, but only something the first is “containing” (ἔχοντι) as a necessary condition and cause of the intra-

75 The following quote is the immediate continuation of the quote from Alexander, *Quaestio* 1.11, cited above § 3.2 (text 15).

76 See above § 3.1 (texts 8 and 9).

77 Cf. § 3.3 above.

mental and extramental existence of man: ‘if man exists, then animal exists,’ but not: ‘if animal exists, then man exists.’⁷⁸ This said, in the latter example the first is not a sign (σημείον/ *dalīl*) in the sense of a τεκμήριον/ *dalīl*, but only in the sense of an εἰκός/ *alāma*, because it is wider in extension than the first.⁷⁹

In the Preface of his Commentary on the *Prior Analytics* Alexander of Aphrodisias subsumes the second kind of priority under the fifth and formulates the rule on which his refutation of Xenokrates is based:

[Text 20:] We have learnt also in the *Categories* that such things are prior by nature to others if they follow when the others are posited, but are not reversible with regard to the consequence of existence (μεμαθήκαμεν γὰρ καὶ ἐν ταῖς Κατηγορίαις, ὅτι ἐστὶ πρότερα τῇ φύσει τὰ μὴ ἀντιστρέφοντα κατὰ τὴν τοῦ εἶναι ἀκολουθίαν ἐκείνοις, οἷς τεθεῖσαν αὐτὰ ἔπεται). Genera are things of this sort. This is because every genus is prior by nature to each of the species which fall under it. For if a species is posited (τεθέντι), the genus must necessarily follow, whereas the species does not follow the genus. Similarly with species in relation to the things of which they are species. Species are prior. (*Alexandri Aphrodisiensis in Aristotelis analyticorum priorum librum 1 commentarium*, 6,34–7,5; trans. Jonathan Barnes, Susanne Bobzien, Kevin Flannery and Katerina Ierodiakonou, *Alexander of Aphrodisias: On Aristotle Prior Analytics 1.1–7*. London: Bloomsbury Academic, 2013, 49, slightly modified).

This is the *modus ponendo ponens* in connection with the *modus tollendo tollens* in the case in which the consequent is not the sufficient cause of the antecedent, but only a necessary cause and condition, and thus “not reversible with regard to the consequence of existence”:

‘if p, then q’ if and only if ‘if not q, then not p,’ but not ‘if q, then p.’

78 Cf. also Philoponus § 3.1 above (text 13).

79 The Arabic term *dalīl* translating σημεῖον (‘sign’) is used in the same way as the Greek term, in a wider sense which divides in the narrower sense of σημεῖον/ *dalīl*, i.e. ‘[necessary] sign’ (τεκμήριον/ *dalīl*), and ‘[probable] sign’ (εἰκός/ *alāma*). On the theories of the commentators on σημεῖον, τεκμήριον, εἰκός see Donald Morrison, “Tekmeriodic Proof: Philoponus and Simplicius on Tecmeriodic Proof,” in *Method and Order in Renaissance Philosophy of Nature: The Aristotle Commentary Tradition*, ed. by Daniel A. Di Liscia, Eckhard Kessler and Charlotte Methuen (Aldershot, e.a.: Ashgate, 1997), 1–22.

4.1.2 The Fifth Kind of Priority: Priority of What Is Reversible with Something Prior by Nature (*mutaqaddim bi-t-ṭabʿ* / πρότερον ... φύσει)

In the case of the fifth kind of priority the reversibility of that which is predicable in mutual correspondence (*bi-t-takāfīʿ* or *bi-t-tasāwī* / ἀντιστρέφόντων)⁸⁰ with regard to the consequence of existence is grounded in the principle of the togetherness of sufficient cause and effect, and the priority by nature is grounded in the principle that the cause of existence is prior by nature to the effect, whereas the cause of the recognition is prior ‘to us.’ A reversal in mutual correspondence of antecedent and consequent in the *topoi* “from consequence”⁸¹ hence is equivalent to the reversibility of an analytical syllogism in which the middle term is the cause of the truth of the conclusion only⁸²—the *ratio cognoscendi*, a demonstration of the fact (*burhān anna* / τὸ ὅτι) or a *dalil* (τεκμήριον)—into a synthetical syllogism in which the middle term signifies not only the cause of the truth of the conclusion, but also the cause of the fact signified in the conclusion (*burhān limā* / τὸ διότι). Aristotle explains this at *Posterior Analytics* 1.13, 78a30–39–78b4 with the example of the reversibility of the middle term (cause of recognition/effect in existence) and the major term (cause of existence/effect in recognition). The demonstration of the fact ‘The planets do not twinkle, what does not twinkle is near, therefore the planets are near,’ is “predicable in mutual correspondence” (*tuḥmalu bi-t-tasāwī* / ἀντιστρέφόντων) and thus reversible into an explicative demonstration of the reasoned fact: ‘The planets are near, what is near does not twinkle, therefore the planets do not twinkle.’

4.2 Categories 13: *Reversibility of What Is Concomitant by Nature with Regard to the Consequence of Existence*

Cat. 13 distinguishes three ways in which two things are said to be “together,” (*maʿan* / ἄμα), in other words, “concomitant.”⁸³ Two of these ways are explicitly related to the “consequence of existence”:

(1.) “together in time” (*maʿan fī z-zamān* / κατὰ χρόνον), i.e. “simultaneous in time,” is ‘together’ absolutely (*ʿalā l-iṭlāq* / ἀπλῶς);⁸⁴

80 ἀντιστρέφόντων: Cat. 12, 14b11 (trans. Iṣḥāq b. Ḥunayn: *bi-t-takāfīʿ*); cf. APo 1.13, 78a27 (trans. Abū Bishr Mattā: *bi-t-tasāwī*).

81 See above §3.

82 In Ibn Sīnā’s terminology, the middle term in this case is the cause of the acknowledgment of the truth (*taṣdīq*) of the conclusion.

83 Categories 13, 14b24–15a11; Arab. trans. Iṣḥāq b. Ḥunayn, ed. Farīd Jabr, *an-Naṣṣ al-Kāmil li-Mantiq Aristū*, vol. 1, 91–92.

84 Cat. 13, 14b24–25; 15a10–11; Arab. loc. cit.

(2.) “together by nature” (*ma‘ān bi-ṭ-ṭab* / φύσει δὲ ἅμα), in other words ‘concomitant by nature’. The latter is divided into two kinds:

[Text 21:] Those [things] of which one says that they are together by nature are

[2.a] those [things] which are reversible by mutual correspondence with regard to the consequence of existence, and on no account is one of the two things a cause for the existence of the other (*wa-laysa wāḥidun minā sh-shay‘ayni sababan aṣlan li-wujūdi l-ākhar* / μηδαμῶς δὲ αἴτιον τὸ ἕτερον τῷ ἑτέρῳ τοῦ εἶναι ἐστίν), and

[2.b] those [things] which are, one of them for the other, co-partners of one genus (*Categories* 13, 15a7–10; Arab. trans. Ishāq b. Ḥunayn, ed. Farīd Jabr, *an-Naṣṣ al-Kāmil li-Manṭiq Aristū*, vol. 1, 92).

(2.a) “together by nature” without one of the two being the cause of the other and being reversible in mutual correspondence with regard to the consequence of existence. This first kind of concomitance by nature is the way in which the existence of correlatives depends on each other treated at *Categories* 7 from the aspect of the method of ‘subtraction,’ ‘being taken away’:⁸⁵

[Text 22:] ‘Together by nature’ is said of two things, when they are reversible in mutual correspondence with regard to the consequence of existence and on no account is one of the two a cause for the existence of the other (*idhā kānā yarji‘āni bi-t-takāfu’ fī luzūmi l-wujūdi wa-lam yakun aḥaduhumā sababan aṣlan li-wujūdi l-ākhar* / φύσει δὲ ἅμα ὅσα ἀντιστρέφει μὲν κατὰ τὴν τοῦ εἶναι ἀκολούθησιν, μηδαμῶς δὲ αἴτιον θάτερον θατέρῳ τοῦ εἶναι ἐστίν). This is, e.g., double and half. These are reversible by mutual correspondence. That is to say, when the double exists, then the half exists, and when the half exists, then the double exists. And none of the two is a cause for the existence of the other. (*Categories* 13, 14b27–32; Arab. op. cit. vol. 1, 91).

(2.b) “together by nature” without one of them being prior or posterior to the other.

This second kind of concomitance by nature is said of things which are “by one and the same division” (*bi-taqṣīm wāḥid* / κατὰ τὴν αὐτὴν διαίρεσιν):

85 See above § 2.3 (text 5, with the same example of double and half).

[Text 23:] ‘Together by nature’ is said of those [things] which are co-partners, one of them for the other, of one genus. E.g. the flying is a co-partner of the walking and the swimming, since these are co-partners, one of them for the other, of one genus. This is to say, the living being (*al-ḥayy*/ τὸ ... ζῷον) divides in these, namely in the flying [living being], the walking [living being] and the swimming [living being]. And on no account is one of them prior or posterior; rather what is like these is opined (*maznūn*) to be together by nature. And it is possible that each of these is further divided into species, e.g. the walking animal (*al-ḥayawān al-mashshā*),⁸⁶ the flying [animal] and the swimming [animal] [is further divided into species], and these are also together by nature, namely those things which belong to one and the same genus by one and the same division.

But the genera are always prior. That is to say, they are not convertible by mutual correspondence with regard to the consequence of existence. E.g. when the swimming [living being] exists, then the living being exists. And when the living being exists, then it is not necessary that the swimming [living being] exists. (*Categories* 13, 14b32–15a7; Arab. op. cit. vol. 1, 91–92).

The (2.b) being ‘together by nature’ of the species of one and the same genus and co-partners “by one and the same division” is not explicitly said to be ‘reversible in mutual correspondence with regard to the consequence of existence.’ It seems what is meant here is proof by contraposition, e.g. ‘assume this animal is not a walking animal, then it is either a flying or swimming animal,’ where the division of ‘animal’ is by animal progression. Or, e.g., ‘assume this triangle is not isosceles, then it is either scalene or equilateral,’ or ‘assume this number is not even, then it is odd.’ The existence of a flying or swimming animal follows from the existence of a non-walking animal; the existence of either a scalene or an equilateral triangle follows from the existence of a non-isosceles triangle; the existence of an odd number follows from the existence of an uneven number.

The consequence of existence here refers to opposite *per se* properties or accidents following necessarily upon the existence of their common genus or species. The opposite properties or accidents are considered *qua* (قُلُوبُ/ *min ḥaythu*) belonging to a particular subject.

86 In the Arabic translation *al-ḥayawān* is interpolated, perhaps it stems from a marginal note clarifying that ζῷον here means ‘animal.’

5 Al-Fārābī’s *Analysis* (*K. at-Taḥlīl*): The Correct and the Erroneous Use of ‘the *topoi* of Existence and Being Taken Away’ (*al-wujūd wa-l-irtifā‘*) and the Function of the *topos* in Aristotle’s *Posterior Analytics*

In his major and minor book on the *Syllogism* and in his book on *Analysis*⁸⁷ al-Fārābī deals with the method (*tarīq*) or *topoi* (*mawāḍī‘*) of “existence and being taken away” (*al-wujūd wa-l-irtifā‘*) with explicit reference to the passages quoted above from *Categories* 7 and 12 and from *Posterior Analytics* 1.5. In his *Analysis* he explains the correct and the erroneous use of this *topos* and its function in the *Posterior Analytics*. In his paraphrase on the *Categories* he expounds a comprehensive division of these *topoi*. He introduces the *Analysis* with the following scope:

[Text 24:] We must now say how we find the syllogism for each assumed sought-after (*qiyāsu kulli maṭlūbin yufraḍu*) in whatever art (*ṣinā‘a*) it may be, from where one acquires them, and from which things we take the premisses of every syllogism looked for [in order to establish or to explain] the [assumed] sought-after. The way which first of all leads to this is by [way of] the recognition of the *topoi* (*mawāḍī‘*) ... (al-Fārābī, *K. at-Taḥlīl*, ed. Rafiq al-‘Ajam, *al-Manṭiq ‘inda l-Fārābī* 11, 95,3–5).⁸⁸

Among the *topoi* is the *topos* Alexander of Aphrodisias designated as the *topos* ‘from consequence’:⁸⁹

[Text 25:] Among these are the *topoi* (*mawāḍī‘*) taken from the consequents (*min al-lawāzīm*), and these are the *topoi* of existence and being taken away (*al-wujūd wa-l-irtifā‘*). That is to say that we consider each single of two [hypo-] theses (*min al-waḍ‘ayn*) and think about [a.] ‘what is the thing by whose existence the [hypo-] thesis (*waḍ‘*) exists,’ or [b.] ‘what is the thing which exists by the existence of the [hypo-] thesis (*waḍ‘*).’ (al-Fārābī, *K. at-Taḥlīl* 102,4–6).

87 al-Fārābī, *K. al-Qiyās*, *K. al-Qiyās aṣ-Ṣaghīr*, and *K. at-Taḥlīl*, in *al-Manṭiq ‘inda l-Fārābī* 11, ed. by Rafiq al-‘Ajam (Beirut: Dār al-Mashriq, 1985), 11–64; 65–93; 95–129. Cf. also al-Fārābī, *K. al-Burhān wa-Sharāḥ al-Yaqīn*, ed. by Majid Fakhry (Beirut: Dār al-mashriq, 1987), 39,17–40,2.

88 This is the introduction of the treatise on *Analysis*. See the full translation of this introduction by Ahmed Hasnawi, “Topic and Analysis: The Arabic Tradition,” in *Whose Aristotle? Whose Aristotelianism?*, ed. by Robert W. Sharples (Aldershot e.a.: Ashgate, 2001), 30–31.

89 Cf. above § 3 (text 9).

This is nearly a literal translation of *Topics* 11.4, 11b17–18 with few modifications.

One modification is that instead of *προκείμενον* (lit. “what is lying before us”) in Aristotle’s text—translated by Abū ‘Uthmān ad-Dimashqī by the term *mawḍū’* (lit. “the posited”), al-Fārābī uses the term ‘[hypo-] thesis’ (*waḍ’*) to refer to “the assumed sought-after” (*maṭlūb yuḥraqū*), in other words the *assumed quaesitum* (ζητούμενον).⁹⁰

The term *waḍ’* needs clarification. In his *Topics* (*K. al-Jadal*) al-Fārābī lists seven senses of the term *waḍ’* of which he says that it is a homonym (*ism mushtarak*). Two of these are of interest for the present context:

[Text 26:] [1.] The hypothetical premiss (*al-muqaddama ash-shartīyya*) is also denoted as a thesis (*waḍ’an*), and it is denoted as ‘a suppositional premiss’ (*muqaddamatan waḍ’īyyatan*). And the argument (*qawl*) in which it is imposed on the respondent as an obligation that ‘if a thing from a set of things (*shay’ min al-ashyā’*) is in a certain state, then the remaining things [of that set] are in that state’ is called ‘the syllogism of the hypothesis’ (*qiyās al-waḍ’*).

[2.] And always when it [sc. the thesis (*waḍ’*)] is assumed in order to seek its syllogism (*furiḍa li-yuṭlaba qiyāsuḥū*), then it is also denoted as a thesis.—All dialectical *quaesita* (*al-maṭlūbat al-jadalīyya kulluhā*) are also denoted as a thesis.—It [sc. the thesis] is more special than the *quaesita* taken in an absolute sense. (al-Fārābī, *K. al-Jadal*, 74,6–10.)

[ad 1] According to the first sentence the Arabic terms *shartī* and *waḍ’ī* both render ὑποθετικὸς in the sense of ‘suppositional’ which is confirmed by what al-Fārābī says in his *Burhān* and by the Arabic translations of Aristotle.⁹¹ But then al-Fārābī goes on to explain a special meaning of ‘syllogism of the hypothesis’

90 See above text 24.

91 “There are predicative (*hamliyya*) and hypothetical (*waḍ’īyya*) necessary premisses [...] The necessary hypotheticals are those in which the consequents of the antecedent are necessary consequents (*lawāzīm al-muqaddam fihā lawāzīm darūriyya*)”. al-Fārābī, *K. al-Burhān wa-Sharā’iṭ al-Yaqīn*, 27,18–20. Cf. Liddel & Scott, s.v. ὑπόθεσις 111. *supposition*, and *waḍ’* in the Arabic translations of Aristotle, *APo* 1.2, 72a20; 1.10, 76b23–39; *Phys.* 11.9, 199a34; 200a13 (ἐξ ὑποθέσεως/ *‘ani l-waḍ’*) and *GlossGA* s.v. ὑποτιθημι. Cf. also e.g. Ibn Sīnā, *K. ash-Shifā’*, *al-Mantiq* IV: *al-Qiyās*, ed. by Ibrāhīm Madkūr (Cairo: al-Hay’a al-‘Āmma li-Shu’ūn al-Maṭābi’ al-Amīriyya, 1384/1964), v. 4, criticizing the Stoic indemonstrables: “If it were implied from our thesis (*law kāna lāziman ‘an waḍ’inā*) that ‘every man is speaking,’ that ‘every donkey is braying’ ...” (267,6–8), “this is not in the way of consequence (*‘alā sabīl al-luzūm*) ...” (268,17–18).—The terms *shartī* (“hypothetical”) and *sharṭa* (“condition”) comprise antecedent (*muqaddam*) and subsequent (*tālī*), as al-Fārābī explains (*K. al-Qiyās aṣ-Ṣaghīr* 82–83), whereas in Arabic grammar *sharṭ* is the t.t. for the antecedent.

(*qiyās al-waḍʿ*), namely a sense which is described *Prior Analytics* I.6, where Aristotle explains ‘supposition, assumption’ (λήψις/ cf. Arab. *farḍ*) as method of ‘ex-positio’ (ἐκθεσις), i.e. “positing [one instance] out [of a set of things],” e.g. “one instance of S is taken out, such as the N” (ληφθήτι τῶν Σ οἷον τὸ Ν) (28a23–25; cf. 28b21), thereby supposing the existence of N *qua* being an instance of S, and then extending what is true for N to being true for S.

[ad 2] The next, alternative use of the term thesis (*waḍʿ*) is the one al-Fārābī applies in text 25. ‘Thesis’ here denotes an assumed sought-after (*maṭlūb*) for which one seeks the syllogism which establishes or destroys the thesis. Another testimony for starting from the assumed sought-after is al-Fārābī’s description of an indirect proof by contradiction: “When we want to conclude a thing by a syllogism by contradiction (*qiyās al-khulf*), we assume (*nafridu*) what we want to conclude. This is when we say, ‘The world is not eternal,’ and we take what is contradictory to it, that is ‘The world is eternal’ ...”⁹²

This said, the first step expounded in text 25 [a.] “what is the thing by whose existence the [hypo-] thesis (*waḍʿ*) exists” is analytical, as in geometry starting from an *assumed* or *supposed* quaesitum (*maṭlūb*) taken as [hypo-] thesis (*waḍʿ*) seeking the causes and conditions of its existence in order to establish its existence (*an yuthbita/ κατασκευάζειν*) in the way of a geometrical construction (*ʿamal/ κατασκευή*). And since the way of the second consideration [b.] “what is the thing which exists by the existence of the [hypo-] thesis (*waḍʿ*)” is the inversion of the first consideration, this consideration is analogous to the complementary way of synthesis in geometry.

The analogy between al-Fārābī’s explanation of the *topoi* (*mawāḍiʿ*) taken from the consequents and ‘constructing’ in geometry has further support by al-Fārābī’s application of the term *farḍ* which is equivalent to the term λήψις (Lat. *suppositio*, *assumptio*) in Aristotle’s *Prior Analytics* I.1 and in [pseudo-(?)] Euclid’s famous Appendix to Book XIII of Euclid’s *Elements*, which explains the way of analysis and synthesis as starting from “the assumption of the sought-after,”⁹³ and by the fact that Aristotle often uses the verb λαμβάνειν in the meaning of “to suppose, to assume.”

92 Al-Fārābī, *K. al-Qiyās aṣ-Ṣaghīr*, 86,14–15.

93 This explanation is perhaps a later insertion which does not go back to Euclid himself: ἀνάλυσις μὲν οὖν ἐστὶ λήψις τοῦ ζητουμένου ὡς ὁμολογουμένου διὰ τῶν ἀκολουθῶν ἐπὶ τι ἀληθὲς ὁμολογούμενον (“analysis is the assumption of the [thing] sought, as if conceded, through the consequences, up to something conceded as true”). Euclides, *Euclidis Opera omnia* ediderunt I. Heiberg et H. Menge, Vol. 4: *Euclidis Elementa*, Librum XI–XIII edidit et latine interpretatus est by I.L. Heiberg (Leipzig: Teubner, 1885), 364,18–20 (Appendix I.8, Ad. libr. XIII prop. 1–5); Engl. trans. and commentary Enrico Berti, “Aristotle and Greek Geometri-

Further, at the beginning of his *Analysis* (*K. at-Taḥlīl*) a few pages before, al-Fārābī had explained that regarding each [hypo-] thesis (*waḍʿ*) the task is either to establish it (*ithbātahū*) by concluding exactly the [hypo-] thesis (*waḍʿ*), or to destroy it (*ibtālāhū*) by concluding its opposite (*muqābilahū*). To this goal, he says, in the first step we dissolve the [hypo-] thesis into its subject and its predicate.⁹⁴

This means that—from the *logical* point of view—in the [hypo-] thesis ‘s exists’ (*s mawjūd*) ‘existence’ (*wujūd*) is predicated (*maḥmūlan*) of the subject s,⁹⁵ whereas in a [hypo-] thesis in the form ‘s is p’ (*p mawjūd li-s* or *fī s*, lit. “p exists for s” or “p exists with regard to s”) ‘exists’ (*mawjūd*) is the copula (*rābiṭa*). These *topoi* then are not only useful for answers to the simple ‘whether it is’ question (*hal basīt*), but also for answers to the compound ‘whether something is something’ (*hal murakkab*) or ‘which kind of thing is it’ (*ayyu shayʿin*) question. And since the *topos* ‘from consequence’ seeks answers to these questions by providing the cause for something’s being something or having something, these *topoi* are also tools for answers to the ‘what is it’ (*mā huwa*) and the ‘because of which’ (*limā*) questions.

Another modification is that al-Fārābī speaks of ‘topoi’ (*mawāḍiʿ*) instead of one *topos* as Aristotle and instead of one ‘twofold’ *topos* as Alexander, and that al-Fārābī designates the *topoi* as being “from the consequents” (*lawāzim*), while Alexander says it is ‘from consequence’ (ἐξ ἀκολουθίας).⁹⁶ In his book on *Analysis* al-Fārābī divides the *topos* according to kind (*ḍarb*) and mode (*jīha*),

cal Analysis,” *Philosophia Scientiae* 26.3 (2021): 9 (Engl. trans. modified). Cf. also the quote from Heron of Alexandria in an-Nayrīzī’s commentary on Euclid’s *Elements* discussed by Enrico Berti, loc. cit. 11.—It is worth noting that Theodorus’s Arabic translation of *Prior Analytics* 1.1 does not use *farḍ* for the Greek term λήψις, but that the Arabic translation of Book I and II of Euclid’s *Elements*, ascribed to Ṭābit b. Qurra (d. 288/901) and Iṣḥāq b. Ḥunayn (d. 298/911), frequently uses the Arabic verb *faraḍa* and its derivate *mafrūḍ*.

94 al-Fārābī, *K. at-Taḥlīl* 96,1–2.

95 Regarding the question whether ‘existence’ is a predicate or not, [pseudo(?)] al-Fārābī distinguishes two considerations, the natural (*ṭabīʿī*) and the logical (*manṭiqī*). The natural way of comprehension is that existence is not a predicate, “since the existence of a thing, is nothing else than the thing.” But from the logical point of view, a speech like “man exists” (*al-insān mawjūd*) “is composed from two words which are its parts [viz. the parts of a proposition (*qaḍīyya*)] which admit truth and falseness.” And from this point of view existence is a predicate. Al-Fārābī, *Jawābāt li-Masāʾil Suʿila ʿanhā*, in al-Fārābī: *al-Aʿmāl al-Falsafīyya*, part 1, ed. by Jaʿfar Āl Yāsīn (Beirut: Dār al-Manāhil, 1413/1992), 324–325 (§16). The natural way refers to first substances, that is individuals, since “the first substances which are the individuals do not need anything else except themselves for their existence.” Loc. cit., 323,1–2 (§14). On the issue see Steven Menn, “Al-Fārābī’s Kitāb al-Ḥurūf and his Analysis of the Senses of Being,” *Arabic Sciences and Philosophy* 18 (2008): 59–97.

96 Cf. above §3.1.

and in his paraphrase on the *Categories* he gives a general division of the *topos* according to the different ways of consequents.⁹⁷ Given this, we can suppose that the division of the consequents should take up the loose end and fill the gap left by Aristotle who announced *Prior Analytics* 44, 50a39–50b4 to explain regarding the syllogisms “from a hypothesis” (ἐξ ὑποθέσεως/ *an sharīṭa*) “which one does not resolve into the [syllogistic] figures,” “what are the distinctive features of these hypothetical syllogisms, and in how many modes do they occur” (*mā fuṣūlu hādhihī l-maqāyisi sh-sharṭiyyati wa-‘alā kam jihatīn takūnu*),⁹⁸ but never did.

After the modified quote from Aristotle, *Topics* 11.4, 11b17–18 (text 25 above), al-Fārābī proceeds with the explanation of ‘the *topoi* taken from the consequents.’ He starts with a transformation of Aristotle’s *topos* into the later so called modi *ponendo ponens* and *tollendo tollens* and then explains how, in Aristotle’s words, the *topos* is useful for the one who seeks to establish or to destroy,⁹⁹ first regarding [hypo-]theses in the kind (*ḍarb*) ‘p exists,’ in other words ‘p is existent,’ that is, theses answering to the simple ‘whether-it-is’ question, then regarding [hypo-]theses in the kind ‘s is p,’ that is, theses answering to the compound ‘whether-something-is-something’ question.

5.1 *The Division of the topos ‘from Consequents’ into the Later So-Called modus ponendo ponens and modus tollendo tollens*

[Text 27:] And whichever of these two [things] we come upon (*ṣādaf-nāhu*), we take it.

[a] And if the thing we come upon is the thing by whose existence the [hypo-] thesis (*waḍʿ*) exists, we posit (*jaʿalnā*) that thing. It is the antecedent (*muqaddam*), and the [hypo-] thesis is the subsequent (*tālī*). And we add the exception of the antecedent (*wa-nastathnī bi-l-muqaddam*), and then we conclude exactly the [hypo-] thesis as it is (*al-waḍʿ kamā huwa bi-ʿaynihī*), may it be [a.1] affirmative or [a.2] negative. This is in the first kind (*ḍarb*) of the conjunctive hypotheticals (*ash-sharṭiyya al-muttaṣila*).

[b] And if the thing we find existent (*wajadnāhu*) is the thing which exists by the existence of the [hypo-] thesis, we posit (*jaʿalnā*) that [hypo-] thesis. It is the antecedent, and the thing we came upon (*al-muṣādaf*)

97 See below § 6.

98 Arab. trans. by Tadhārī (Theodorus), *an-Naṣṣ al-Kāmil li-Mantiq Aristū*, ed. by Farīd Jabr, vol. 1, 316. On the dating of the translation and the identity of Tadhārī see Joep Lameer, *Al-Fārābī and Aristotelian Syllogistics* (Leiden: Brill e.a., 1994), 3–5.

99 Cf. above § 3 (text 8).

is the subsequent. And we add the exception of the opposite of the subsequent (*wa-nastathnī bi-muqābil at-tālī*)—and this is the opposite of the thing we came upon—and then we conclude the opposite of the [hypo-] thesis. And this is the other part coupled together with it [viz. with the first kind (*ḍarb*) of the conjunctive hypothetical syllogism] with regard to the sought-after (*wa-huwa l-juz'u l-ākharu l-maqrūnu bihī fī l-maṭlūb*). (al-Fārābī, *K. at-Taḥlīl* 102,6–12).

First, the term *wa-nastathnī bi-* needs further clarification. In his short paraphrase of the *Prior Analytics* (*K. al-Qiyās aṣ-Ṣaghīr*) al-Fārābī explains that “the minor premiss [of a hypothetical syllogism (*qiyās shartī*)] is a categorical (*jazmiyya*) [premiss] to which is connected an exception particle (*ḥarf al-istithnā*), and exactly this one of the two parts of the hypothetical statement is denoted as ‘the added exception’ (*al-mustathnā*). And sometimes the antecedent is added as an exception, and sometimes the subsequent is added as an exception (*wa-qad yustathnā l-muqaddam wa-yustathnā t-tālī*).”¹⁰⁰ The so-called ‘exception particle,’ specified by al-Fārābī a few lines later as the particle *lākin* (“but, however”),¹⁰¹ is equivalent to the Greek particle *δέ* (“but”) or *ἀλλὰ μὲν* (“but now,” cf. texts 11 and 12 above) in function of a particle posited to shift the attention to something newly appearing and introducing a new person or a new aspect to an antecedent speech. There is no indication that al-Fārābī understands this second premiss in Stoic hypothetical arguments (*λόγοι*) in the sense of an ‘additional *supposition*’ or ‘co-assumption,’ as *πρόσληψις* is usually translated.¹⁰² Galen and Alexander of Aphrodisias report that the ancient or old philosophers—probably Theophrastus, Eudemus and other early Peripatetics—used the term “probative premiss” (*πρότασις δεικτική*) for the second premiss of hypothetical syllogisms.¹⁰³ And also according to Sextus Empiricus’s report of Chrysippus’s Indemonstrables at least in the first demonstrable the minor premiss does not need to be understood as an ‘assumption,’ but rather can be understood as an affirmation of a fact which is probative for the conclusion.¹⁰⁴

100 Al-Fārābī, *K. al-Qiyās aṣ-Ṣaghīr*, 83,3–5.

101 Loc. cit. 83,15.

102 See on the Stoic *πρόσληψις* Susanne Bobzien, “The Stoics,” in *The Cambridge History of Hellenistic Philosophy*, ed. by Keimpe Algra, Jonathan Barnes, Jaap Mansfeld and Malcolm Schofield (Cambridge: University Press, 1999), 121.

103 Bobzien, Susanne. “Pre-Stoic Hypothetical Syllogistic in Galen’s *Institutio Logica*.” *Bulletin of the Institute of Classical Studies* 45 (2002): 64–70 (esp. 65, n. 39).

104 Cf. Robert G. Bury’s translation “but in fact it is day” for *ἀλλὰ μὲν ἡμέρα ἔστιν*. Sextus Empiricus, *In Three Volumes*, vol. 11: *Against The-Logicians*, ed. and trans. by Robert Gregg Bury,

The Arabic version of *De interpretatione* 1, translated by Ishāq b. Hunayn from the Syriac version of Hunayn, has *yustathnā* for προστεθῆναι (“is added”) (16a15), which refers to the formal aspect.

Ibn Sīnā can help to clarify the content-related and functional aspect of the added premiss. Gyekye claimed that Ibn Sīnā “does not tell what the word *istithnā*’ itself means.”¹⁰⁵ But Ibn Sīnā does in his *Qiyās* of the *Shifā*, saying: “You must know that *al-istithnā*’ (“the exception”) is not only a supposition/assumption (*farḍ*). *Al-istithnā*’ (“the exception”) rather is an attestation/evidence of the existence and the occurrence (*huwa shahāda bi-l-wujūd wa-l-ḥuṣūl*) ...,”¹⁰⁶ and further “it is hence clear that existence is not expected regarding the antecedent (*muqaddam*) inasmuch it is an antecedent. [*Qua* antecedent] it rather is a mere assumption.”

Ibn Sīnā’s explanation of the term *istithnā*’ is in line with the context of *De int.* 16a15 where ‘the exception’ which “is added” (προστεθῆναι/ *yustathnā*) is ‘existence or non-existence’ (τὸ εἶναι ἢ μὴ εἶναι/ *wujūd aw ḡayr wujūd*). And it is also in line with Aristotle’s argument in form of the *modus ponens ponendo Metaphysics* IX.4, where ‘εἰ τοῦ A ὄντος ἀνάγκη τὸ B εἶναι’ (1047b14–15) is the hypothetical premiss, ‘τοῦ A ὄντος’ the probative premiss, and ‘ἀνάγκη εἶναι τὸ B’ (1047b24) the conclusion.

Moreover, Ibn Sīnā explains that one has to distinguish between an antecedent which is in itself true (*ḥaqqaṇ fī nafsihī*) and an antecedent which is true according to a certain assumption (*ḥaqqaṇ bi-ḥasabi farḍin mā*).¹⁰⁷ An antecedent which is in itself true is e.g. the antecedent of the hypothetical premiss “if every donkey brays, then every man speaks.” Here also the subsequent (*tālī*) is in itself true (*fī nafsihī*). “To concede the hypothetical premiss here does not have the meaning of consequence (*luzūm*). It rather means that the second state of affairs is true in existence together with the first state of affairs which is either existent or assumed without a consequence following from it (*mawjūd aw mafrūḍ min ḡhayri luzūm ‘anhu*). It is rather true in itself.”¹⁰⁸ The truth of the antecedent together with the truth of the subsequent in this case is a mere coincidence (*ittifāq*).¹⁰⁹—Ibn Sīnā here distinguishes between grammatical antecedent and subsequent (*ash-sharṭ wa-l-jazā’*) and logical impli-

Loeb classical library (London: William Heineman/ Cambridge, Mass.: Harvard University Press, 1935), II.224 (p. 354–355).

105 Kwame Gyekye, “The Term *Istithnā*’ in Arabic Logic,” *Journal of the American Oriental Society* 92 (1972): 90b.

106 Ibn Sīnā, *K. ash-Shifā*, *al-Manṭiq* IV: *al-Qiyās*, v. 4, 269,11–12.

107 Loc. cit. 271,3–5.

108 Loc. cit. 270,3–6.

109 Loc. cit. 268,9.

cant and implicate (*al-malzūm wa-l-lāzim*). Only in the latter case the truth is “according to a certain assumption (*bi-ḥasabī farḍin mā*).” In contrast, the minor premiss attests “the existence and occurrence” (*al-wujūd wa-l-ḥuṣūl*) of a thing or event.

A further testimony of Ibn Sīnā’s use of the term *istithnā*’ is from his *Metaphysics*. Discussing the [Ash’arite] claim that potency (*quwwa*) in the sense of power (*qudra*) only exists for that which acts and does not act, and that what only acts does not have a [natural] power, Ibn Sīnā says: “It does not belong to the truth of the hypothetical (*ṣidq ash-sharṭi*) [inasmuch it is a hypothetical] that there is an *istithnā*’ [i.e., according to his explanation in his *Qiyās*, ‘an attestation of the existence and occurrence’], no matter which, or that there is a predicative truth, since, from the truth of our statement ‘when he does not will, he does not act’ does not follow that one acknowledges the truth of ‘but (*lākinnaḥū*) at some time he does not will.’ And when it is false that ‘he never wills,’ [it does not follow that one acknowledges the truth that] it necessitates the falseness of our statement ‘when he does not will, he does not act’ [...] This is clear to the one who is acquainted with logic.”¹¹⁰

From Ibn Sīnā’s explanation in his *Qiyās* of the *Shifā*’ it is evident that he does not understand *istithnā*’ in the sense of ‘repetition,’ and further that in the testimony from his *Metaphysics* the term *istithnā*’ is applied in the sense explained in the *Qiyās*. According to this explanation “the exception” (*al-istithnā*) in the sense of “an evidence/testimony of the existence and the occurrence” added to a hypothetical proposition, from which follows a necessary consequence (*luzūm*) implies the experience of the existence and occurrence [or non-existence/occurrence] of the thing or event posited in the added [proposition] (*al-mustathnā*). The attestation is introduced by the particle *lākin* or what is equivalent to *lākin* in the sense of ‘but, however,’ introducing the new aspect that the antecedent *thing* exists, or that the consequent *thing* does not exist. Ibn Sīnā’s explanation of *al-istithnā*’ clarifies that according to his understanding the conclusion of a hypothetical syllogism—denoted as *al-qiyās ash-sharṭi al-istithnā’i*—is through a testimony of the existence of the cause yielding the conclusion. The conclusion is not only based on the supposition or assumption (*farḍ*) of the cause of the conclusion, but on an inductive proof based on expe-

110 Ibn Sīnā, *ash-Shifā*’, *al-Ilāhiyyāt* IV.2, 173, 5–12: *wa-laysa min ṣidqi sh-sharṭi an yakūna hunā-ka istithnā’un bi-wajhin minā l-wujūhi aw ṣidqun ḥamlīyyun fa-innahū laysa idhā ṣadaqa qawlunā idhā lam yasha’ lam yaf’al yalzamu an yuṣaddaqa lākinnaḥū lam yasha’ waqtan mā wa-idhā kadhāba annahū lam yasha’ al-battata yūjibu dhālika kadhāba qawlinā wa-idhā lam yasha’ lam yaf’al [...] wa-hādhā bayyinun li-man ‘arafa l-mantiq.*

rience.¹¹¹—The condition of the actual existence and occurrence of the thing from which follows a consequent at a certain time is fundamental for Aristotle’s and Ibn Sīnā’s definition of hypothetical, restricted necessity.

Since also al-Fārābī’s hypothetical syllogistic is founded in the experience of phenomena taken as signs for the evidence of causal relations between things, events, and states of affairs, he probably also understood the particle ‘but, however’ in the sense of introducing a testimony of the existence and occurrence of a thing or event from which one concludes the existence and occurrence of the existence and occurrence of the causes and conditions of that thing or event.

Now back to the two kinds or steps explained in text 27. The [a] first kind of the *topos* ‘from consequents’ al-Fārābī explains in text 27 is the later so-called *modus ponendo ponens* (“the mode which posits by positing”), applied by Aristotle *Prior Analytics* I.44, 50a34–35 (if p, then q), and 50a19–20 (if not p, then not q).¹¹² The attested existence or non-existence of the thing p is the sufficient cause by which the sought-after (*maṭlūb*), i.e. the [hypo-] thesis (*waḍ‘*) that q exists or does not exist is established. In other words, the existence or non-existence of p is a certain sign of the existence or non-existence of q:

- [a.1] If p exists, then q exists
 - p exists
 - therefore q exists
- [a.2] if p does not exist, then q does not exist
 - p does not exist
 - therefore q does not exist

The [b] second kind is the later so-called *modus tollendo tollens* (“the mode which takes away by taking away”), functioning as a test regarding the necessity relation between the antecedent and the subsequent. The found thing q “exists by the existence of the [hypo-] thesis” and “we posit that [hypo-] thesis” as “the antecedent,” al-Fārābī says (text 27). If the existence of q follows universally and absolutely from the existence of p—that is, as Aristotle explains *Posterior Analytics* I.5, 74a32–74b4, from p *qua* p (text 4, above)—, then the non-existence of q destroys the [hypo-] thesis that p exists. However, in contrast to the mode of

111 Regarding the relation between induction (*istiqrā‘*) and methodical experience (*tajriba*) cf. al-Fārābī saying that from induction does not follow necessary certainty by a universal judgement, whereas from methodical experience does, and that many people deem the two of them to be interchangeable. al-Fārābī, *K. al-Burhān wa-Sharā’iṭ al-Yaqīn*, 25,1–3.

112 Cf. Gisela Striker, “Aristoteles über Syllogismen ‘aufgrund einer Hypothese,’” *Hermes* 107 (1979): 48.

establishing an existence claim by the sufficient cause, for the mode of destruction is not needed the taking away of the sufficient cause, but only the taking away of a necessary cause and condition. Hence, the existence of the thing *q* is either the sufficient *or* a necessary cause and condition of the existence of *p*, so that if *q* is taken away, also *p* is taken away, and from the existence of *q* does neither necessarily nor always follow the existence of *p*:

- [b] if *p* exists, then *q* exists
 q does not exist
 therefore *p* does not exist

It remains for us to understand the last sentence of text 27: “And this [kind of syllogism] is the other part coupled together with it [viz. with the first kind (*ḍarb*) of the conjunctive hypothetical syllogism] with regard to the sought-after (*wa-huwa l-juz'u l-ākharu l-maqrūnu bihī fī l-maṭlūb*).”

Al-Fārābī's first and second kind are formally equivalent to the first and second indemonstrable argument of Chrysippus.¹¹³ Further, the first and second kind of concluding *coupled together* as explained in text 27 constitute an implication by contraposition. The implication [a.1] ‘if *p*, then *q*’ is true, if, and only if, the contraposition [b] ‘if not *q*, then not *p*’ is true. This is formally equivalent to Sextus Empiricus's report of ‘connexion’ (συνάρτησις): “The ones who introduce connexion say that the conditional is sound when the contradictory to the consequent in it conflicts with the antecedent in it: according to them the aforementioned conditionals will be faulty, but that one will be true: ‘If it is day, it is day.’”¹¹⁴ However, al-Fārābī's understanding of consequence is completely different from Chrysippus's view and from the view of ‘connexion’ reported by Sextus Empiricus. The Stoic view of consequence is based in things as bearers of truth values,¹¹⁵ and this understanding is also behind the example “If it is day, it is day.” This example makes sense from the view that rela-

113 See Sextus Empiricus, *In Three Volumes*, vol. 11: *Against The-Logicians*, 11.224–225 (p. 352–355).

114 οἱ δὲ τὴν συνάρτησιν εἰσάγοντες ὑγιὲς εἶναι φασὶ συνημμένον, ὅταν τὸ ἀντικείμενον τῷ ἐν αὐτῷ λήγοντι μάχεται τῷ ἐν αὐτῷ ἡγουμένῳ· καθ' οὗς τὰ μὲν εἰρημένα συνημμένα ἔσται μοχθηρά, ἐκεῖνο δὲ ἀληθές· εἰ ἡμέρα ἔστιν, ἡμέρα ἔστιν. Sextus Empiricus, *In Three Volumes*, vol. 1: *Outlines of Pyrrhonism*, ed. and trans. by Robert Gregg Bury, Loeb Classical Library (London: William Heineman/ Cambridge, Mass.: Harvard University Press, 1933), 11.111 (pp. 222–223). Cf. the analysis of this text by Fabian Ruge, *The Stoic Theory of Sign and Proof* (Basel/Zürich: Schwabe, 2022), 13; 28–29 (my translation quotes Ruge 29).

115 See Susanne Bobzien, “Peripatetic Hypothetical Syllogistic in Galen—Propositional Logic off the Rails?” *Rhizai: A Journal for Ancient Philosophy and Science* 2 (2004): 62.

tions of truth and falseness are considered, but not from the Peripatetic view shared by al-Fārābī. In contrast to the Stoic view al-Fārābī understands the consequence analyzed by the first and second kind as based in causal relations between things considered from the aspect of epistemic or ontic and natural priority and posteriority. The Stoic view which considers only the relations of truth and falseness leaves open whether truth and falseness are based in causal relations or in mere concomitance. In Peripatetic understanding, however, the second kind complements the first by singling out and distinguishing.

(a) the narrower extension of consequence (*luzūm*) comprising the necessary and sufficient conditions for *either* the existence of p *or* for the existence of *per se* accidents whose existence follows necessarily from the existence of p, from

(b) the wider extension of consequence (*luzūm*) comprising together with the former also mere concomitants following upon the existence of p.

The understanding of ‘connexion’ (συνάρτησις) reported by Sextus Empiricus, however, is open to both, to the merely empiricistic view defended by Sextus Empiricus and to the Peripatetic view represented by al-Fārābī. However, Sextus Empiricus’s example ‘if it is day, it is day’ is neither explanatory of a cause, nor of the following of a mere concomitant.

5.2 *The Division of (Essential) Consequents According to Reversibility by Mutual Correspondence of Existence and Completeness of Consequence*

After the division of the *topos* into the later so-called modi *ponendo ponens* and *tollendo tollens* al-Fārābī divides the usage of the *topos* with regard to the consequents from the aspect of whether prior and posterior are ‘reversible in mutual correspondence,’ i.e. reciprocal, or not. In his paraphrase of the *Categories* he calls the former ‘complete consequence’ (*tāmm al-luzūm*/τελεία ἀκολουθία) and the latter (*ghayr tāmm al-luzūm*/ἐλλειπής ἀκολουθία), a division he uses frequently also in other works,¹¹⁶ but he does not use these terms in his *Analysis*.

¹¹⁶ Cf. above § 4 and below § 6. For al-Fārābī’s division of prior and posterior with regard to the consequence of existence (*luzūm al-wujūd*) into essential consequence (*luzūm dhātī*) and accidental consequence (*luzūm ‘araḍī*) and the latter into complete consequence (*tāmm al-luzūm*), in which case prior and posterior are reciprocal with regard to the consequence of existence (*yatakāfi‘ān fī luzūm al-wujūd*), and incomplete consequence (*nāqīṣ al-luzūm*), in which case prior and posterior are not reciprocal, cf. also [pseudo-(?)] al-Fārābī, *Jawābāt li-Masā’il Su’ila ‘anhā*, 326 (§ 18).

5.2.1 'Complete Consequence': Destroying and Establishing
Consequents 'Reversible by Mutual Correspondence'

[Text 28:] We also consider what is the thing by whose being taken away that [hypo-] thesis is taken away. And what is the thing which is taken away by the being taken away of the [hypo-] thesis.

[a] If we come upon the thing for which it holds that, when it is taken away, the [hypo-] thesis is taken away, we posit its being taken away. It is the antecedent, and we complete it with the being taken away of the [hypo-] thesis. Then we add the exception of the antecedent (*thumma stathnaynā bi-l-muqaddam*), so that the [hypo-] thesis is taken away. If it [viz. the [hypo-] thesis] is affirmative, it becomes negating, and if it is negating, it becomes affirmative. In short, the conclusion is the opposite of that matter, and by it that matter is destroyed. And this *topos* is used for destroying (*ibtāl*) every proposition posited.

[b] And if we come upon the thing which is taken away by the being taken away of the proposition we have hypothetically posited, we posit the being taken away of the proposition. This is the antecedent, and the being taken away of the thing is the subsequent. Then we add the exception of the opposite of the subsequent (*thumma nastathnī bi-muqābil at-tālī*), and we conclude the existence of the [hypo-] thesis. And the *topos* which preceded is for destroying the [hypo-] thesis, and this one is for establishing it. (al-Fārābī, *K. at-Taḥlīl* 102,12–19).

Al-Fārābī's account shows that the method of destroying and establishing a hypothetical proposition is inductive, concluding from the attestation and testimony of the existence and occurrence of a particular instance taken out of the set of things falling under the antecedent.¹¹⁷

117 As the Greek particle *δέ* the Arabic 'exception particle' (*ḥarf al-istithnā'*) does not necessarily pick out things from a set of things mentioned before. If it does, this is called in Arabic grammar *al-istithnā' al-muttaṣil*. But the exception particle can also pick out something which does not fall within the set of things mentioned before. This case is called in Arabic grammar *al-istithnā' al-munqaṭi'*, as in e.g. "the people came, but not their donkey" (*jā'a l-qawmu illā ḥimāruhum*), or in *Qur'ān* 18,50: "they [sc. the angels] prostrated, but not Iblīs, he was one of the Jinn," where the particle *illā* is applied in the sense of *lākin* ("but, however") followed by negation. See Khalid Yahya Blankinship, *The Inimitable Qur'ān* (Leiden/Boston: Brill, 2019), 72–78 (esp. 72). Cf. Nicolai Sinai, *Key Terms of the Qur'an: A Critical Dictionary* (Princeton: Princeton University Press, 2023), 455–456.

5.2.2 An Erroneous Use of the *topos* ‘from Consequents.’ Taking What Follows *per accidens* as What Follows *per se*

Before explaining incomplete consequence, al-Fārābī inserts a paragraph on the sophistical or rhetorical usage of the *topos* ‘from consequents.’ The paragraph is particularly interesting from two aspects. It is an implicit reference to the original place and function of the *topos* in the *Topics* and to the scientific usage of the method of ‘taking away’ in the *Posterior Analytics*. Al-Fārābī explains that (essential) consequents¹¹⁸ must follow immediately, necessarily and universally upon the cause ‘because of which’ (*li-ajli*) they follow, whereas what follows *per accidens* does not:

[Text 29:] Sometimes the *topoi* of existence and being taken away are used in respect of the [hypo-] theses according to a different mode (*fī l-awḍā‘ alā jihatīn ukhrā*). This is that we consider the subject of the [hypo-] thesis, and, if it is the case that ‘when it belongs to a *certain* thing (*wajada fī shay’in mā*), then, by its existence [viz. by the existence of that certain thing], the predicate belongs to *that* thing,’ then one takes the predicate as belonging to *every* subject [falling under the subject-term] of the [hypo-] thesis. If the *topos* is taken in the way of this description only, it is corrupt, because it is possible that the predicate belongs to that thing by the fact that the subject belongs to it *per accidens* (*bi-l-‘araḍ*), or [it is possible] that its existence follows because the subject belongs to that thing particularly (*khāṣṣatan*), so that it is not a necessary consequence because of that [thing] (*li-ajli dhālika*) that it exists in the whole (*jamī‘*) of the subject of the [hypo-] thesis ... (al-Fārābī, *K. at-Taḥlīl* 102,19–103,4; emphasis added).

Al-Fārābī further explains the correct, scientific usage of the *topos* in agreement with the *Posterior Analytics* concluding that the *topoi* ‘from consequents’ if applied correctly, are equivalent to a first figure universal proposition in the form “to all [A] to which belongs the subject [B] to [all of] them belongs the predicate [C]” (*kullu mā yūjadu fīhi l-mawḍū‘ yūjadu fīhi l-maḥmūl*).¹¹⁹ Then he comes back to his division of essential consequents.

118 In this place al-Fārābī speaks only of following *per accidens* (*bi-l-‘araḍ*) without contrasting it explicitly with *per se* (*bi-dh-dhāt*). But in his paraphrase of the *Categories* and his *Jawābāt li-Masā’il Su’ila ‘anhā* (§18) he does. See below §6.

119 al-Fārābī, *K. at-Taḥlīl* 103,4–18.

5.2.3 'Incomplete Consequence': Errors from the Conversion of
Destroying by Taking Away a Necessary Condition into
Establishing

Al-Fārābī proceeds by explaining the Aristotelian 'destroying' (ἀνασχευάζειν) by means of 'taking away' (ἀναίρειν) according to *Topics* 11.4, 11b17–23.¹²⁰ This is the kind of consequence he denotes in the division of his paraphrase on the *Categories* as 'incomplete consequence,' that is, non-reversibility of the consequence of existence:

[Text 30:] It is also necessary that we consider: When the subject is taken away from a certain thing, then the predicate is taken away by its having been taken away. Then, when this is the case, one opines (*yuzannu*) that, when the subject exists, then the predicate exists. And therefore one opines that it follows that the predicate belongs to every subject. This is very dubious, and it is sophistical, and sometimes it is used in rhetorics. For it is not the case that when a state of affairs (*amr*) is taken away by the being taken away of a certain thing, that it follows necessarily that the state of affairs exists by the existence of that thing. This is because [e.g.] the human (*al-insān*) is taken away from this individual visible thing by the being taken away of the animal (*al-ḥayawān*) from it, and when an animal exists, then it does not follow necessarily that it is a human. And the one who makes use of this improper (*mukhill*) [hypo-] thesis, so that he adds the exception of the opposite of the antecedent (*innamā yastathnī muqābil al-muqaddam*) and concludes the opposite of the subsequent, is ignorant. (al-Fārābī, *K. at-Taḥlīl* 103,18–104,4).

In the next step al-Fārābī starts listing—ostensible or actual—errors following from the ostensible or actual non-distinction between 'complete' and 'incomplete consequence' by the conversion of destroying into establishing. The errors he explains are grounded in [a] the non-distinction of necessary and sufficient cause and of remote and proximate cause, and in [b] the non-distinction of the cause of the recognition of a fact and the cause of the existence of a fact:

[Text 31:] [a] There is the opinion that by this *topos* the causes (*asbāb*) of the things are discovered, namely the opinion that a state of affairs,

¹²⁰ See above §3.

when it is taken away, and by its being taken away another thing is taken away, then the existence of that state of affairs is a cause for (*sababun li-*) the existence of that other thing, in the manner in which Galen the physician deemed it to be appropriate. He applies this often to what he observed by autopsy regarding human organs. And he posits it [sc. what he observed] as causes of (*asbāban li-*) other things he did not observe by applying this *topos*. E.g. his doctrine ‘when we cut off such and such nerve, then the voice, or the movement or the sense perception are destroyed (*baṭala*). Therefore the existence of that nerve is a [*sic!*] cause (*sababun*) for the existence of the voice, or [a cause] of the movement or [a cause] of the sense perception.’ And he is ignorant that he attests the opposite of the antecedent and concludes the opposite of the subsequent.

[b] Other people are of the opinion that a state of affairs, when it exists, and another thing exists by its existence, then it is the [*sic!*] cause (*as-sabab*) of the existence of that other thing. Also this is attached to many of the causes, but not everything which is like this, is a [*sic!*] cause (*sababan*). This is clear from [the example] that when man exists, animal exist necessarily, and man is not a cause (*laysa bi-sababin*) of the existence of animal.

[c] What is implied by the thing (*al-lāzim ‘an ash-shay’*) is sometimes a [*sic!*] cause for (*sababan li-*) the existence of that thing, like the building and the builder, and the written and the writer, since the written implies that the writer exists (*yalzamu ‘anhū an yūjada l-kātib*), and the written is not a cause (*laysa ... sababan*) for the existence of the writer, rather the writer is a cause for the existence of the written.

And when the existence and the being taken away are composed together from one aspect by [the composition] that ‘when the state of affairs exists, something else exists by its existence, and when it is taken away, that other thing is taken away by its being taken away,’ then the *topos* is of strong persuasiveness (*kāna ... qawīyya l-iqnā’*) ... (al-Fārābī, *K. at-Taḥlīl* 104,4–105,2).

Both errors arise from the confusion of necessary with sufficient cause and from the reversion of protasis and apodosis in cases of ‘incomplete consequence.’ The first error [a] seems to establish by a necessary, remote condition and cause instead by a sufficient, proximate cause, the second [b] does not distinguish between non-causal concomitant and sufficient cause and not between the cause of the recognition of a fact and the cause of its existence.

But the criticism against Galen is telling. Al-Fārābī's seems not to flinch from eristic.¹²¹ First, from Galen's writing it is evident that he clearly distinguished between proximate and sufficient cause on the one hand and necessary, but non-sufficient cause on the other.¹²² Second, Galen's conclusion based on his empirical studies by autopsy in the example is not based on the confusion of a necessary with a sufficient cause. Galen's hypothesis 'if voice exists, then this nerve exists' verified by testifying, based on his empirical studies, 'this nerve does not exist, therefore voice does not exist,' is not establishing by the thesis 'if this nerve exists, the voice exists,' but rather by proving by the *modus tollendo tollens* 'if this nerve does not exist, then voice does not exist' that 'this nerve' is a necessary condition of the existence of voice. The existence of that nerve is a cause (*sabab*), not *the* cause of the existence of the voice in the same way in which a writer is a necessary cause for the existence of something written, a builder for the existence of a building, and so forth for all non-sufficient, necessary causes for the existence of a thing.

5.2.4 Aristotle's Usage of the *topos* in the *Categories* and in the *Posterior Analytics*

After having finished the explanation of errors arising from an improper usage of the *topos*, al-Fārābī explains the usage Aristotle makes of the *topos*:

[Text 32:] Aristotle has used this very same *topos* at a number of places. Among them is the book on the *Categories* in the chapter of the relative where he wants to provide the rules by which one discovers the state of affairs (*amr*) where the relation happens to be reciprocal (*mu'adalatan*). And in the book of the *Demonstration* [i.e. the *Posterior Analytics*] they [viz. these *topoi*] are used where he wants to make evident by which method (*ṭarīq*) one knows the thing of which the predicate is predicated first (*awwalan*). E.g., if there is a triangle in a plain red copper, and that plain [thing] is red, and it is plain, and it is copper, and it is a figure, and it is a triangle, and it has angles equal to two right angles [viz. the sum of its interior angles is 180°]. And we want to know of which of these

121 See on al-Fārābī's polemic against Galen Friedrich W. Zimmermann, "Al-Farabi und die philosophische Kritik an Galen von Alexander zu Averroes," in *Akten des VII. Kongresses für Arabistik und Islamwissenschaft*; Göttingen, 15. bis 22. August 1974 (*Abhandlungen der Akademie der Wissenschaften in Göttingen, Philologisch-historische Klasse, Dritte Folge, Nr. 98*), ed. by Albert Dietrich (Göttingen: Vandenhoeck & Ruprecht, 1976), 401–414 (esp. 411–412).

122 Cf. above § 2.4.

descriptions (*awṣāf*) is predicated ‘angles equal to two right angles’ first. We discover that by taking away (*bi-an narfā‘a*) that it is red, and that it is copper, and we leave over other descriptions, so that angles equal to two right angles is not taken away from it. And if we take away from it that it is plain, and that it is a figure, then that [viz. angles equal to two right angles] is taken away from it. But, when it is found to be a figure, or plain, then angles equal to two right angles is not found to belong to it. But, when that it is a triangle is taken away from it, then that [viz. angles equal to two right angles] is taken away from it, and when it is found to be a triangle, then angles equal to two right angles are found. And every other thing to which belongs this predicate, this predicate belongs to it because (*li-ajli*) it is a triangle. (al-Fārābī, *K. at-Taḥlīl* 105,11–106,2).

Al-Fārābī describes the process of ‘constructing’ (*ithbāt* / κατασκευάζειν) a triangle by the geometrician taking the classical example from Aristotle,¹²³ which shows the background of the method of the *topos*. The geometrician constructs by trying what he can omit and what is left over when he takes away something. And so do the researchers among physicians in medical trials and based in anatomical studies. The *Posterior Analytics* generalize this method to a universal method of scientific demonstrations by means of first figure syllogisms.

Al-Fārābī then further explains which distinctions must be observed regarding the relation between middle and major term of first figure syllogisms, regarding the causal relations or non-causal relations between the things signified by middle and major term and regarding opposition (*taqābul*) and conversion (*aks*) of propositions, all of these issues treated from the aspect of the ‘consequence of existence’ divided into establishing and destroying by the method of ‘taking away.’

6 Al-Fārābī’s Paraphrase of the *Categories* (*K. al-Maḥlāt*): the Division of Consequence (*luzūm*) and of Prior and Posterior (*al-mutaqaddim wa-l-muta’akhhir*)

In his paraphrase on the *Categories* al-Fārābī explains a comprehensive division of consequence (*luzūm*). He splits the interpretation of *Cat.* 12 into two paragraphs. The first contains the division of consequence, the second a division of

¹²³ Cf. above § 2.2 (text 4).

kinds of prior and posterior (*al-mutaqaddim wa-l-muta'akhhir*). The method of 'subtraction' or 'taking away' (*irtifā'*) is a tool for both divisions.

6.1 *The Division of Consequence (luzūm): the Division of Inseparable Consequents (mutalāzimān) and Conflicting Consequents (muta'ānidān)*

The chapter on consequence (*luzūm*) is based on the distinction between the second and fifth way of priority in *Categories* 12:

(2.) the priority of what is *not* reversible in mutual correspondence with regard to the consequence of existence (*mā lā yarji'ū bi-t-takāfu' fī luzūm al-wujūd*/ τὸ μὴ ἀντιστρέφον κατὰ τὴν τοῦ εἶναι ἀκολουθήσιν); example: one is prior to two;

and

(5.) the priority of "the cause of two things which are reversible in mutual correspondence with regard to the consequence of existence" (*al-muqaddam bi-annahū sabab huwa s-sabab min ash-shayayni lladhayna yarji'āni bi-t-takāfu' fī luzūm al-wujūd*/ τῶν γάρ ἀντιστρέφόντων κατὰ τὴν τοῦ εἶναι ἀκολουθήσιν) (14b11–12).¹²⁴

However, the paragraph cannot be explained immediately on the grounds of Aristotle. Al-Fārābī's interpretation rather is close to Galen's division of consequence and conflict, divided into two kinds of consequence and two kinds of conflict. Al-Fārābī's knowledge perhaps stems from Galen's lost work *On Demonstration*, of which Ḥunayn b. Isḥāq (d. 873) had translated the pieces and fragments he could get in his search for the work.¹²⁵ But Galen's division of consequence can also be reconstructed from his *Institutio Logica*, which has also been translated by Ḥunayn and his circle of translators. So far, before al-Fārābī no other commentator could be found who adopted Galen's division of consequence and conflict. But since the transmitter must have been Ḥunayn, there perhaps have been Syriac sources transmitting Galen's division of consequence and conflict, and also other commentators must be taken

¹²⁴ See above § 4.1. See on Galen's division of consequence and the Greek terms Susanne Bobzien, "Peripatetic Hypothetical Syllogistic in Galen," 57–102.

¹²⁵ See Fritz Zimmermann, *Al-Farabi's Commentary and Short Treatise on Aristotle's De Interpretatione* (London: Oxford Univ. Press, 1982), ixxx.

into account for having had influence on al-Fārābī’s division, as e.g. Ammonius.

The starting point of the chapter on consequence (*luzūm*) is a definition of inseparable consequents (*mutalāzimān*). Then follow three divisions. The first division is between starting by what is consequent *per se* and what is consequent *per accidens*. The second divides *per se* inseparable consequents into inseparable in the most cases and inseparable by necessity. The third divides inseparable by necessity into complete and incomplete consequence and into complete and incomplete conflict.

‘By necessity’ equates the temporal and the modal aspect of necessity. What follows *always* (*ad-dā’im al-luzūm*) is following *necessarily*. That is to say, necessary consequence is the impossibility of non-consequence. A necessary consequent is what cannot not follow, necessary is what cannot be otherwise:

[Text 33:] ‘Inseparable consequents’ (*al-mutalāzimān*) are the two things [for] which [holds] if one of the two exists, the other exists by its existence (*bi-wujūdihi*). ‘Consequent’ (*al-lāzim*) may be [1.1] something consequent *per accidens* (*lāziman bi-l-‘araḍ*), e.g. as we say ‘if Zayd is coming, ‘Amr is leaving’ when it is by chance that this happens at a certain time, since the leaving of ‘Amr is consequent because of (*lāzim li-*) the coming of Zayd, however, it is *per accidens*. And [1.2] it may be *per se*. And ‘consequent *per se*’ (*al-lāzim bi-dhāt*) may be [1.2.1] consequent in the most cases (*lāziman ‘alā l-akthar*) as when we say, ‘when the Sirius, passing over, is rising in the morning, then the heat becomes great and the rains stop,’ then this is consequent *per se* because of (*lāzim li-*) the rising of the Sirius, however, in the most cases (*‘alā l-akthar*). And [1.2.2] it may be consequent by necessity (*lāziman bi-ḍṭirār*), and this is the perpetually consequent (*ad-dā’im al-luzūm*) of which it is impossible that it is separable from the thing by whose existence it exists. And this is, whatever the time (*fī ayyi waqtin*) the thing exists, the consequent exists out of it (*‘anhu*), and at no time is it [viz. the thing] free from it [viz. from the consequent]. (al-Fārābī, *K. al-Qāṭāghūriyās ay al-Māqūlāt, al-Manṭiq ‘inda l-Fārābī*, ed. by Rafīq al-‘Ajam, Beirut: Dār al-Mashriq, 1985, vol. 1, 127,2–9).

The by necessity inseparable consequents (*al-mutalāzimān bi-ḍṭirār*) then are divided into two kinds (*ḍarbān*), necessarily inseparable by [a] complete (*tāmm al-luzūm*/ τελεία ἀκολουθία) or [b] incomplete consequence (*ghayr tāmm al-luzūm*/ ἐλλειπής ἀκολουθία), destroyed by taking away the sufficient cause in the case of [a] complete consequence and by taking away a nec-

essary cause in [b] the case of incomplete consequence, the latter exemplified by the destruction of Xenokrates's doctrine¹²⁶ by the principle of non-contradiction:

[Text 34:] [a] The two whose consequence is complete are those two [for which holds], when one of them exists, whichever from the two it might be, then, by its existence, the other necessarily exists. That is, when the first of the two exists, the second necessarily exists, and when the second exists, the first necessarily exists, and the two of them are mutually correspondent with regard to the consequence of existence, as, for example, the rising of the sun and the existence of the day (*al-awwalu minhumā idhā wujida wujida th-thānī ḍarūratan wa-idhā wujida th-thānī wujida l-awwalu ḍarūratan wa-humā lladhānī yatakāfāni fī luzūmi l-wujūd mithla ṭulūʿi sh-shamsi wa-wujūdi n-nahār*).

[b] The two whose consequence is incomplete are those two [of which holds], when the first of the two exists, the second necessarily exists, and when the second exists, the existence of the first does not follow necessarily, as for example man and animal, since when man exists, animal necessarily exists, and when animal exists, it does not follow necessarily that man exists. The two of them are not mutually correspondent with regard to the consequence of existence.—And the consequent (*lāzim*) among the two, when it is taken away, then necessarily the thing out of which the consequence of its existence comes from is taken away, like human and animal. When animal is taken away, it follows necessarily that human is taken away.—[This is] because, when animal is taken away, and man is not taken away and remains existent, and by the existence of man exists animal, then necessarily follows: when animal is taken away, animal exists at the time at which it does not exist, and one and the same thing exists and does not exist at the same time and from one and the same aspect, and this is absurd.

And in the same way it follows regarding two things being mutually correspondent with regard to the consequence of existence that, when one of the two is taken away, whichever from the two it might be, the other is taken away. (*al-Fārābī, K. Qāṭāghūriyās* 127,10–128,3).

Conflict (*ʿinād*) is divided analogous:

¹²⁶ Cf. above § 3.2.

[Text 35:] Two things being in conflict with each other (*al-muta‘ānidān*) are of two kinds (*ḍarbān*): one kind is their being in complete conflict with each other (*‘ināduhumā tāmm*/ τελεία μάχη), and one kind is their being in incomplete conflict with each other (*‘ināduhumā ghayr tāmm*/ ἑλλιπής μάχη). Complete conflict is when one of the two exists, whichever from the two it might be, the other is taken away. And when one of the two is taken away, whichever from the two it might be, the other exists.

Incomplete [conflict] is when one of the two is taken away, whichever from the two it might be, the existence of the other does not follow necessarily. (al-Fārābī, *K. Qāṭāghūriyās* 127,10–128,4–7).

In the last step conflict is subsumed under consequence:

[Text 36:] Therefore it is possible to take two things which are in conflict with each other by conversion (*bi-l-‘aks*), so that they are counted among the consequents (*lawāzim*). When the second of the two has been taken away, then this is consequent out of (*‘an*) the existence of the first. And likewise, when the second exists, then also follows that the first is taken away. (al-Fārābī, *K. Qāṭāghūriyās* 127,10–128,7–9).

In the second half of the chapter al-Fārābī systematizes these relations in form of hypothetical syllogisms. Inseparable consequents (*mutalāzimāt*) are composed in form of conjunctive hypothetical syllogisms (*ash-sharṭiyya al-muttaṣila*), opposites (*mutaqābilāt*) in form of disjunctive hypothetical syllogisms (*ash-sharṭiyya al-munfaṣila*), in the following way:¹²⁷

Complete consequents:

when p, then q

p exists, therefore q exists (from cause to effect)

and:

q exists, therefore p exists (from effect to cause)

Complete opposites:

either p or q

p exists, therefore q does not exist

and:

q exists, therefore p does not exist

¹²⁷ al-Fārābī, *K. Qāṭāghūriyās*, 128,9–129,3.

Incomplete consequents:

when p, then q

p exists, therefore q exists

and:

q does not exist, therefore p does not exist

Opposites taken with regard to one and the same subject are things in conflict with each other (*mutaʿānida*) and hence complete opposites. Opposites not taken with regard to one and the same subject aren't consequents unless they are relatives (*muḍāfān*).

6.2 *Al-Fārābī on Prior and Posterior (al-mutaqaddam wa-l-muta'akhhir) in His Paraphrase of the Categories*

In the second part on *Categories* 12 al-Fārābī literally quotes Aristotle's explanation of priority by being a cause, but his examples are different from Aristotle's:

[Text 37:] The prior by being a cause "is the cause of two things which are reversible in mutual correspondence with regard to the consequence of existence" (*al-mutaqaddam bi-annahū sabab huwa s-sabab min ash-shay'ayni lladhayna yatakāfāni fī luzūm al-wujūd* / τῶν γάρ ἀντιστρέφόντων κατὰ τὴν τοῦ εἶναι ἀπολούθησιν τὸ αἷτιον) (14b11–12), like the rising of the sun and the existence of the day, since the two of them are mutually correspondent [i.e. reciprocal] with regard to the consequence of existence (*yatakāfāni fī luzūm al-wujūd*), save that the rising of the sun is the cause with regard to the existence of the day, and it is prior to the existence of the day by being its cause, [and by] nothing else.

And the cause, in short, insofar it is a cause of any kind whatsoever, is prior to the thing which comes to be from it. And nothing prevents that it is a cause preceding the thing which comes to be from it in time, like the builder [*of* a house] and the wall [*for* a shelter/roof]. So priority unites two aspects, that it is a cause for it [viz. for the thing which comes to be from it] and that it is [prior] in time.

And in this way nothing prevents regarding one and the same thing that it is prior from all these or more than these aspects. Nor does anything prevent that one and the same thing might be prior to something from one aspect and posterior to it from another aspect, for example that the most perfect of the medical doctors is the youngest of them, so that the youngest is prior to the oldest in perfection, and posterior to him in time. (al-Fārābī, *K. Qāṭaghūriyās* 130,6–15).

Al-Farābī distinguishes between the priority of the cause *qua* cause *for* the caused and the temporal priority or simultaneity of a cause in relation to the actuality (ἐνέργεια) and fulfillment (ἐντελέχεια) of a thing. The examples cover all four Aristotelian causes for the actuality of a natural or artificial thing, usually used by Aristotle in the *Metaphysics* and the *Physics* to illustrate the relations of formal, efficient and material or instrumental cause to final cause:

- the rising of the sun (*tulū’ ash-shams*) is the formal cause *for* the actual existence of the day;
- the builder (*al-bannā’*) is the potential efficient cause *for* the existence of a future house;
- the wall (*al-hā’it*) is the potential material or instrumental cause *for* the existence of a future roof/shelter.
- the existence of the day, the existence of the house, the existence of the roof/shelter are the final causes of the formal, efficient and material or instrumental causes.

7 Divisibility as Condition of Subtraction in Aristotle’s *Metaphysics*

Aristotle’s technique of establishing and destroying by the *topos* ‘from consequence’ is based on the causal relations between what is posited as antecedent and what follows as consequent from the existence and occurrence of the posited. In his *Metaphysics* Aristotle expounds the different kinds of causal relations between the posited and what follows with regard to ‘the consequence of existence’. And he also treats the different ways in which things are referred to and posited *qua* mentally and/or extramentally existent and occurring things, either by no definite cause and merely *per accidens*, or by a definite cause and *per se*.

Since all learning proceeds from the ‘less recognizable’ and proceeds to the ‘more recognizable’ (*Met.* VII.3, 1029b4–5) the scientific inquiry starts from the reference to sensible material compounds and proceeds from them to the reference to the intelligible forms, and learning takes the path from opinion to scientific knowledge. Scientific knowledge and opinion are only ‘in some way’ (τῶσπον τινά/ *‘alā jihatīn mā*) knowledge and opinion of one and the same thing (τοῦ αὐτοῦ/ *li-shay’ wāḥid bi-‘ayniḥī*) (*APo* I.33, 89a24–25). E.g., “if this one [i.e. scientific knowledge] refers precisely to what man is (ὅπερ ἀνθρώπου ἐστίν/ *mā huwa mawjūdun li-l-insān*), that one [i.e. opinion] refers to man, but not precisely to what man is (ἢ δ’ ἀνθρώπου μέν, μὴ ὅπερ δ’ ἀνθρώπου/ *wa-dhālīka annahū shay’un wāḥidun bi-‘ayniḥī wa-huwa annahū insānun wa-‘alā hādhā n-naḥwi ‘alā annahū laysa huwa wāḥidan bi-‘ayniḥī*)” (89a35–37).

Thus, according to the way of learning the first existent and occurring thing referred to by a name is the sensible, material composite, and the last referent is the intelligible form. And the cognition of what occurs accidentally without knowledge of the definite cause of its occurrence is prior to the knowledge of what occurs accidentally *per se* from a definite cause which is ‘not in the essence (μὴ ἐν τῇ οὐσίᾳ) of that thing’—as, e.g., the angle sum of two right angles occurs *per se* from triangle—(*Met.* v. 30, 1025a24–32). And this knowledge is prior to the knowledge of the quasi-material, potential substrate of the actuality and fulfillment of the cause of the occurrence of the angle sum of two right angles, namely plane figure, the proximate genus of triangle.

The knowledge of ‘the consequence of existence’ from something posited by a name therefore presupposes the exact determination of the referent of the name. It must not be doubtful whether a name signifies the compound substance, or the shape (μορφή) and the form (εἶδος) and thus actuality (ἐνέργεια) and fulfillment (ἐντελέχεια) (*Met.* VIII.3, 1043a29).

Metaphysics v. 6 (1015b34–1017a6) sets out a taxonomy of the reference of names in ascending order from divisibility to indivisibility of things referred to as ‘one.’ ‘One’ is predicated (1.) in four ways *per accidens* and (2.) in four ways *per se*. And it is worth noting that the order of the four *per accidens* ways is from the widest to the narrowest in extension, and the order of the four *per se* ways from the widest to the narrowest in intension. These ways can be summarized as follows:

- 1.1 One *per accidens* [and divisible] is said of individual substances to which are attached one or more accidents. This divides into two ways:
 - 1.1.1 Either one refers to one definite individual substance to which is attached an accident, e.g., saying “Koriskos is musical” in the sense of “Koriskos and the musical [thing] is one.”
 - 1.1.2 Or one refers to one definite individual substance to which two accidents are attached, e.g., saying “the musical is just” in the sense of “the musical [thing] is the just [thing].”
- 1.2 Or one refers to one [divisible] thing by a genus [name] or a common [name] to which is attached an accident, e.g., saying that man and musical man are one and the same. This divides into two ways:
 - 1.2.1 Either one refers to a genus or common [feature] to which is attached an accident which is ‘in the substance’ (ἐν τῇ οὐσίᾳ) [as in another (ἐν ἑτέρῳ)], as musical is in man [as a dispositional property (δύναμις)] (cf. 1019a15–16)].

- 1.2.2 Or one refers to a genus or common [feature] to which is attached a habit (ἔξις) or an affection (πάθος).
2. One *per se* and indivisible is said of:
 - 2.1 The continuous thing (συνεχής /Arab. *muttaşıl*): i.e. one in number.
 - 2.2 The thing whose material substrate, either the proximate or the remote, is one in species, e.g., waterborne liquids whose material substrate is water; i.e. one in matter.
 - 2.3 The thing whose genus *qua* substrate underlying the differentia is one, in a way nearly resembling (τρόπον δὴ παραπλήσιον) matter as substrate (1016a27–28; cf. 1038a6) in the aforementioned case; i.e. one in genus.
 - 2.4 The thing whose definition, given in answer to the question ‘what is it’ (ὁ λόγος ὁ τὸ τί ἦν εἶναι) (1016a33) is one and indivisible; i.e. one in definition and essence.

On that basis Aristotle examines *Metaphysics* XIII.2–3 the way of being of mathematical (τὰ μαθηματικά) compared to the way of being of sensibles. He concludes that definitions and demonstrations of mathematical refer to magnitudes, lengths, planes, divisibility, etc. which are attached to sensibles, but not *qua* being sensible, but rather *qua* being attached to the things which are sensible. He further distinguishes between the reference to the merely accidental (τοῦ συμβεβηκότος)—as, e.g., ‘the whiteness’ “if the healthy [thing] is the white” (i.e. case 1.1.2 above)—, and the reference to things attached *per se* to a thing *qua* being a particular sort of thing (1078a5–6)¹²⁸ (i.e. case 1.2.1 above). Examples are characteristics which belong to animal *qua* female or *qua* male and to sensible bodies *qua* length or *qua* plane (1078a6–9). The aspect from which something is considered determines the science of the inquiry. E.g., man *qua* man is an indivisible [thing]. The arithmetician, however, does not posit ‘man’, but ‘one indivisible [thing],’ and then he considers whether something attaches to man (εἴ τι τῷ ἀνθρώπῳ συμβέβηκεν) *qua* indivisible [thing] [namely man *qua* being one in number, case 2.1 above]. Also the geometer does not posit ‘man’ *qua* man [i.e. according to its actuality and fulfillment, i.e. case 2.4 above], but *qua* solid [thing] [i.e. *qua* genus and material substrate, case 2.3 above] and then considers what attaches to man *qua* solid [thing]. And Aristotle concludes: “What would attach to man if he were not indivisible, exists without

128 1078a5–6: “Many [things] attach to the things *per se* inasmuch each of them belongs to such sort [of mathematical or geometrical] thing” (πολλὰ δὲ συμβέβηκε καθ’ αὐτὰ τοῖς πρώτοις ἡ ἕκαστον ὑπάρχει τῶν τοιούτων).

those things [viz. without the attributes belonging to one in number and to solid], *in potentia*. Thus, the geometers speak correctly, and discuss existent things, and existent things exist. For the existent is twofold, one in fulfillment, the other in matter” (1078a23–31).—According to this analysis, the reference to a materially divisible one implies potentially the reference to an actually indivisible.

The way from the potentiality to the actuality of the scientific definition and knowledge might be considered top-down from the genus ‘solid [thing]’—which is wider in extension than the species-form ‘man’ and the species-form in potentia—by adding (πρόσθεσις) attributes which specify precisely what man is according to scientific knowledge. Or it might be considered bottom-up by subtracting (ἀφαίρεσις) from the individual material compound substance—which is narrower in extension than the species-form—all attributes not contained in ‘the what it is’ of man *qua* man in scientific knowledge. The latter way is the way of learning (1029b4–5).

8 Conclusion: A Glance at Ibn Sīnā’s Division of What Is Essential for a Thing by the Method of Subtraction

‘Subtraction’ (ἀφαίρεσις/ *rafʿ*)—opposite ‘addition’ (πρόσθεσις/ *ziyāda*)—is Aristotle’s method for the discovery of universal, necessary and immediate conditions and causes of the recognition of the existence of things and of the existence of things itself. He develops this method in the *Topics* and illustrates it by examples from geometry and arithmetic. He uses this method for ‘constructing, establishing’ (κατασκευάζειν/ *ithbāt*) and ‘destroying’ (ἀνασκευάζειν/ *ibṭāl*) the argument of an opponent. The method is explained *Topics* 11.4, 111b17–23, which is, according to Alexander of Aphrodisias’s comment, the *topos* ‘from consequence’ and a point of departure for the division of the syllogisms ‘from hypothesis’ analogous to the first and second of Chrysipp’s indemonstrables, whose division has been announced by Aristotle *Prior Analytics* 44, 50a39–50b4, but not accomplished. By the time of the Arabic translation of the *Prior Analytics* this kind of syllogism has been commonly known among logicians, since the translator interpolates the obviously already technical term “the hypothetical syllogisms” (*al-maqāyīs ash-sharṭiyya*) to explain what *these* (*hādhihi*) syllogisms are, namely the syllogisms “from a hypothesis” (*an sharīṭa*/ ἐξ ὑποθέσεως). Al-Fārābī explains a division of the hypothetical syllogism close to a division which can be reconstructed from Galen’s extant works and is based on an analysis by the method of subtraction.

Regarding Ibn Sīnā’s application of the method of subtraction only a few remarks can be made at this place, since more would extend the scope of

this paper by far. Ibn Sīnā treats the *topos* ‘from consequence’ in *al-Jadal* 1.7 of the *Shifā’*, where he states that establishing and destroying (*al-ithbāt wa-l-ibtāl*) belongs to dialectics. It is the method for establishing that the definition exists, that it is essentially constitutive (*muqawwim dhātī*) and equivalent (*musāwin*) to the defined, and that the name is posited with regard to the intention (*ma’nā*), that is to say, the thing signified (*madlūl*) is identical with the thing signified (*madlūl*) by the name.¹²⁹

The logic parts of Ibn Sīnā’s *Manṭiq al-Mashriqiyyīn*, *K. an-Najāt*, and *al-Ishārāt wa-t-Tanbīhāt* after prolegomena all start with a division of the signification (*dalālā*) of simple linguistic expressions. For the sake of brevity I will just briefly go into the systematization of the *Najāt*. Here, the division of signification prepares the topic of the ‘what-it-is’ question without prior treatment of the simple ‘whether-it-is’ question. However, *Posterior Analytics* 7 (92b4–7) Aristotle states that the knowledge *that* something exists is a precondition for the knowledge acquisition of *what* a thing is. Aristotle proves this by an argument in form of the *modus ponens* in connection with the *modus tollens* which can be reduced as follows:

- [1.] If (A) knowledge of the what—*it*—is exists, then (B) [prior] knowledge that—*it*—is exists.
- [2.] If no (B) [prior] knowledge that—*it*—is exists, then no (A) knowledge of the what—*it*—is exists.

The Meno puzzle seems to question the relation between antecedent and consequent of this argument. Is it not the case that knowledge of what a thing is, is a precondition for the search for that thing? If so, the knowledge ‘that-it-is’ depends on the prior knowledge ‘what-it-is.’ But Aristotle said that it is the other way round.

The problem can be solved, when the ‘it’ (τῖ) in the consequent of [1.] the hypothetical proposition by the *modus ponens* and the ‘it’ (τῖ) in the antecedent of [2.] the hypothetical proposition by the *modus tollens* do not signify the same referent (Arab. *al-mushār ilayhi*). When the argument starts from what it is prior to us, then it should start with positing the sought-after ‘it’ in the antecedent of [2.] the hypothetical proposition by *modus tollens* with reference to its concrete existence (*it_e*), and in the consequent with reference to the intellection and conceptualization of its quiddity (*it_i*). The reference of *it_e* and of *it_i* is different. The referent of *it_e* is the intention (*ma’nā*) conveyed by mediation

129 Ibn Sīnā, *K. ash-Shifā’*, *al-Jadal* 1.7, 63,7–9.

of sense perception to the common sense and imagination. The referent of *it_i* is the intelligized quiddity. The sequence from what is prior to us to what is prior in nature then would be this way:

- [2.] If no (A) knowledge that-*it_e*-is exists, then no (B) knowledge of the what-*it_i*-is exists.
- [1.] If (B) knowledge of the what-*it_i*-is exists, then (C) knowledge that-*it_i*-is exists.

In the first step, knowledge that *it_e* exists must be established by knowledge of the causes and conditions which are essential for the recognition of the intention (*ma'nā*) conveyed mediation of by the senses to imagination, so that thinking can add existence or non-existence. If then knowledge of precisely 'what *it_i* is' is sought, all attributes that are accidental to the quiddity of *it_e* must be subtracted, so that only what is essential for the knowledge of its quiddity remains. Said this, it is a prerequisite for knowledge acquisition to sort what is 'essential' for a referent according to the respective epistemic level of the reference.

De interpretatione 1 Aristotle refers to the division between a thing in the imagination (φαντασία) without a reference added by an act of the cognitive faculty (διάνοια). The Arabic translation by Ishāq b. Ḥunayn from the Syriac version of Ḥunayn differs significantly from the Greek:

[Text 39:] E.g. our speech 'man' or 'whiteness.' As long as not at the same time (*ma'ahū*) something (*shay'*/ τι) is added to it, it is not yet true nor false, except it *indicates* by it [viz. by the thing added to it] its referent (*illā annahū dāllun 'alā l-mushāri ilayhi bihī*). Also our speech 'goat-stag' may *signify* some intention (*qadyadullu 'alā ma'nān mā*/ σημαίνει μέν τι). However, it is not yet true or false, as long as existence (*wujūd*/ τὸ εἶναι) or non-existence (*ḡayr wujūd*/ μὴ εἶναι) is not added to it, absolutely, or with regard to some time (*De interpretatione* 1, 16a14–18; Arab. trans. Ishāq b. Ḥunayn, ed. Farīd Jabr, *an-Naṣṣ al-Kāmil li-Mantiq Aristū*, vol. 1, 105, emphasis added).

According to Aristotle a linguistic expression like 'man' or 'whiteness', or even 'goat-stag' may signify an image (φαντασμα) in the soul without being true or false. In Ishāq b. Ḥunayn's understanding by the addition of 'is' or 'is not' to an intention (*ma'nā*) in the soul a referent (*mushār ilayhi*) is indicated, and thereby the signification (*dalāla*) becomes true or false. Given this, the truth or falseness of what is predicated as 'essential' for a thing depends on the indicated referent.

Ibn Sīnā systematizes and establishes what is ‘essential’ (*dhātī*) for a thing on three epistemic levels of reference (*ishāra*):

- (a) with regard to the [concrete] existence (*fī l-wujūd*) of the referent;
- (b) with regard to the imaginative existence (*fī t-tawahhum*) of the referent;
- (c) with regard to the conceptualization (*fī t-taṣawwur*) of the referent.¹³⁰

He defines the ‘essential’ by describing how it is established by the *modus ponens* in combination with the *modus tollens*. This is the description of the *modus ponens*: “The essential is such that, when its intention is understood and occurs to the mind, and together with it an intention which is essential for it is understood and occurs to the mind, it is impossible that the essence of the described thing [viz. the essence described by the essential attribute] is understood unless first that intention referring to it has been understood, as, e.g., ‘man’ and ‘animal.’”¹³¹ And he proves this by the application of the *modus tollens*, explaining that something is ‘essential’ for a reference object when “if

130 Cf. for an analysis of the relevant texts Riccardo Strobino, “Per se, Inseparability, Containment and Implication: Bridging the Gap between Avicenna’s Theory of Demonstration and Logic of the Predicables,” *Oriens* 44.3–4 (2016): 181–266 (esp. 238–240). Strobino translates *fī t-tawahhum* by “in imagination.” This needs further consideration. Ibn Sīnā distinguishes mere imagination (*takhayyul*) without reference from estimation (*tawahhum*) that implies a response to the images conveyed by the senses to the common sense and the imagination, e.g., to estimate something as [being] pleasure. Aristotle attributes this response to the ‘thinking soul’ (διανοητικὴ ψυχὴ). In *De int.* 1, 16a14–18 the response is assertion or denial simply, corresponding to the simple ‘whether-it-is’ question. In *De an.* 111.7, 431a14–17 the response is qualified assertion or denial, corresponding to the compound ‘whether-something-is-something’ question. And *De an.* 111.8, where Aristotle considers thinking with images, he explicitly says that “imagination is different from assertion and denial” (432a10–11), what I understand in the sense that mere imagination is different from the addition of ‘is’ or ‘is not’ to an image. For Ibn Sīnā the term ‘intention’ (*ma’nā*) refers to an intelligible content of a sensible form, processed and communicated by the senses to imagination. Its intelligibility does not depend on its imaginability. But imaginability is needed when the existence of a thing is constructed and established by means of images in the soul, as in geometry, and when we refer to something perceived by the senses but not present, as e.g. to “Aristomenes thought of/ intended Aristomenes” (διανοητὸς Ἀριστομένους) (*APr* 1.33, 47b21–29), translated into Arabic by “Aristomenes as something thought of by an image” (Aristomenes *mutawahhaman*), and adopted by Ibn Sīnā by phrasing *al-mutawahhamu Zaydan* (“the thing estimated as Zayd”). Ibn Sīnā, *K. ash-Shifā’, al-Qiyās* 1x.8, 484,9 and 11. The term *al-mutawahham* renders also τὸ ὑποληπτόν in contrast to ‘the opined’ (*al-maẓnūn*/ τὸ δοξαστόν) (*APr* 1.39, 49b6–7), a division to which Ibn Sīnā refers occasionally.—For constructing and thereby establishing the existence of something by thinking by images see Caleb Cohoe, “When and Why Understanding needs *Phantasmata*: A Moderate Interpretation of Aristotle’s *De Memoria* and *De Anima* on the Role of Images in Intellectual Activities,” *Phronesis* 61 (2016): 337–372 (esp. § 8, 358–366).

131 Ibn Sīnā, *K. an-Najāt fī al-Ḥikma al-Manṭiqiyya wa-ṭ-Ṭabīʿiyya wa-l-Ilāhiyya*, ed. by Majid Fakhry (Beirut: Dār al-Āfāq al-Jadida, 1985), 46,4–6.

it is taken away" (*in ruḥ'a*) the reference object whose existence depends on it "is taken away" (*irtaḥa'a*) and "ceases to exist" (*yabṭulu*).¹³² I.e., phrased as hypothetical proposition in the *modus ponens* connected with the *modus tollens*:

If 'man' is understood, 'animal' must have been understood *first*.
If the understanding of 'animal' is taken away, the understanding of
'man' is taken away.

Ibn Sīnā proves this on all three epistemic levels based on his division of the 'signification' (*dalāla*) of the universal simple linguistic expression (*al-lafẓ al-mufrad al-kullī*).¹³³ The subtractive process starts from what is prior to us and proceeds to what is prior in nature. Thereby it is a bottom-up abstraction process from the (a) subtraction of implicates of things in concrete existence via the (b) subtraction of implicates of things in imaginative existence, to the non-subtractable implicates of the conceptualization of things.¹³⁴

Bibliography

- Alexander of Aphrodisias. *Alexandri Aphrodisiensis in Aristotelis analyticorum priorum librum 1 commentarium*. Ed. by Maximilian Wallies. CAG 11.1. Berlin: Reimer, 1883.
- Alexander of Aphrodisias. *Alexandri Aphrodisiensis in Aristotelis Topicorum libros octo commentaria*. Ed. by Maximilian Wallies. CAG 11.2. Berlin: Reimer, 1891.
- Alexander of Aphrodisias. *Alexandri Aphrodisiensis praeter commentaria scripta minora: Quaestiones—De fato—De mixtione*. Ed. by Ivo Bruns. CAG, Suppl. vol. 11.2. Berlin: Reimer, 1892.
- Alexander of Aphrodisias. *On Aristotle Prior Analytics 1.1–7*. trans. By Jonathan Barnes, Susanne Bobzien, Kevin Flannery and Katerina Ierodiakonou. London: Bloomsbury Academic, 2013.

¹³² Ibn Sīnā, *K. an-Najāt*, 45,17–46,12. For a complete translation of the passage see Asad Ahmed, *Avicenna's Deliverance: Logic* (Oxford: Oxford University Press, 2011), 6–8.

¹³³ The terms 'universal' (*kullī*) and 'particular' (*juzʿī*) in *al-lafẓ al-mufrad al-kullī* and *al-lafẓ al-mufrad al-juzʿī* must be *pros ti* terms, since not the linguistic expression is universal or particular, but its referents.

¹³⁴ Cf. Strobino, "Per se, Inseparability, Containment and Implication," 239: "Avicenna understands the three levels to represent progressively stronger senses of necessity."

- Alexander of Aphrodisias. *On Aristotle Prior Analytics 1.32–46*. Trans. by Ian Mueller. London: Bloomsbury Academic, 2013.
- Alexander of Aphrodisias. *On Aristotle Topics 2*. Trans. by Laura M. Castelli. London: Bloomsbury Academic, 2020.
- Alexander of Aphrodisias. *Quaestiones 1.1–2.15*. Trans. by Robert Sharples. London: Duckworth, 1992.
- Aristotle. *An-Naṣṣ al-Kāmil li-Manṭiq Aristū*. 2 vols. Ed. by Farīd Jabr. Beirut: Dār al-Fikr al-lubnānī, 1999.
- Aristotle. *De divinatione per somnum 1, Aristotelis Opera*. Vol. III. Ed. by Immanuel Bekker. Oxford: Oxford University Press, 1837.
- Aristotle. *Analytica posteriora, Aristotelis Opera*. Vol. I. Ed. by Immanuel Bekker. Oxford: Oxford University Press, 1837.
- Aristotle. *Categoriae, Aristotelis Opera*. Vol. I. Ed. by Immanuel Bekker. Oxford: Oxford University Press, 1837.
- Aristotle. *De anima, Aristotelis Opera*. Vol. III. Ed. by Immanuel Bekker. Oxford: Oxford University Press, 1837.
- Aristotle. *De partibus animalium libri IV, Aristotelis Opera*. Vol. V. Ed. by Immanuel Bekker. Oxford: Oxford University Press, 1837.
- Aristotle. *Metaphysica, Aristotelis Opera*. Vol. VII. Ed. by Immanuel Bekker. Oxford: Oxford University Press, 1837.
- Aristotle. *Physica, Aristotelis Opera*. Vol. I. Ed. by Immanuel Bekker. Oxford: Oxford University Press, 1837.
- Aristotle. *Topica, Aristotelis Opera*. Vol. I. Ed. by Immanuel Bekker. Oxford: Oxford University Press, 1837.
- Aristotle. *Volumen tertium librorum deperditorum fragmenta. Editio altera addendis instruxit fragmentorum collectionem*. Ed. by Olof Gigon. Berlin, e.a.: De Gruyter, 1987.
- Arnzen, Rüdiger. *Averroes. On Aristotle's "Metaphysics": An Annotated Translation of the So-called "Epitome"*. Berlin: De Gruyter, 2010.
- Ahmed, Asad. *Avicenna's Deliverance: Logic*. Oxford: Oxford University Press, 2011.
- Badawī, 'Abd ar-Raḥmān. *Aristū 'inda l-'Arab I*. Cairo: Maktabat an-Nahḍa al-Miṣriyya, 1947.
- Barnes, Jonathan. "Galen on logic and therapy." In *Galen's Method of Healing*. Ed. by Richard Durling and Fridolf Kudlien. Leiden: Brill, 1991, 50–102.
- Barnes, Jonathan. *The Complete Works of Aristotle*. Vol. I–II. Princeton: Princeton University Press, 1995.
- Barnes, Jonathan, Jacques Brunschwig, Miles Burnyeat and Malcolm Schofield (eds.). *Science and Speculation: Studies in Hellenistic Theory and Practice*. Cambridge/New York: Cambridge University Press; Paris: Edition de la maison des science de l'homme, 1982.
- Berti, Enrico. "Aristotle and Greek Geometrical Analysis," *Philosophia Scientiae* 26.3 (2021): 9–21.

- Blankinship, Khalid Yahya. *The Inimitable Qur'ān*. Leiden/Boston: Brill, 2019.
- Bobzien, Susanne. "Alexander of Aphrodisias on Aristotle's Theory of the Stoic Indemonstrables." In *Strategies of Argument: Essays in Ancient Ethics, Epistemology, and Logic*. Ed. by Mi-Kyoung Lee. Oxford: Oxford University Press, 2014, 199–228.
- Bobzien, Susanne. "Peripatetic Hypothetical Syllogistic in Galen—Propositional Logic off the Rails?" *Rhizai: A Journal for Ancient Philosophy and Science* 2 (2004): 57–102.
- Bobzien, Susanne. "Pre-Stoic Hypothetical Syllogistic in Galen's *Institutio Logica*." *Bulletin of the Institute of Classical Studies* 45 (2002): 57–72.
- Bobzien, Susanne. "The Stoics." In *The Cambridge History of Hellenistic Philosophy*. Ed. by Keimpe Algra, Jonathan Barnes, Jaap Mansfeld and Malcolm Schofield. Cambridge: Cambridge University Press (1999), 92–176.
- Bonitz, Hermann. *Index Aristotelicus*. Berlin: Reimer, 1870.
- Cleary, John J. "On the Terminology of 'Abstraction' in Aristotle." *Phronesis* 30 (1985): 13–45.
- Cohoe, Caleb. "When and Why Understanding needs *Phantasmata*: A Moderate Interpretation of Aristotle's *De Memoria* and *De Anima* on the Role of Images in Intellectual Activities." *Phronesis* 61 (2016): 337–372.
- Dorion, Louis-André. "Aristotle's definition of elenchus in the light of Plato's *Sophist*." In *The Development of Dialectic from Plato to Aristotle*. Ed. by Jakob L. Fink. Cambridge: Cambridge University Press, 2012, 251–269.
- Euclides. *Euclidis Opera omnia* ediderunt I. Heiberg et H. Menge, Vol. 4: *Euclidis Elementa*, Librum XI–XIII edidit et latine interpretatus est by I.L. Heiberg. Leipzig: Teubner, 1885.
- Fārābī, Abū Naṣr al-. *Jawabāt li-Masā'il Su'ila 'anhā*. In *al-A'māl al-Falsafiyya*, part 1. Ed. by Ja'far Āl Yāsīn. Beirut: Dār al-manāhil, 1992, 313–69.
- Fārābī, Abū Naṣr al-. *K. al-Burhān wa-Sharā'ih al-Yaqīn*. Ed. by Majid Fakhry. Beirut: Dār al-mashriq, 1987.
- Fārābī, Abū Naṣr al-. *K. al-Jadal. Al-Manṭiq 'inda l-Fārābī*. Vol. III. Ed. by Rafiq al-'Ajam. Beirut: Dār al-mashriq, 1986.
- Fārābī, Abū Naṣr al-. *K. al-Qaṭāghūriyās ay al-Māqūlāt. Al-Manṭiq 'inda l-Fārābī*. Vol. I. Ed. by Rafiq al-'Ajam. Beirut: Dār al-Mashriq, 1985, 89–131.
- Fārābī, Abū Naṣr al-. *K. al-Qiyās, K. al-Qiyās aṣ-Ṣaghūr, and K. at-Taḥlīl. Al-Manṭiq 'inda l-Fārābī*. Vol. II. Ed. by Rafiq al-'Ajam. Beirut: Dār al-Mashriq, 1986.
- Galen. *Claudii Galeni Opera omnia*, vol. x: *De methodo medendi*. Ed. by Karl Gottlob Kühn. Leipzig: Car. Cnoblochii, 1825.
- Galen. *De constitutione artis medicae ad Patrophilum*. In *Claudii Galeni Opera Omnia*, vol. I. Ed. by Karl Gottlob Kühn. Leipzig: Car. Cnoblochii, 1821.
- Galen. *On Medical Experience. First Edition of the Arabic Version with English Translation and Notes* by Richard Walzer. London, e.a.: Oxford University Press, 1944.

- GlossGA-Glossarium Graeco-Arabicum. <https://glossga.bbaw.de/>. Accessed April 12, 2023.
- Gutas, Dimitri. "Medical theory and scientific method in the age of Avicenna." In *Before and After Avicenna*. Ed. by David Colum Reisman with the assistance of Ahmed H. Al-Rahim. Leiden: Brill, 2003.
- Gyekye, Kwame. "The Term Istithnā' in Arabic Logic." *Journal of the American Oriental Society* 92 (1972): 88–92.
- Hasnawi, Ahmed. "Topic and Analysis: The Arabic Tradition." In *Whose Aristotle? Whose Aristotelianism?* Ed. by Robert W. Sharples. Aldershot, e.a.: Ashgate, 2001, 28–62.
- Ibn Manẓūr. *Lisān al-'Arab*. 15 vols. Beirut: Dār Sādir, 1955–1956.
- Ibn Sīnā. *Avicenna's De Anima: Being the Psychological Part of Kitāb al-Shifā'*. Ed. by Fazlur Raḥmān. London: Oxford University Press, 1959.
- Ibn Sīnā. *Avicenna, The Healing, Logic: Isagoge*. Ed. by Silvia Di Vincenzo. Berlin: De Gruyter, 2021.
- Ibn Sīnā. *K. an-Najāt fī l-Ḥikma al-Manṭiqiyya wa-ṭ-Ṭabī'iyya wa-l-Ilāhiyya*. Ed. by Majid Fakhry. Beirut: Dār al-Āfāq al-Jadida, 1985.
- Ibn Sīnā. *K. ash-Shifā', al-Ilāhiyyāt* (1). Ed. by Jūrj Qanawātī and Sa'īd Zāyid. Cairo: al-Hay'a al-Āmma li-Shu'ūn al-Maṭābi' al-Amīriyya, 1960.
- Ibn Sīnā. *K. ash-Shifā', al-Ilāhiyyāt* (2). Ed. by Muḥammad Yūsuf Mūsā, Sulaymān Dunyā and Sa'īd Zāyid. Cairo: al-Hay'a al-Āmma li-Shu'ūn al-Maṭābi' al-Amīriyya, 1960.
- Ibn Sīnā. *K. ash-Shifā', al-Manṭiq, al-Burhān*. Ed. by Abū l-'Alā' 'Afīfī. Cairo: al-Maṭba'a al-Amīriyya, 1956.
- Ibn Sīnā. *K. ash-Shifā', al-Manṭiq* v1, *al-Jadal*. Ed. by Ibrahim Madkour, Abd al-Aziz F. Ahwani. Cairo: al-Maṭba'a al-Amīriyya, 1956.
- Ibn Sīnā. *K. al-Qānūn fī aṭ-Ṭibb*. Rome: Typographia Medicea, 1593.
- Ibn Sīnā. *K. al-Qānūn fī aṭ-Ṭibb*. 3 vols. Būlaq: al-Maṭba'a al-Āmira, 1294AH.
- Kahn, Charles H. "The Greek Verb 'to Be' and the Concept of Being." *Foundations of Language* 2 (1966): 245–265.
- Kalbarczyk, Alexander. *Predication and Ontology: Studies and Texts on Avicennian and Post-Avicennian Readings of Aristotle's Categories*. Berlin: De Gruyter, 2018.
- Kieffer, John. *Galen's Institutio Logica*. Baltimore: Johns Hopkins Press, 1964.
- Lameer, Joep. *Al-Fārābī and Aristotelian Syllogistics*. Leiden, e.a.: Brill, 1994.
- Liddell, Henry George and Scott, Robert. *A Greek-English Lexicon*. Oxford: At the Clarendon Press, 1968.
- Menn, Steven. "Al-Fārābī's Kitāb al-Ḥurūf and his Analysis of the Senses of Being." *Arabic Sciences and Philosophy* 18 (2008): 59–97.
- Morrison, Donald. "Tekmeriodic Proof: Philoponus and Simplicius on Tecmeriodic Proof." In *Method and Order in Renaissance Philosophy of Nature: The Aristotle Commentary Tradition*. Ed. by Daniel A. Di Liscia, Eckhard Kessler and Charlotte Methuen. Aldershot, e.a.: Ashgate, 1997, 1–22.

- Philoponus. *Iohannis Philoponi in Aristotelis Analytica Posteriora Commentaria cum anonymo in librum 11*. Ed. by Maximilian Wallies. CAG XIII. Berlin: Reimer, 1909.
- Philoponus. *On Aristotle Posterior Analytics 1.1–8*. Trans. by R. McKirahan. London: Duckworth, 2008.
- Proclus. *Procli Diadochi in primum Euclidis Elementorum librum commentarii*. Ed. by Gottfried Friedlein. Leipzig: Teubner, 1873.
- Radovic, Filip. "Aristotle on Signs in Sleep: Natural Signification and Dream Interpretation." In *Forms of Representation in the Aristotelian Tradition*, vol. 2: *Dreaming*. Ed. by Christina Thomsen Thörnqvist and Juhana Toivanen. Leiden: Brill, 2022, 61–87.
- Rashed, Marwan. "Priorité de l'εἶδος ou du γένος entre Andronicos et Alexandre: vestiges arabes et grecs inédits." *Arabic Sciences and Philosophy* 14 (2004): 9–63.
- Rashed, Roshdi. "L'analyse et la synthèse selon Ibn al-Haytham." In *Mathématique et philosophie de l'antiquité à l'âge classique*. Ed. by Roshdi Rashed. Paris: Éditions de centre nationale de la recherche scientifique, 1991, 131–162.
- Ruge, Fabian. *The Stoic Theory of Sign and Proof*. Basel/Zürich: Schwabe, 2022.
- Ruland, Hans-Jochen. "Zwei arabische Fassungen der Abhandlung des Alexander von Aphrodisias über die Universalia (Quaestio 1 11a)." *Nachrichten der Akademie der Wissenschaften in Göttingen* 10. Göttingen: Vandenhoeck & Ruprecht, 1979.
- Sedley, David. "On Signs." In *Science and Speculation*. Ed. by Jonathan Barnes, Jacques Brunschwig, Miles Burnyeat, Malcolm Schofield. Cambridge: Cambridge University Press, 1982, 239–72.
- Sextus Empiricus. *In Three Volumes*. Vol. 1: *Outlines of Pyrrhonism*. Ed. and trans. by Robert Gregg Bury. Loeb Classical Library. London: William Heineman/ Cambridge, Mass.: Harvard University Press, 1933.
- Sextus Empiricus. *In Three Volumes*. Vol. 11: *Against The-Logicians*. Ed. and trans. by Robert Gregg Bury. Loeb Classical Library. London: William Heineman/ Cambridge, Mass.: Harvard University Press, 1935.
- Sharples, Robert W. *Alexander of Aphrodisias: Quaestiones 1.1–2.15*. London: Bloomsbury Academic, 1992.
- Sharples, Robert W. "Alexander of Aphrodisias on Universals: Two Problematic Texts." *Phronesis* 152 (2005): 43–55.
- Sinai, Nicolai. *Key Terms of the Qur'an: A Critical Dictionary*. Princeton: Princeton University Press, 2023.
- Striker, Gisela. "Aristoteles über Syllogismen 'aufgrund einer Hypothese.'" *Hermes* 107 (1979): 33–50.
- Strobino, Riccardo. "Avicenna on the Indemonstrability of Definition." *Documenti e studi sulla tradizione filosofica medievale* 21 (2010): 113–163.
- Strobino, Riccardo. "Per se, Inseparability, Containment and Implication: Bridging the Gap between Avicenna's Theory of Demonstration and Logic of the Predicables." *Oriens* 44.3–4 (2016): 181–266.

- Tweedale, Martin M. "Alexander of Aphrodisias' Views on Universals." *Phronesis* 29 (1984): 279–303.
- van Ophuijsen, Jan M. *Alexander of Aphrodisias: On Aristotle Topics 1*. London: Duckworth, 2001.
- Vinkesteijn, Robert. *Philosophical Perspectives on Galen of Pergamum: Four Case-Studies on Human Nature and the Relation between Body and Soul*. Philosophia Antiqua, vol. 166. Leiden: Brill, 2022.
- Zeuthen, Hieronymus G. "Die geometrische Konstruktion als 'Existenzbeweis' in der antiken Geometrie." *Mathematische Annalen* 47 (1896): 222–228.
- Zimmermann, Fritz. *Al-Farabi's Commentary and Short Treatise on Aristotle's De Interpretatione*. London: Oxford Univ. Press, 1982.
- Zimmermann, Friedrich W. "Al-Farabi und die philosophische Kritik an Galen von Alexander zu Averroes." In *Akten des VII. Kongresses für Arabistik und Islamwissenschaft; Göttingen, 15. bis 22. August 1974 (Abhandlungen der Akademie der Wissenschaften in Göttingen, Philologisch-historische Klasse, Dritte Folge, Nr. 98)*. Ed. by Albert Dietrich. Göttingen: Vandenhoeck & Ruprecht, 1976, 401–414.

On Avicenna's Theory of Conception and Assertion: Towards a Systematic Ambiguity Reading

Zhenyu Cai

1 Introduction

Ever since Avicenna presented conception and assertion as fundamental categories in the classification of knowledge, logicians in the post-Avicennian tradition have engaged in a debate over the epistemological and metaphysical features of these two controlling notions.¹ We can begin our assessment of this debate with a concise summary of the point of departure by al-'Allāma al-Ḥillī:

Text 1:

If you judge [a conception such as “man”] to be a certain matter (as in “man is an animal”), then the aggregate of the conception “man” and the conception “animal” and the judgment of the relation one has to the other is said to be an assertion. This is according to the custom of Fakhr ad-Dīn and his followers, and it differs from what the Ancients laid down in their terms of art; for the Ancients considered the assertion to be the judgment itself alone, and the conception a condition for the assertion.²

¹ For a general introduction to the two terms in Arabic philosophy, see Harry A. Wolfson, “The Terms *Taṣawwur* and *Taṣdīq* in Arabic Philosophy and Their Greek, Latin, and Hebrew equivalents,” *The Muslim World* 33, no. 2 (1943): 114–128. For a brief outline of the post-Avicennian discussion of the two terms, see Joep Lameer, *Conception and Belief in Ṣadr Al-Dīn Shīrāzī* (Tehran: Iranian Institute of Philosophy, 2006), 64–77. For a discussion of Avicenna's own usage of the two terms in the context of scientific knowledge, see Riccardo Strobino, *Avicenna's Theory of Science: Logic, Metaphysics, Epistemology* (Oakland: University of California Press, 2021), 34–44.

² Text 1 is a translation by Tony Street from al-Ḥillī, al-'Allāma. *Al-Qawā'id al-Jalīya fī Sharḥ al-Risāla ash-Shamsīya*, ed. by Fāris Tabriziyan (Qum: Mu'assasa an-Nashr al-Islāmī, 2012 [1432AH]), 183, lines 1–5 (henceforth referred to as *al-Qawā'id*). Text 2 is from Di Vincenzo's translation of *Kitāb ash-Shifā': al-Madkhal* (henceforth referred to as *al-Madkhal*) with some revisions based on *Kitāb ash-Shifā': al-Madkhal*, ed. by Georges C. Anawāti, Maḥmūd al-Khuḍayrī, and Aḥmad Fu'ād al-Ahwānī (Cairo: Organisation Générale des Imprimeries Gouvernementales, 1952); for Di Vincenzo's full translation, see Silvia Di Vincenzo, *Avicenna, The Healing, Logic: Isagoge: A New Edition, English Translation and Commentary of the Kitāb*

According to al-Ḥillī, Avicenna's views on conception and assertion represent the Ancients' view, which is distinct from the new philosophical tradition initiated by Fakhr ad-Dīn ar-Rāzī.³ While both Avicenna and ar-Rāzī consider conception to be the occurrence of a form in the mind, they disagree on assertion. Avicenna considers assertion to be a judgement and views conception as a precondition of an assertion—but not a constituent of that assertion. We can summarize the Ancients' view (which aligns with that of Avicenna) in the following theses:

T1: The judgment itself is said to be an assertion.

T2: The conception is a pre-condition for the judgment.

Ar-Rāzī opens up a whole new tradition that starkly contrasts with the Ancients'. In ar-Rāzī's view, the assertion is not a judgment taken exclusively as a mental act; it is an aggregate composed of the judgmental act and conceptions. For example, my assertion that "a human is rational" is an aggregate in which two conceptions ("human" and "animal") stand in a predicative relationship by virtue of the judgmental act. Ar-Rāzī regards the whole aggregate (judging-animal-as-rational) as an assertion—a view that we can summarize in the following thesis:

T3: Assertion is an aggregate of the judgment and conceptions.

For ar-Rāzī, the conception is not merely the condition of the assertion; it is fundamentally a part of the assertion. However, from the reported Avicennian view, it is clear that the conception cannot be a part of the assertion, as the assertion is the judgmental act itself. Conceptions are not parts of my judgmental act but are instead what is judged by that act.⁴

al-Madḥal of *Avicenna's* Kitāb al-Šifā' (Boston: De Gruyter, 2021). Texts 3–5 are my own translations from *ash-Shifā': al-Burhān*, ed. by Abū l-'Alā' 'Afīfī (Cairo: Government Press, 1956), henceforth referred to as *al-Burhān*. Texts 6–9 are from Ahmed's translation of *Kitāb an-Najāt* (henceforth referred to as *al-Najāt*) with revisions based on *Kitāb an-Najāt*, ed. by Muḥammad Taqī Dānishpazhūh (Tehran: Dānishgāh-i Tihirān, 1985); for Ahmed's full translation, see Asad Q. Ahmed, *Avicenna's Deliverance: Logic, Translation and Notes* (Oxford University Press, 2011).

3 For a discussion of al-Ḥillī's usage of the term "the Ancients" (*al-qudamā*), see Tony Street, "Al-'Allāma al-Ḥillī (d. 1325) and the Early Reception of Kātib's *Shamsīya*: Notes Towards a Study of the Dynamics of Post-Avicennan Logical Commentary," *Oriens* 44, no. 3–4 (2016): 283.

4 It is worth noting that, in addition to the two approaches mentioned above, there is also a third view in the later tradition developed by Mulla Sadra. For Sadra, the assertion itself

This essay aims to expand on the picture constructed by al-Ḥilli by comprehensively examining Avicenna's detailed comments on conception and assertion. While I do not argue that T1 and T2 are wrong, I argue that they are imprecise. In doing so, I hope to establish the following four points.

First, Avicenna makes a clear distinction between conception/assertion and that which is conceived/that which is asserted. The latter two constitute nothing but meaning (*ma'nā*). In other words, for Avicenna, that which is conceived and that which is asserted are on the same level. Second, conception and assertion are not merely intellectual. Third, Avicenna uses these two controlling notions in a systematically ambiguous way; they are the so-called *mushakkik* terms.⁵ Fourth, Avicenna does not clarify whether assertion, taken as the judgmental act, is the judgmental force or a necessary condition for predication. In many texts, Avicenna seems to anticipate the doctrine that we today would call the force-content distinction; in others, however, he seems to argue against the judgmental force reading.

2 The Typical View of Conception and Assertion

Consider the following representative text in which Avicenna presents his doctrine of conception and assertion:

Text 2:

A thing is known in two ways: one of the two [ways] is that it is merely conceived (*yutaṣawwara*), so that if it has a name and [the name] is then pronounced, its meaning (*ma'nāhu*) is represented (*tamaththala*) in the mind, even if there is no truth (*ṣidq*) or falsehood (*kidb*). This is like when "man" or "do such and such!" is said; if you pay attention to (*waqafat* 'alā) the meaning (*ma'nā*) that you speak of by [the name], you have conceived (*taṣawwarta*) it. The second way is that there is an asser-

is neither a mental act nor an aggregate but a type of conception that implies judgment; he reformulates the distinction between the conception and the assertion as a distinction between two types of conceptions: the conception that is open to judgment and the conception that implies judgment. For a detailed discussion of Sadra's view, see Lameer, *Conception and Belief*, 36–57.

5 An expression is *mushakkik* if it has different but interconnected meanings in the sense that they are all different modifications of a single abstract meaning. For a general introduction to Avicenna's doctrine of *mushakkik*, see Alexander Treiger, "Avicenna's Notion of Transcendental Modulation of Existence and Its Greek and Arabic Sources," *Documenti e Studi sulla Tradizione Filosofica Medievale* 21 (2010): 165–198.

tion (*taṣdīq*) along with the conception (*at-taṣawwur*). If it is said to you, for example, "every whiteness is an accident," not only does the conception of meaning (*ma'nā*) of this sentence occur (*yaḥṣul*) to you from this, but you also assert (*ṣaddaḡta*) [the fact] that this is so. When you doubt whether it is or is not the case, you have conceived what is said but not yet asserted it, for you cannot doubt what you do not conceive (*tataṣawwara*) and understand (*tafhama*). Every assertion is with a conception, but not vice versa. The conception of the meaning (*al-ma'nā*) like this informs you that the form of the composition and that from which [the whole] is composed both occur in the mind, like whiteness and accident. Assertion is that a relation occurs in the mind, [which is that] the form related to the things themselves is in conformity with [the things themselves]; denial contradicts this. Similarly, a thing is unknown in two ways: one is through conception, the other is through assertion.⁶

Avicenna claims that one can know things through either conception or assertion. For conception, things are conceived insofar as their meaning (*ma'nāhu*) is represented in the mind; in other words, we conceive things by conceiving their meaning. Moreover, Avicenna uses the phrase *waḡaḡta 'alā* (pay attention to) to characterize how one cognizes meaning in the mind. This phrasing choice suggests that the meaning in the mind is not something of which one is unaware; rather, one has cognitive access to the meaning in conception once one hears or sees its linguistic expression.

Things are also known through the assertion: things are asserted insofar as their meanings are asserted. As with conception, things are the ultimate object of assertion, while meanings are the direct objects of assertion. The key distinction between conception and assertion is that, in principle, when one conceives the meaning of something, one can ignore whether that meaning is true or false. In contrast, assertion necessarily involves truth and falsehood. Avicenna provides a concrete example to illustrate how assertion is always accompanied by (or "coupled to") conception. Consider the statement "every whiteness is an accident." One may not be certain about whether this statement is true or false, but the statement is still meaningful regardless of its truth-value. In such cases, meanings are conceived but not asserted.

A significant point that Avicenna highlights with this example is that one cannot only conceive the meaning of a single expression but also conceive the meaning expressed by a statement. The meaning conceived includes both sim-

⁶ Avicenna, *al-Madkhal*, 17, lines 7–18.

ple notions and propositions to which no assertion is given. This example also illustrates that, for Avicenna, the objects of conception and objects of assertion are the same; what is conceived may also be the object of assertion.

We can see this point even more clearly in Text 3, in which Avicenna explicitly introduces the distinction between conception/assertion and that which is conceived/that which is asserted:

Text 3:

It is right that conception is made to be a kind of principle of assertion, because everything that is asserted (*muṣaddaq bihī*) is conceived (*mutaṣawwar*), [but] not everything that is conceived is asserted. In this sense, although all of the meaning of the simple expression and of the compound expression that is not composed from truth-apt statements is conceived, not all of it is asserted.⁷

That which is conceived and that which is asserted characterize the object of conception and assertion—meanings and things—while conception and assertion characterize the mental state that makes meaning occur in our mind. We can conclude that, for Avicenna, the object of conception and assertion is only on the level of meaning because even things, insofar as they are conceived or asserted, are meanings. Avicenna's theory of signification clearly illustrates this idea: an expression directly signifies an impression and ultimately signifies things.⁸ Both things and impressions are called meanings. For Avicenna, meaning characterizes that to which one's mind is directed amid the awakening of mental or physical signs. A mental impression can awaken one's mind such that it hones the mind's focus on external things. Therefore, things are called meanings in relation to mental impressions. Furthermore, an expression can also prompt one's mind to be aware of a mental impression. In this sense, the impression is a meaning in relation to the expression.⁹ In summary, the objects of conception and assertion—that which is conceived and that which is asserted—are on the same level as the layer of meanings to which one's mind is directed under the guidance of expressions or mental impressions.

7 Avicenna, *al-Burhān*, 53, lines 4–6.

8 Mental impressions are also called “representations” or “forms.” For a general outline of Avicenna's theory of signification, see Deborah L. Black, “Intentionality in Medieval Arabic Philosophy,” *Quaestio* 10 (2010): 65–81.

9 The impression-meaning differs from the thing-meaning in terms of the ontological commitment of their candidates. Whatever is signified as an impression is committed to mental existence; whatever is signified as a thing is committed to external existence.

3 Are Conception and Assertion Merely Intellectual?

As already established, Avicenna is well known for dividing knowledge into two types: conception and assertion.

Text 4:

Since the knowledge acquired by means of thought (*al-ʿilm al-muktasab bi-l-fikra*) and [the knowledge] available without being acquired through thought (*al-hāṣil bi-ghayr iktisāb fikrī*) are two types: one is assertion, and the other is conception; the assertions acquired by means of thought are available to us through some syllogism; the conceptions acquired by means of thought are available to us through some definition.¹⁰

Text 4 is extracted from *al-Burhān*, where Avicenna focuses on the conception that grasps quiddity and the assertion produced by syllogism. He distinguishes between knowledge acquired through thought and knowledge that occurs directly in our minds, describing the former as conception and the latter as assertion. Given this context, Avicenna's division of knowledge might suggest that only the intellect can produce both conception and assertion. However, this interpretation does not necessarily follow, even if the rational power is indeed capable of producing both. Alternatively, some conceptions/assertions could be perceptual, produced by internal or external senses, while others are intellectual, produced by the intellect. This alternative reading, which restricts the division of knowledge in Text 4 to conceptions and assertions produced specifically by the intellect, may be more plausible. This is because it aligns with passages where Avicenna applies conception and assertion to the internal senses.

Text 5:

It is also clear that this faculty is not the imaginative faculty (*al-quwwa al-mutakhayyila*); this is because the imaginative faculty acts without believing that things are in accordance with how they are informed (*ʿalā ḥasabī taṣawwurātihā*) [in the soul]. This faculty is called the estimative faculty.¹¹

¹⁰ Avicenna, *al-Burhān*, 51, lines 6–8.

¹¹ Avicenna, "Compendium on the Soul (*Kitāb fī an-Nafs ʿalā Sunnat al-Ikhtiṣār*)," trans. by S. Landauer, *Zeitschrift Der Deutschen Morgenländischen Gesellschaft* 29 (1875): 359, lines 19–21.

In Text 5, Avicenna attempts to clarify a critical difference between the imaginative faculty and the estimative faculty. On the one hand, the two have similar functions: the operation of the two faculties can receive the relevant forms. On the other hand, the estimative faculty usually makes judgments on forms, believing that things in the external world conform to how they occur in the mind, while the imaginative faculty does not make judgments at all; it simply combines or divides forms arbitrarily. For example, when I imagine a unicorn, I am typically aware of the fact that I am uncertain about whether that unicorn exists in the world.

It is worth noting that, when talking about the object of the imaginative faculty, Avicenna uses *taṣawwur*, clearly suggesting that *taṣawwur* is not unique to the rational faculty. One potential explanation for this textual phenomenon is that, unlike Avicenna's use of *taṣawwur* in Text 4, he also uses *taṣawwur* in a more general way to refer to different types of representation. This general use of *taṣawwur* is, therefore, not limited to intellectual representation.

In my view, this suggestion is plausible, but it is also worth noting that his general use is not arbitrary. We should understand the reason behind the general usage of *taṣawwur*: Why can the use of *taṣawwur* extend to the internal senses? Again, if we note that the object of conception is meaning, then the application of conception to characterize the object of the imaginative faculty does not present any problems for Avicenna.

In Avicenna's view, both the imaginative faculty and the estimative faculty can receive or operate on meaning (though individualized). One implication of this reading is that perception can be conceptual insofar as the estimative faculty or imaginative faculty partially produce the perception. We need only note that the conception used in the context of perception refers not to intellectual conception but estimative perception. The extension of assertion/judgment also accompanies the extension of conception into the internal senses. This extension is clearly exhibited in the idea that the estimative faculty is the judging principle (*ar-raʿīṣatu l-ḥākima*) in animals.¹² In summary, the picture we see here is closer to the one mentioned earlier in which both perceptual cognition and intellectual cognition contain meanings insofar as they are conceived and can be asserted.

12 Avicenna, *Avicenna's De Anima (Arabic Text): Being the Psychological Part of Kitāb al-Shifā'*, ed. by Fazlur Rahman (London: Oxford University Press, 1959), 166, lines 16–18; 167, lines 1–5.

4 Systematic Ambiguity?

Returning to Text 2, recall that Avicenna emphasizes that there is an asymmetrical relationship between conception and assertion: assertion is always coupled with conception but not vice versa, as the assertion of any meaning presupposes a conception of the meaning. Moreover, as one might doubt a particular conception, one might withdraw one's assertion—but doubt still presupposes conceiving.

However, what substantial understanding of conception and assertion can support the asymmetry? There are at least three ways to interpret the asymmetry. One interpretation suggests that Avicenna anticipates a version of the “force-content” distinction: one can exert different forces towards the same content. In this interpretation, meaning is similar to content, while conception and assertion are two different forces or attitudes towards meaning. In other words, in conception, one has access to the meaning but may ignore its truth or falsity; in assertion, one takes meaning as corresponding to the things themselves.

Recall Text 4, in which Avicenna frames conception and assertion as two types of knowledge. One could argue that knowledge is different from knowing because knowledge refers to that which is known as the object of knowing, an object that is not necessarily mental. However, as a mental attitude or state, knowing is essentially mental. Text 4 points to the second way of understanding conception and assertion, namely that they are not two types of mental attitudes. Instead, they are two types of knowledge or what is known. The second interpretation is readily apparent in the following passage:

Text 6:

All cognition (*ma'rifa*) and all knowledge are either conception or assertion. The conception is the prior knowledge and is acquired through definition and what is like [definition], such as our conception of the quiddity of man. The assertion is only acquired through syllogism and what is like it, such as our assertion to [the fact] that all things have a single principle. Definition and syllogism are two tools through which you acquire what is known (*al-ma'lūmāt*), which was unknown [at first], and which then becomes known through deliberation.¹³

13 Avicenna, *al-Najāt*, 7, lines 3–7.

Here, Avicenna distinguishes between cognition and knowledge, which is different from the distinction between types of knowledge in Text 4. However, Avicenna does not introduce a third mode of cognition here. Instead, the use of “cognition” in the first sentence refers to the knowledge that occurs directly in the mind, while instances of “knowledge” refer to that which is acquired through thought. Thus, in this paragraph, Avicenna is more precise in his use of “knowledge.” After identifying conception and assertion as what can be acquired through syllogism and definition, he explicitly asserts that we acquire what is known through definition and syllogism. In this sense, conception and assertion seem to be two types of knowledge.

The third interpretation views “conception” not as an object or an attitude, but as “being-informed”—a fundamental aspect inherent to all modes of thought that involves access to meaning. Whether one doubts or asserts, one is informed by meaning. Although the specific modes of being informed vary, they all share a common structural feature: being informed by meaning. Under this interpretation, conception is not merely one type of thinking attitude among others; instead, it is a universal feature of all thinking that serves as the necessary precondition for all cognitive attitudes.

The third interpretation of “conception” accommodates two different readings of “assertion”. Firstly, the being-informed interpretation of conception is consistent with an attitude-based notion of assertion, where the focus is on the cognitive attitude taken towards a proposition. Secondly, it is compatible with another interpretation of assertion, which views it as a composite of an attitude and its object. In this framework, an assertion is seen as the combination of an attitude and certain meanings. For instance, when someone asserts that “every whiteness is an accident”, they do not regard merely the proposition itself or the attitude alone as the assertion. Instead, the assertion is considered to be the composite of both the proposition and the attitude.

Table 3.1 represents the different readings of “conception” and “assertion.”

In what sense is assertion always coupled with conception? There are two possibilities. The first, known as the co-obtaining reading, posits that when S asserts P, S must also conceive P simultaneously. The second, the temporal priority reading, suggests that when S asserts P, it presupposes a prior occurrence of conceiving P, such that the conception of P is temporally prior to the assertion. The co-obtaining reading appears incompatible with the attitude-based interpretation of “conception”. Proponents of this view might argue that conceiving a proposition involves adopting a truth-value-neutral stance towards it. Thus, in asserting a proposition, one cannot maintain a neutral stance about its truth or falsity. In other words, while asserting a proposition, one cannot simultaneously doubt or remain neutral towards it. Consequently, it may be

TABLE 3.1

	Conception	Assertion
Attitude reading	Attitude	Attitude
Object reading	What is known	What is known
Being-informed reading	Being-informed-by- <i>ma'nā</i>	Possibility one: Attitude Possibility two: An aggregate of an attitude and its object

concluded that it is not possible to conceive and assert the same proposition at the same time.¹⁴

Alternatively, proponents of the co-obtaining reading may interpret conception as being-informed, positing that any attitude towards meaning presupposes that one’s mind is informed by that meaning. Therefore, whenever one asserts P, it is presupposed that one’s mind has already been informed by P; thus, both assertion and the feature of being-informed occur simultaneously in the mind. The interpretation of assertion might significantly influence how conception, understood as being-informed, is related to assertion. If assertion is viewed as an attitude, then being-informed serves as a precondition for this attitude. However, if assertion is considered an aggregate of attitude and its object, being-informed is not merely a precondition but an integral component of the aggregate.

I have raised several potential readings concerning “conception” and “assertion.” It is worth questioning which reading is the best. Perhaps the best reading somehow merges all three interpretations. As each of these three interpretations is subject to exegetical difficulty, it is untenable that Avicenna adheres to only one of the three approaches. Consider the content-force reading: the content-force distinction and the conception-assertion distinction do not completely map onto each other because, in the standard contemporary view, content is propositional and forces are propositional attitudes. However, Avicenna does not necessarily treat meaning as propositional. A typical Avicennian instance of “conceiving” pertains to the meaning of a single expression, which can be expressed in propositional form. However, the conception of the

14 Note that the attitude-based reading is clearly compatible with the temporal priority reading; it is conceivable that, when one asserts P, one must presuppose a mental state in which one first takes a neutral attitude towards P that temporally exists prior to the assertion.

meaning of that expression is not necessarily structured by a propositional form. For example, I can hear the expression “horse” and form a conception of its meaning without entertaining a proposition. Suppose someone asks me how I understand the expression’s meaning. I might form a proposition to illustrate it, but this does not mean that my initial conception of the meaning of “horse” is intrinsically about a proposition, as though I am always doing a “conceptual analysis” whenever I have a conception to express the meaning as propositional.

Consider the second interpretation. If conception and assertion are two types of objects, in what sense are they distinct from what is conceived and what is asserted, respectively? Would the latter pair not be more deserving of being called the object of knowledge? As for the third interpretation, if conception is a general feature of various kinds of mental apprehension, in what sense is conception a type of knowledge?

Given all of these exegetical difficulties, it is difficult to deny that Avicenna’s use of conception and assertion across multiple contexts is ambiguous. Perhaps a more plausible strategy would be to offer a “synthesized” reading in which we can take the two terms as *mushakkik*. In other words, the two terms can be applied to different contexts in different senses but still connect to a single absolute or primary meaning. This would enable us to build a theoretical picture that preserves the unity of Avicenna’s theory of conception and assertion while still explaining Avicenna’s different emphases across different domains.

I propose the following synthetic reading. For Avicenna, conception and assertion are used in systematic but ambiguous ways. First, I propose that we should take conception as “being-informed-by-meaning.” Second, “conception” may refer to any mental occurrence that instantiates this feature (viz., any occurrence of meaning). In other words, a mental occurrence is a conception if it instantiates being-informed-by-meaning regardless of that attitude that modifies its subjective side. Third, “conception” may refer to a truth-value-neutral attitude towards meaning. Fourth, “conception” may also refer to any occurrence of meaning that is modified by this truth-value-neutral attitude. As for “assertion,” it primarily refers to an attitude towards meaning—taking meaning to be true or false. It may also refer to any occurrence of meaning that this attitude modifies.

When Avicenna writes that assertion is dependent on conception, I understand him to be claiming that assertion is dependent on the first or second sense of “conception.” I reject the view that Avicenna understands assertion only in the sense of judgmental force. While Avicenna considers assertion to be a kind of knowledge, he does not consider judgmental force to be any kind

of knowledge. Thus, Avicenna may also accept that “assertion” can refer to any occurrence of meaning modified by a judgmental force. In this sense, when he identifies assertion as a type of knowledge, he moves from the sense of “assertion” as an attitude to the sense of “assertion” as a meaning-occurrence, which he identifies as a type of knowledge. Thus, in this way, Avicenna’s use of “assertion” is similar to ar-Rāzī’s aggregate view, at least as reflected by al-Ḥillī. However, there is a slight difference: for Avicenna, the relation between assertion as occurrence and conception as occurrence (in the second sense) is not a part-whole relation; rather, it is a distinction between occurrences that are modified by a specific attitude and those that are open to multiple attitudes. If one considers the first notion of conception (i.e., being-informed), this feature is a part of assertion as occurrence. However, this view is not shared by ar-Rāzī, who uses “conception” and “what is conceived” interchangeably and understands what is conceived and judgmental force to be an aggregate. Avicenna would not describe the aggregate as a combination of judgmental force and conception as what is conceived because he is aware that conceptions are different from what is conceived, which is nothing but meaning.

However, two questions about knowledge emerge if one takes seriously the idea of assertion as occurrence. First, assertion as a mental occurrence is a subclass of conception as a mental occurrence (in the second sense)—so how are they different kinds of knowledge? Second, knowledge appears to be what is known, which is objective rather than subjective—so how can conception or assertion as mental occurrences be knowledge?

Consider the first question. When Avicenna contrasts knowledge of assertion with knowledge of conception, he is writing about “conception” in the fourth sense (viz., when a meaning-occurrence is modified by a truth-value-neutral attitude). In other words, “conception” in the second sense (viz., any mental occurrence that instantiates this meaning-occurrence) is any knowledge that can be modified by two different attitudes. Thus, when a truth-value-neutral attitude modifies “conception” in the second sense, “conception” in the fourth sense constitutes a subclass. When a judgmental force modifies “conception” in the second sense, assertion constitutes another subclass. The two subsets are distinct. Avicenna contrasts them because the meaning-occurrence in both subclasses instantiates the feature of being-informed. Therefore, they can be grouped into the class of conception as meaning-occurrence.

As for the second question, we typically intuitively understand the word “knowledge” as what one knows. However, as far as I know, Avicenna never claims that knowledge is equivalent to what is known. Rather, in Text 7 (from *an-Najāt*), he offers a brief clarification about what “knowledge” signifies, suggesting that he does not support this view:

Text 7:

True opinion (*az-ẓann al-ḥaqq*) is a view (*raʾy*) on something that it is such and such, [while] it is possible that it may not be such. Knowledge (*al-ʿilm*) is the conviction (*iʿtiqād*) that a thing is such and such and that it is not possible for it not to be such, by way of an intermediary that requires [the conviction] that the thing is such. The conception of the quiddity [of a thing] by means of giving a definition may also be called [knowledge].¹⁵

Avicenna points out that knowledge is either a particular type of assertion or a special type of conception:

K1: The conviction that S is so and so, and the conviction that it is impossible for S to not be so.

K2: The conception of the quiddity of S.

In each case, “knowledge” applies to the whole apprehension, including the content and one’s attitude towards the content. A straightforward interpretation of the passage is that knowledge, as a specific type of apprehension, occurs in the mind. As every apprehension has two internal moments—the content that is apprehended and the attitude toward that content—Avicenna must consider both the content and the attitude when clarifying an apprehension. Based on this interpretation, I suggest that, for Avicenna, “knowledge” is just an abbreviation of knowing-that-M (“M” represents meaning, be it simple or propositional). Thus, his claim that

T4: Knowledge is either conception or assertion

can be paraphrased as follows:

T5: Knowing-that-M is either conceiving-of-M or asserting-M.

T5 suggests that when Avicenna claims T4, he is not claiming that what one knows is either what one asserts or what one conceives. Instead, knowing is a specific type of apprehension—either a type of conception or a type of assertion. In light of this interpretation, the answer to the question about subjective knowledge is straightforward: knowledge is a type of intentional state

¹⁵ Avicenna, *an-Najāt*, 168, lines 9–11.

in which the subject is directed towards the content, towards what is known. In other words, "what is known" refers to the content of an intentional state called "knowledge." Therefore, this interpretation preserves Avicenna's distinction between knowledge and what is known. Knowledge, as knowing-of-M or knowing-that-M, is subjective—but what is known can be objective.

5 Concluding Remarks: Force versus Judgment

At the heart of my *mushakkik* reading, I take assertion as a judgmental force and view the relationship between assertion and that which is asserted in light of the force-content distinction. One significant implication of the force-content distinction is the separation of the judging force from predication. Consider again Avicenna's example: "every whiteness is an accident." What makes this proposition a proposition is not only the subject and the predicate but also the predication itself. In other words, we can only have a proposition if the predicate successfully predicates the subject. In this sense, predication is inherent to all propositions, but propositions are open to be asserted or not. Therefore, predication is distinct from assertion, especially in the sense that a successful predication does not presuppose an assertion. If we understand assertion in its primary sense—as the judging force—and see the judging force as the act of judging itself (in line with the post-Avicenna tradition), we arrive at the following conclusion:

T6: Predication does not presuppose judgment.

There are, however, some Avicenna texts that oppose this reading:

Text 8:

Affirmation (*jāb*), in an absolute sense, is the generation and production of this relationship with regard to existence. In the attributive [proposition], it is the judgment (*al-ḥukm*) that the predicate exists for the subject.¹⁶

Text 9:

Negation (*salb*), in an absolute sense, is the removal of the relationship between two things with regard to existence. In the attributive [proposi-

¹⁶ Avicenna, *an-Najāt*, 20, lines 13–14.

tion], it is the judgment (*al-hukm*) that the predicate is non-existent for the subject.¹⁷

In these texts, Avicenna distinguishes between two types of predication: positive predication and negative predication. More importantly, he defines predication in terms of judgment:

F is positively predicated of S if and only if F is positively judged to exist for S.

F is negatively predicated of S if and only if F is negatively judged to exist for S.

The definition of predication in terms of judgment suggests a reversed position concerning the predication-judgement relation:

T7: Predication presupposes judgement.

Evidently, T6 and T7 are contradictory. Avicenna's discussion of predication in Text 8 and Text 9 reflects an Aristotelian theory of judgment, which understands it in light of the combination of the predicate and the subject. However, his discussion of assertion anticipates a Fregean position that separates the content from the assertoric force.¹⁸ There is a clear tension between these two approaches, and the tension is preserved in Avicenna's efforts to reinterpret or redevelop the Aristotelian logical tradition. To my knowledge, Avicenna does not adequately address the tension. Thus, we may view Avicenna's discussion of assertion as a point of transition from an Aristotelian theory of judgment to a Fregean theory of judgment, which may, to some extent, account for the high degree of debate over conception and assertion in the post-Avicennian tradition.

17 Avicenna, *an-Najāt*, 21, lines 2–3.

18 For an insightful discussion on the difference between the Aristotelian approach and the Fregean approach, see Irad Kimhi, *Thinking and Being* (Cambridge: Harvard University Press, 2018), 19–20, 37–39.

Bibliography

- Ahmed, Asad Q. *Avicenna's Deliverance: Logic, Translation and Notes*. Oxford: Oxford University Press, 2011.
- al-Ḥillī, al-ʿAllāma. *Al-Qawā'id al-Jaliya fi Sharḥ ar-Risāla ash-Shamsiyya*. Ed. by Fāris Tabriziyyān. Qum: Mu'assasa an-Nashr al-Islāmī, 2012 [1432 AH].
- Avicenna. *Kitāb al-Shifā': al-Madkhal*. Ed. by Georges C. Anawātī, Maḥmūd al-Khuḍayrī, and Aḥmad Fu'ād al-Ahwānī. Cairo: Organisation Générale des Imprimeries Gouvernementales, 1952.
- Avicenna. *Al-Shifā': al-Burhān*. Ed. by Abū l-ʿAlā' ʿAfiḥ. Cairo: Government Press, 1956.
- Avicenna. *Avicenna's De Anima (Arabic Text): Being the Psychological Part of Kitāb al-Shifā'*. Ed. by Fazlur Rahman. London: Oxford University Press, 1959.
- Avicenna. *Kitāb an-Najāt*. Ed. by Muhammad Taqī Dānishpazhūh. Tehran: Dānishgāh-i Tih-rān, 1985.
- Avicenna. "Compendium on the Soul (*Kitāb fi an-Nafs 'alā Sunnat al-Ikhtiṣār*)." Transl. by S. Landauer. *Zeitschrift Der Deutschen Morgenländischen Gesellschaft* 29 (1875): 335–418.
- Black, Deborah. "Intentionality in Medieval Arabic Philosophy." *Quaestio* 10 (2010): 65–81.
- Di Vincenzo, Silvia. *Avicenna, The Healing, Logic: Isagoge: A New Edition, English Translation and Commentary of the Kitāb al-Madḥal of Avicenna's Kitāb al-Šifā'*. Boston: De Gruyter, 2021.
- Kimhi, Irad. *Thinking and Being*. Cambridge: Harvard University Press, 2018.
- Lameer, Joep. *Conception and Belief in Ṣadr Al-Dīn Shīrāzī*. Tehran: Iranian Institute of Philosophy, 2006.
- Street, Tony. "Al-ʿAllāma al-Ḥillī (d. 1325) and the Early Reception of Kātibī's *Shamsiyya*: Notes Towards a Study of the Dynamics of Post-Avicennan Logical Commentary." *Oriens* 44, no. 3–4 (2016): 267–300.
- Strobino, Riccardo. *Avicenna's Theory of Science: Logic, Metaphysics, Epistemology*. Oakland: University of California Press, 2021.
- Treiger, Alexander. "Avicenna's Notion of Transcendental Modulation of Existence and Its Greek and Arabic Sources." *Documenti e Studi sulla Tradizione Filosofica Medievale* 21 (2010): 165–198.
- Wolfson, Harry A. "The Terms *Taṣawwur* and *Taṣdiq* in Arabic Philosophy and Their Greek, Latin, and Hebrew equivalents." *The Muslim World* 33, no. 2 (1943): 114–128.

Struggling with the Essentials: A Debate between Avicenna and His Contemporaries on Essentiality and Necessity in Demonstrations

Silvia Di Vincenzo

1 Introduction

At the heart of Avicenna's (Ibn Sīnā, d. 428H/1037) theory of demonstration—and, more generally, of his logic—is the definition of two key notions: essentiality and necessity. In the framework of Avicenna's logic, the definition of these two notions intertwines with the distinction between essential and non-essential attributes. The first definition Avicenna offers of these pivotal concepts is found in the opening of his philosophical masterpiece, the *Book of Healing* (*Kitāb ash-Shifā'*), in the section containing his original reworking of Porphyry's *Isagoge* (*Kitāb al-Madkhal*). Right at the opening of chapter six of the first treatise of this work (T₁), Avicenna presents two criteria largely applied to define the notions of essential (*adh-dhātī*) and accidental (*al-'araḍī*) and distinguish between essential and accidental attributes:

T₁. "It has been argued in distinguishing the essential from the accidental that [(i)] the essential is constituent (*muqawwim*) and the accidental is non-constituent (*ghayr muqawwim*), though it has not been determined nor has it been clarified what it is to be constituent or non-constituent. It has also been argued that [(ii)] it is not possible to represent in estimation the essential as removed with the thing remaining (*adh-dhātī lā yaṣīḥḥu tawahhumuhu marfū'an ma'a baqā' ash-shay'*), whereas it is possible to represent in estimation the accidental as removed with the thing remaining (*wa-l-'araḍī yaṣīḥḥu tawahhumuhu marfū'an ma'a baqā' ash-shay'*)." (Ibn Sīnā, *Ash-Shifā'*, *al-Mantiq*, *al-Madkhal* 1.6, 68.2–4 ed. Di Vincenzo/33.8–11 ed. Qanawātī et al.)^{*1}

* Throughout the paper, the primary sources are cited according to the editions listed in the bibliography; explicit mention of the edition is added in case of simultaneous reference to more than one edition of the same text. Translations are my own, unless otherwise specified.

1 Translation from Di Vincenzo, *Avicenna, 'The Healing, Logic: Isagoge'*, 69, slightly modified.

In this contribution, I aim to examine Avicenna's critique of the two criteria for distinguishing between essential and accidental attributes set out in T1, which may be summarised as follows:

Criterion (i):

x is an essential attribute of a subject y *iff* x is a constituent of the essence of y;

x is an accidental attribute of a subject y if x is not a constituent of the essence of y.

Criterion (ii):

x is an essential attribute of a subject y *iff* the removal of x from y (even if only conceptual) necessarily entails the destruction of y;

x is an accidental attribute of a subject y if the removal of x from y (be it conceptual or actual) does not entail the destruction of y.

As I shall argue, these two criteria were widely adopted by the logicians of the Peripatetic school of Baghdad, who inherited them from the late antique Greek tradition. The distinction between essential and accidental attributes holds particular relevance within the theory of demonstration. In the Arabic logical tradition, these criteria (i) and (ii) appear to have significantly impacted the interpretation of Aristotle's definition of 'per se' in *Posterior Analytics* A4.

A number of comprehensive studies have already delved into the main theoretical facets of this topic.² This paper seeks to contribute to the analysis of this topic from a historico-philosophical perspective, by trying to reconstruct the historical background of Avicenna's reassessment of the two criteria mentioned above. My contention is that, through the examination of some critical references to anonymous scholars within both the *Madkhal* of the *Shifā'* and the section of the same summa devoted to the *Posterior Analytics* (*Kitāb al-Burhān*), we may be able to reconstruct an otherwise lost debate between Avicenna and his contemporaries.

This paper is articulated in three main sections. In Section 2, I will provide a concise overview of the Graeco-Arabic roots of the two criteria for defining the essential, as delineated in T1. Moving forward to Section 3, I will expound

² Riccardo Strobino, "Per Se, Inseparability, Containment and Implication. Bridging the Gap between Avicenna's Theory of Demonstration and Logic of the Predicables", *Oriens* 44 (2016): 181–266; Riccardo Strobino, *Avicenna's Theory of Science. Logic, Metaphysics, Epistemology* (Oakland: University of California Press, 2021), 181–212; Fedor Beneviseh, "Avicennian essentialism", *British Journal for the History of Philosophy* 30 (2022): 410–433.

on Avicenna's taxonomy of essential and accidental attributes, which emerges at the end of *Madkhal* 1.6 as a result of his critical re-evaluation of criteria (i) and (ii) (Section 3.1). Following this, I will delve into Avicenna's attribution of a set of statements to (at least) two unnamed scholars in *Burhān* 11.2, aiming to tentatively identify two of Avicenna's contemporaries who were either directly or indirectly affiliated with the Baghdad school (Section 3.2). Finally, in Section 4, I will offer concluding reflections on the proposed reconstruction.

2 Two Criteria to Define the Essential and the Accidental: A Graeco-Arabic tradition

2.1 *Back to the Start: Porphyry's Commentary on Aristotle's Categories*

It may be argued that both principles (i) and (ii) mentioned in T1 had already become commonplace criteria for defining the 'essential' by the time Avicenna set out to analyze them critically. For, in fact, both (i) and (ii) underpin the standard definition of essential attributes in the Greek commentaries on Aristotle's logic within the sixth-century school of Alexandria as well as in the Arabic works of the tenth-century Baghdad Peripatetics. The main source of this longstanding Graeco-Arabic tradition may be identified with the Neoplatonic philosopher Porphyry (d. 305? CE). The first passage in which criteria (i) and (ii) are explicitly established in connection with each other is found, to my knowledge, in Porphyry's surviving commentary on *Categories* by questions and answers (T2).

T2. "Substantial qualities (*ousiôdeis poiôtêtes*) are those that are constitutive (*sumplêrôtikai*) of substances. Constitutive elements are those which, if removed (*apoginomena*), corrupt the subjects. Those which, whether present or removed (*ginomena kai apoginomena*), do not corrupt (*phtheirei*) [their subjects], cannot be substantial." (Porph., *In Cat.*, 95.22–24)

In T2, Porphyry first defines as substantial (*ousiôdeis*) those properties that make up or constitute the substance of their subjects.³ Subsequently, he characterizes these properties, which are constitutive of substance, as essential to

3 On Porphyry's use of *ousiôdeis poiôtêtes* to qualify *differentiae specificae*, see Riccardo Chiaradonna, *Ontology in Early Neoplatonism: Plotinus, Porphyry, Iamblichus* (Berlin/Boston: De Gruyter, 2023), 103–104.

their subject's integrity, such that their removal would lead to its destruction. The Greek *sumplêrôtikos*, that I rendered here by 'constitutive', is part of a terminology shared between the late antique Peripatetic and Neoplatonic exegetical traditions. As an adjective, it is used to denote the elements that constitute substance by Alexander of Aphrodisias,⁴ while the verb *sumplêrein* is used in the *Enneads*, where Plotinus affirms that qualities do not contribute to the completion of the substance (*ousia*), for they are posterior to its constitution, so that the substance cannot be constituted (*tên sustasin ekhein*) and completed (*sumplêrousthai*) by them (*Enn.* VI.2.14, 2–5).

Porphyry's primary concern in T2 was with the fundamental distinction between substances and accidents. Within the exegetical tradition surrounding Aristotle's *Categories*, the definition of substantial qualities had posed serious theoretical problems, as it seemed to be the point at which the Aristotelian distinction between substances and accidents in *Cat.* 2 (1a20–b9) collapses. In fact, the mere existence of accidental qualities that are parts—constituents—of a substance (as in the case of heat for fire, for example) appeared to call into question the neat bipartition between accidents that are inherent in the substance and substances that either exist as part of other substances or independently.⁵

2.2 The Graeco-Arabic Reception of Criterion (i)

In the late antique exegetical tradition, the metaphysical problem of providing an unambiguous definition of 'substance' and 'accident' intersected with the logical problem of defining the properties that are essentially predicated and those that are accidentally predicated of a given subject. To some extent, the conflation of the two problems might have been encouraged by *Cat.* 2, where Aristotle contrasted the relation of being *said of* a subject (1a20: *ta men kath' hupokeimenou tinos legetai*) with that of being *in* a subject (1a23: *ta de en hupokeimenôi men esti*). This conflation becomes, however, more evident in the

4 In the section where Alexander comments on Aristotle's description of the accident in *Top.* A5, 102b4 ff., he states that white is an accident for the snow, for it is not *sumplêrôtikon* of the substance of the snow (Alex., *In Top.*, 50.29–51.2).

5 On the Late Antique debate on this subject, see John Ellis, "Alexander's Defense of Aristotle's 'Categories'" *Phronesis* 39 (1994): 69–89; Fedor Benevich, "Fire and Heat: Yahyā b. 'Adī and Avicenna on the Essentiality of Being Substance or Accident" *Arabic Sciences and Philosophy* 27 (2017): 237–267 (esp. 240–246). On the Arabic reception of this debate and of Porphyry's solution, see Benevich, "Fire and Heat", 246–254; Alexander Kalbarczyk, *Predication and Ontology: Studies and Texts on Avicennian and Post-Avicennian Readings of Aristotle's Categories* (Berlin/Boston: De Gruyter, 2018), 90–92.

preliminary classifications of the five universal predicables at the opening of the commentaries on Porphyry’s *Isagoge* produced in the school of Ammonius of Hermias (ca. 435/445–517/526) in Alexandria. Within these classifications, Ammonius and his disciples made use of the terminology typically reserved for defining substances and accidents to classify predicables according to the way they are referred to a given subject. As the texts in T3 show, the classification found its way into the Arabic philosophical tradition: an almost identical classification is offered in Abū Yūsuf Ya’qūb b. Ishāq al-Kindī’s (d. ca. 256H/873) treatise *On First Philosophy* (*Fī l-Falsafa al-Ūlā*).

T3.

Ammon., <i>In Isag.</i> , 60.13–16	Elias, <i>In Isag.</i> , 35.14–36.10	Al-Kindī, <i>Fī l-Falsafa al-Ūlā</i> , 43.8–17
Among the [expressions] that are predicated of many, some are essentially (<i>ousiôdôs</i>) predicated, like genera, differentiae and species, for they are constitutive (<i>sumplêrôtika</i>) of the substance; some [others are] non-essentially (<i>ouk ousiôdôs</i>) [predicated], like propria and [common] accidents, for they do not constitute (<i>ou gar sumplêroi</i>) [their] subjects’ substance.	Among the universal [expressions], some are essential, some are accidental. ‘Essential’ (<i>ousiôdê</i>) are called those [attributes] that preserve [the subject] with their presence and destroy [it] with their absence, as ‘rational’ belongs essentially to ‘man’ (for it preserves it with its presence, whereas it destroys it with its absence) [...]. ‘Accidental’ (<i>epeisidiôdê</i>) are called those that, on the contrary, neither preserve [their subject] with their presence nor destroy [it] with their absence.	The general universals must be either essential (<i>dhātiyya</i>) or non-essential (<i>ghayr dhātiyya</i>). By ‘essential’ (<i>dhātī</i>) I mean that which constitutes (<i>muqawwim</i>) the essence (<i>dhāt</i>) of something: because when [the essential] exists, the thing’s essence subsists and is stable, whereas when [the essential] ceases to exist, the thing is destroyed and corrupted.

A comparative analysis of the three classifications in T3 brings to light the equivalence between the Greek *ousiôdê* and its Arabic counterpart, *dhātiyya*, particularly concerning essential attributes. Similarly, the Greek term *sumplêrôtikos* aligns with the Arabic *muqawwim*, referring to the constitutive elements or constituents of essence. The Arabic terminology employed by al-Kindī in his classification of universals echoes that found in T1, particularly concerning the

first criterion used to define the ‘essential’ (i), which is itself a quite faithful translation of the Greek terminology employed by Porphyry in his commentary on the *Categories* (T₂) and by Ammonius and Elias in their commentaries on the *Isagoge* (T₃). Elias and al-Kindī also establish a clear link between criterion (i) and criterion (ii). Both their classifications recall the principle that the removal of essential attributes, as opposed to accidental attributes, results in the destruction of their subject. As we shall see in the next section, the history of the Graeco-Arabic reception of criterion (ii) is intrinsically linked to that of Porphyry’s *Isagoge*.

2.3 *The Graeco-Arabic Reception of Criterion (ii).*

Several terminological indicators suggest that the second criterion for defining the notion of ‘essential’ (ii) mentioned in T₁ also finds its roots in the Greek tradition. The characterization of ‘essential’ as that which cannot be removed from its subject—not even in estimation—without resulting in the subject’s destruction, echoes Porphyry’s definition of ‘common accident’ in the *Isagoge* as that which can be safely removed from its subject without causing its destruction (T₄).

T₄.

Porph., *Isag.*, 12.24–13.3 (transl. J. Barnes, *Porphyry, Introduction*. Oxford: Clarendon Press, 2003, 12)

Arabic translation by Abū ‘Uthmān ad-Dimashqī (ed. Arnzen, https://hunaynnet.oeaw.ac.at/isagoge.html#isa_ara#s120 | 1086.5–8 ed. Badawī, *Manṭiq Aristū*)

Accidents (*sumbebēkos*) are items which come and go without the destruction of their subjects. They are divided into two: some are separable (*khôriston*) and some inseparable (*akhôriston*). Sleeping is a separable accident, whereas being black is an inseparable accident for ravens and Ethiopians—it is possible to think (*dunatai de epinoêthēnai*) of a white raven and an Ethiopian losing his skin-colour without the destruction of the subjects.

Accident (*al-‘araḍ*) is that which comes and goes without the destruction of its subject. It is divided into two, for it is either separable (*mufāriq*) or inseparable (*ghayr mufāriq*). Sleeping is a separable accident, whereas being black is an inseparable accident for the raven and the Ethiopian. Yet it is possible to think (*wa-qad yumkin an yutawahhama*) of a white raven and an Ethiopian who has lost his colour without the destruction of the subject.

Porphyry's definition of accident as removable from its subject in T4 poses in principle the problem of accounting for the existence of certain accidental properties that appear to be inseparable (Gr. *akhôriston*; Ar. *ghayr mufâriq*) from their subject. Consider, for instance, the blackness of ravens or the whiteness of snow.⁶ In everyday experience, no specimens of yellow ravens are encountered, suggesting that blackness belongs permanently and inseparably to the raven species. However, blackness is not an essential attribute defining the raven, nor does it exclusively belong to it; rather, it is a trait shared by individuals of other species. It is arguably with this concern that Porphyry alluded in T4 to the possibility of conceiving (Gr. *epinoêthênai*; Ar. *yutawahham*) of a given subject as stripped of such accidental properties. According to Porphyry, one may well conceive of a white raven, even if no such specimen of raven is to be found in the sensible world, without this affecting the essence of the raven.

Commenting on Porphyry's definition of common accident in T4, Ammonius and his school elaborated a further distinction between two concepts of separability: one *actual* (*kat' energeian*) and the other *conceptual* (*têi epinoiai*) (T5).⁷ This same distinction was later recalled in the commentaries of the Baghdad school: when commenting on Porphyry's definition of common accident, the Nestorian philosopher Abū l-Faraj Ibn aṭ-Ṭayyib (d. 435/1043) introduced a distinction between the separability of the accident from its subject *in existence*, or *factual* (*fī l-wujūd*) and *in estimation* (*fī l-wahm*). Overall, we can observe a certain terminological consistency in the Arabic rendering of terms that in Greek indicate the conceptual dimension of the separability of accidents. The Greek terms employed to denote 'conception' by Porphyry and the Alexandrian commentators all derive from the root of *epinoia/epinoein*, and the Arabic tradition appears to translate the Greek *epinoia* consistently with *wahm/tawahhum*.⁸

6 This kind of accidental properties is already labelled as 'inseparable accidents' (*akhôrista sumbebêkota*) in Alexander of Aphrodisias' commentary on Aristotle's *Topics*, where he employs the locution to refer to 'white' with respect to the snow and the swan, and 'black' with respect to pitch (Alex., *In Top.* 50.11).

7 See also Elias, *In Isag.*, 91.27–92.6; David, *In Isag.*, 205.14–28.

8 See also Strobino, "Per Se, Inseparability, Containment and Implication", 238 and note 100.

T5. Commentaries on Porphyry's definition of 'common accident'

Ammon., *In Isag.*, 111.7–18Ibn at-Ṭayyib, *Tafsīr Kitāb Īsāghūjī li-Furfūriyūs*, 139.9–14

It is customary to raise some doubts concerning the definition provided. For they say, as already stated, that the definition [of the accident] as *that which comes and goes* does not apply to all accidents, but [only] to the separable ones. Indeed, it is impossible for blackness to leave the raven without [causing] the destruction of the subject. We have already said that, although this property does not *actually* (*kat' energeian*) leave [its subject], the raven and the Ethiopian can still be white *conceptually* (*têi epinoiai*). On the other hand, it is not possible to separate the animal from man, not even conceptually (*oude têi epinoiai*). While conceiving man as a non-animal, in fact, we destroy him, whereas by conceiving that a raven or an Ethiopian are not black we do not destroy their essence as raven and man, [respectively]. Indeed, if someone subtracted a raven's wings, it would nonetheless be a raven, and if you conceived of the Ethiopian as white, it would nonetheless be a man. Consequently, if even inseparable accidents do not actually abandon the subject, they can do so conceptually.

He (viz. Porphyry) defines the accident by three definitions. The first is as follows: the accident is that which is in a thing and goes away without the destruction of that thing. You must know that the accidental forms that exist in the thing are such, since they are not part of the substance itself (*laysat dākhila fī dhāt al-jawhar*), nor are they constituents of the essence (*muqawwima li-dh-dhāt*). Consequently, if they are removed, they do not affect the essence of the thing. This is divided into two sections, namely the separable [accident] such as sitting or standing, and the inseparable [accident] such as the blackness of the raven. The latter, although inseparable in existence (*ghayr muḥāriq fī l-wujūd*), can nevertheless be separated in estimation (*qad yumkin an yuḥāriqa fī l-wahm*) while the essence of the thing remains.

The criterion of the conceptual separability from the subject not implying the latter's destruction was generally accepted in the Baghdad school to define accidental attributes. However, the Jacobite Christian logician Yahyā b. 'Adī (d. 363H/974) appears to have restrained its validity to the definition of the logical accidental (i.e., the accidental predicate, e.g., 'colored' with respect to 'man'), thus excluding its applicability as a criterion to define the ontological

accident (as opposed to substance, e.g., color as opposed to man). This remarkable distinction between the two theoretical levels, previously pointed out by Fedor Benevich,⁹ emerges most clearly in a (still unedited) treatise that Yaḥyā b. ‘Adī dedicated to the traditional problem of heat and fire addressed by the exegetical tradition surrounding Aristotle’s *Categories*, namely the *Treatise on clarifying that the heat of fire is not a substance for fire* (*Maqāla fī lbānat anna Ḥarārat an-Nār laysat Jawharan li-n-Nār*) (T6).¹⁰

T6. “For we find that all the constituent parts (*al-ajzā’ al-muqawwima*) of the species of the accidents are in this way, i.e. they are such that, when they are represented in estimation as removed (*idhā tuwuhhimat murtafi’a*), the species for which they are constituent parts are [also] removed through the estimative representation of their removal (*bi-tawahhum irtifā’ihā*). Accordingly, when the removal of color is represented in estimation (*idhā tuwuhhima irtifā’uhu*), whiteness is [also] removed, since color is one of its constituent parts. Similarly, also in the case of piercing the sight,¹¹ when its removal is represented in estimation, whiteness does not remain in estimation either. God forbid you have any doubts that whiteness is not a substance for anything! For whiteness not only exists in the parts of pure accidents, but also in the parts of the complex formed by substance and accidents. The same goes for the parts of voice, since voice is a complex consisting of a substance, namely a body of air, and an accident, namely an emission of air: when the removal of any of these two parts is represented in estimation, voice is also removed in estimation. For if one represents in estimation the removal of the emission (which is a passion, and anyone with the slightest possession of his intellectual faculties does not doubt that it is not a substance of anything), it is nevertheless impossible for voice to remain; [on the contrary,] it is removed by its removal. When voice is removed, one can then find accidents of which it is not possible to say that they are substances of anything, the removal of which in estimation entails the removal of the

9 Benevich, “Fire and Heat”, esp. 246–251.

10 On this treatise, besides Benevich, “Fire and Heat”, see also U. Rudolph, R. Hansberger, and P. Adamson (eds.). *Philosophy in the Islamic World—Volume 1: 8th–10th Centuries* (Leiden: Brill, 2017), 446. A proper critical edition of the treatise in its entirety is in preparation by Robert Wisnovsky and Rotraud Hansberger; here, I confine myself to quoting from the manuscript the lines of text relevant to our purposes.

11 The example refers to the definition of ‘whiteness’ as ‘color piercing the sight’ (Arist., *Top.* Γ5, 119a28–31), where ‘color’ is the genus and ‘piercing the sight’ is the differentia specifica.

representation in estimation of the things in which they are inherent. Indeed, if you understand the name of fire only according to the meaning of its definition, i.e. ‘simple, hot, dry body’, then it cannot be assumed that it is merely a substance. On the contrary, the truth is that it is a compound formed of one substance and [several] accidents, since the body is a substance, while heat and dryness are two accidents. In this respect, fire is analogous to voice, since this is also a compound constituted by a substance (i.e., the body of air) and an accident (emission). As for heat being an accident, although not an accident of fire, this is clear from the fact that it exists in many bodies, such as iron, for example, or stone, or the bodies of animals and plants after it did not exist in them, and after that it leaves that to which it belonged without corrupting the species of those bearers (*al-ḥawāmil lahā*). This is the description of accident that Porphyry taught us in the *Isagoge*, for he said that *an accident is that which comes and goes without corrupting its bearer*. It is therefore clear that heat is an accident since it can be found in a bearer and leave it without corrupting it.” (Yaḥyā b. ‘Adī, *Treatise on clarifying that the heat of fire is not a substance for fire*, *Maqāla fī Ibānat anna Ḥarārat an-Nār laysat Jawharan li-n-Nār*, MS Tehran, Madrasa-yi Marwī 19, p. 34/f. 18^r).

The most significant element of novelty introduced in T6 by Yaḥyā b. ‘Adī with respect to his colleagues of the Baghdad school is the fact that he refrains from applying criterion (ii) to discriminate between accidents and substances. For accidents can indeed be essential constituents of other accidents, thus potentially leading to their destruction upon removal, even if only conceptual. This is, for instance, the case with color and whiteness, for color is the genus of whiteness and is part of its definitional account. Yet, the fact that color is not a substance exposes the inadequacy of criterion (ii) to distinguish between substances and accidents. Nevertheless, Yaḥyā b. ‘Adī appears to have maintained, in line with his colleagues, the validity of the criterion of removability in the estimative faculty for distinguishing between the essential constituent components (of either substances or accidents) and the accidental ones. This stance thus appears to be the hallmark of the Peripatetic school of Baghdad. The Peripatetics of Baghdad appear therefore to be a suitable candidate for Avicenna’s critical target in T1: when referring to “their reliance (*i’timāduhum*) on the matter of removal (*ar-raḥ*) in estimation (*fī t-tawahhum*)”, Avicenna may well have had in mind the treatises and commentaries produced within the Baghdad school.

As I will argue in section 3, Avicenna’s intention was precisely to call into question the validity of criterion (ii) for the distinction between essential and

accidental attributes. For the Baghdad Peripatetics, criterion (ii) was intrinsically connected to the conception of the essential as constituent, according to criterion (i). The validity of criterion (ii) as they intended it was in fact based on the assumption that only the essential constituents of a subject are inseparable from it, due to their ontological priority—they precede the subject in existence and constitute its essence. Attributes ontologically consequent to the essence of the subject, however, were not considered essential in this narrow sense, despite being necessarily implied by the subject's essence. Thus, criteria (i) and (ii) adopted by the Baghdad Peripatetics fell short of adequately explaining the necessary attribution of non-essential implicates to their subject. This issue, as I will argue in section 3, potentially had significant implications for their theory of demonstration.

3 Avicenna's Reappraisal of Criteria (i) and (ii): A debate with the Baghdad school?

3.1 *Avicenna's Taxonomy of Attributes in Madḥal 1.6*

In *Madkhal* 1.6, Avicenna placed great emphasis on the reassessment of the traditional criterion of the *removability* (*rafʿ*) of an attribute with respect to its subject (criterion ii). Throughout the chapter, the key term *rafʿ* ('removal') is often juxtaposed with another term, *salb* ('negation'), which Avicenna arguably considered its logical equivalent. Eventually, *salb* completely supplants *rafʿ* in the final classification of attributes in T7. This shift in terminology raises the question of whether the terms related to removability (expressed by the Arabic terms *rafʿ* and *irtifāʿ*) employed by the Baghdad Peripatetics might reflect a conflation between the definition of the accident of Aristotle's *Categories* and that of the accidental predicate (the 'common accident') of Porphyry's *Isagoge*. If so, this terminology would potentially generate confusion between the ontological perspective, which addresses the mode of existence of accidents inhering in substances, and the logical perspective, which deals with the relationship between an accidental predicate and its subject.¹² It may be conjectured that the fear of a potential overlap between two different levels of inquiry might

12 For Avicenna's criticism of both points, see Ibn Sinā, *Ash-Shifāʿ, al-Manṭiq, al-Madkhal* 1.14, 186.37–188.53 ed. Di Vincenzo/85.8–86.9 ed. Qanawati et al. See also Silvia Di Vincenzo, *Avicenna, 'The Healing, Logic: Isagoge'—A New Edition, English Translation and Commentary of the Kitāb al-Madḥal of Avicenna's Kitāb al-Šifāʿ* (Berlin/Boston: De Gruyter, 2021), liv–lix.

explain Avicenna's gradual switch from the more ontologically charged term 'removal' to the term 'negation' while referring to the same criterion.

Avicenna's revised version of criterion (ii), based on a restatement of the conditions of removability of an attribute with respect to its subject (henceforth, for the sake of brevity, 'R-criterion') played a pivotal role in his own analysis of the relations between the subjects and their attributes and provided the basis for the classification of attributes that seals chapter 1.6 (T7). This classification, as well as the role of the R-criterion in it, has already been the target of scholarly attention.¹³ In this section, I will therefore confine myself to briefly recalling the salient points in which Avicenna diverged from the previous exegetical tradition, setting the stage for the subsequent discussion in section 3.2.

T7. "It has become clear to you from this that there are: [(1)] attributes whose negation is possible in existence (*yaṣiḥḥu salbuhu wujūdān*); [(2)] attributes whose negation is possible in estimation [but] not in existence (*yaṣiḥḥu salbuhu tawahhuman lā fī l-wujūd*); [(3)] attributes whose negation is possible in the sheer estimation (*tawahhuman mutlaqān*); [(4)] attributes whose negation is impossible under a [certain] respect, being accidental (*ʿarīḍ*); [(5)] and attributes whose negation is impossible, being essential (*dhātī*), but is distinguished from the accidental because the mind does not require to establish what [the subject] with respect to which the essential is essential is before establishing the essential [itself]; on the contrary, it sometimes requires that the essential be established first. As to the accidental (*ʿarīḍī*), the mind posits it as consequent (*tālī*), even if it is necessary and cannot be negated." (Ibn Sīnā, *Ash-Shifāʾ, al-Mantiq, al-Madkhal* 1.6, 74.57–76.60 ed. Di Vincenzo/36.18–37.3 ed. Qanawātī et al.)¹⁴

Five types of attributes may be identified in the final classification provided in T7; the members of this classification are not, however, in a one-to-one correspondence with Porphyry's classification of the five predicables. Type-1 attributes can be identified with Porphyry's separable accidents, which can be separated from their subjects both in existence and in estimation without this

13 See Strobino, "Per Se, Inseparability, Containment and Implication"; Di Vincenzo, *Avicenna, 'The Healing, Logic: Isagoge'*, 294–302; Strobino, *Avicenna's Theory of Science*, 183–192; Benevise, "Avicennian essentialism", 412–417.

14 Translation from Di Vincenzo, *Avicenna, 'The Healing, Logic: Isagoge'*, 77, slightly modified.

affecting the subjects themselves. An example is sitting for humans, as a human being might well not sit, or be imagined as not sitting, and remain, nevertheless, a human being. Type-2 attributes, on the other hand, are inseparable accidents, which can only be separated from their subjects in estimation (e.g., the blackness of ravens). Type-5 attributes, namely the essential constituents of a given subject, necessarily belong to the latter, being inseparable from it in all ways (e.g., being rational for humans, for it is impossible to even conceive of a non-rational human being). Up to this point, Avicenna's classification is compatible with the traditional one. Avicenna's classification diverges from the traditional classification by asserting that non-essential implicates (*lawāzim*) of a subject also necessarily belong to it, despite not being among its constitutive elements. These non-essential implicates are properties necessarily implied by the essential constituents of a subject, either as primary consequences (termed 'immediate implicates', type-4 attributes in T7) or due to other properties ('mediated implicates', type-3 attributes).¹⁵ In *Madkhal* 1.6, Avicenna provided as examples for immediate and mediated implicates, respectively, the fact that the triangle is such that one of its sides can be protracted in estimation in a straight line and the fact that any two internal angles of the triangle are less than two right angles. The two attributes are the components of the geometrical demonstration exposed in Euclid, *Elements* 1.17. The aim of the demonstration is to prove that any two internal angles of the triangle are less than two right angles (Avicenna's example of a mediated implicate, the triangle's feature that is to be demonstrated), and the starting point of the demonstration is another feature of the triangle, namely the possibility of extending one of the triangle's sides (that is, the immediate implicate).¹⁶

15 On this distinction in Avicenna's theory of demonstration, see Strobino, *Avicenna's Theory of Science*, 188–192.

16 The demonstration runs as follows. If we imagine a triangle ABC with a base BC, let the base BC be produced to a point D, in order to obtain a longer side BD. This is the starting point of the demonstration, taken by Avicenna as an example of an immediate implicate. We see that the internal angle $\angle ABC$ is less than the external angle $\angle ACD$, because any external angle of a triangle is greater than its opposite angle (Eucl., *Elem.* 1.16). Therefore, the sum of the internal angles $\angle ABC$ and $\angle ACB$ is less than the sum of the external angle $\angle ACD$ and the internal angle $\angle ACB$. The sum of the internal angle $\angle ACB$ and the external angle $\angle ACD$ is equal to two right angles, by virtue of the principle that angles on a straight line add up to 180° (Eucl., *Elem.* 1.13). It has thus been demonstrated that the sum of the two internal angles $\angle ABC$ and $\angle ACB$ is less than two right angles, which is the conclusion of the demonstration, namely Avicenna's mediated implicate. The knowledge of the mediated implicate is thus attained in the demonstration through previously acquired knowledge of the immediate implicate, which is taken as the starting point of the demonstration.

Avicenna's classification in T7 is intended to demonstrate that, while not being essential constituents of the subject, accidental implicates undermine the validity of criterion (ii) commonly advocated by the Baghdad Peripatetics. Let us assume that animal and rational are two essential constituents of human being; being capable of wonder will then be a property directly consequent to being rational (an immediate implicate of the essence of human being). According to the classification in T7, it is not true that denying being capable of wonder with respect to human being does not affect human being. Indeed, being capable of wonder exclusively and primarily belongs to human being and its denial would be a sign and proof (*dalīl*) of the non-existence of the subject that necessarily entails its existence, i.e. human being. The relationship between the essence and its necessary implicates shows analogies with the cause-effect relationship that Avicenna described in the metaphysics section of the *Shifāʾ* (*Ilāhiyyāt* IV.1, p. 169.3–8): the essence is a necessary cause for its implicates, being ontologically prior to them; the negation (*rafʿ*) of the cause (that is, the essence) leads to the negation of the effect (that is, the implicates) just as its affirmation (*ithbāt*) leads to the affirmation of the effect. The negation of the effect, on the other hand, bears evidence to the negation of its cause, and its affirmation bears evidence to the affirmation of the cause.¹⁷ For in fact, the negation of the effect is possible only with the removal of its cause, just as its affirmation is possible only after affirming its cause. To conclude, immediate implicates (type-4 attributes) are not removable from their subjects. As for mediated implicates (type-3 attributes), one may think, for instance, of the ability to laugh for humans: no human being exists who is not capable of laughing, for this attribute is entailed by his being capable of wonder. Yet it is possible to imagine a human being without simultaneously considering this attribute, which is not part of his definitional statement. As such, Avicenna states that mediated implicates may have a certain form of separation from their subject in sheer estimation, although they are inseparable if they come with their demonstration. The classification is summarized in Table 4.1 below.

As Table 4.1 shows, Avicenna's R-criterion does not amount to a distinction between accidental and essential constituent attributes, as previous exegetes had maintained concerning criterion (ii). In fact, the R-criterion may not apply in the case of certain accidental attributes, just as it does not apply in the case of essential constituents. Avicenna's taxonomy of the attributes in T7, based on their degrees of separability from their subjects, is a response to prior exegetes, who failed to distinguish properly between the essential constituents

17 See also Strobino, *Avicenna's Theory of Science*, 182, note 2.

TABLE 4.1 Classification of the attributes in *Madkhal* 1.6 according to the ‘criterion of removability’ (‘R-criterion’)

	R			No R	
	In existence (<i>wujūd</i>)	In estimation but not in existence (<i>tawahhuman lā fi l-wujūd</i>)	In sheer estimation (<i>tawahhuman muṭlaqan</i>)	Accidental attributes	Essential attributes
1. Separable accidents					
2. Inseparable accidents					
3. Mediated implicates					
4. Immediate implicates					
5. Essential constituents					

of a given subject and its non-essential implicates. Arguably, the issue of the correct demarcation between the concepts of ‘essential’ and ‘accidental’, which is addressed in the opening of the section on logic of Avicenna’s *Shifā’*, has an impact on the theory of demonstration, which is the subject of the *Kitāb al-Burhān* of the *Shifā’*. It is in the latter, in fact, that Avicenna’s critique of the earlier exegetical tradition resurfaces most clearly.

3.2 *Avicenna’s Criticism of the Theory of Demonstration (of the Baghdad Peripatetics?)*

2.2.13.2.1 The First Anonymous Scholar

The review of the textual sources examined in sections 2 and 3.1 has unveiled the traces of a lost debate between Avicenna and the Baghdad Peripatetics concerning the proper distinction between essential and accidental attributes. The reconstruction of this debate is especially relevant for the understanding of a passage from the *Kitāb al-Burhān* of the *Shifā’* (chapter 11.2) in which Avicenna returned once again to the definition of ‘essential’ and ‘*per se*’ (*dhātī* and *bi-dhātihī*) while critically addressing two unnamed scholars. Considering the scarce availability of commentaries from the Baghdad school on Aristotle’s *Posterior Analytics*, the analysis and contextualization of these fragments reported by Avicenna may be expected to offer an unprecedented insight into the Baghdad scholars’ reflection on the subject and shed new light on the exchanges between Avicenna and the members of the Baghdad school.

In *Burhān* 11.2, Avicenna's first critique targets an unidentified scholar allegedly misguided by Porphyry's use of 'essential' (*dhātī*) in the *Isagoge*, where the term appears to have pretty much the same meaning as 'constituent' (*muqawwim*). The anonymous scholar must have been familiar with both Porphyry's *Isagoge* and Aristotle's *Posterior Analytics*, for he is blamed for understanding the term 'essential' as it is employed in the *Posterior Analytics* in the same, narrow sense in which it is used in the *Isagoge*. This misreading prompted the scholar to formulate a number of problematic assertions, as reported by Avicenna in the following passage (T8).

T8. [The first scholar] "It has come to our attention that someone (*baʿḍ an-nās*) has refused to provide arguments on this matter due to his poor understanding. He believed that predicates in demonstrations are only constituents (*al-muqawwimāt*). Since he has grown accustomed to referring to the constituent as 'essential' (*dhātī*) when studying the *Book of the Isagoge*, and since 'essential' in that context exclusively refers to the constituent, he has come to believe that 'essential' in the *Book of the Demonstration* (*Kitāb al-Burhān*) is the same, namely, the cause (*al-ʿilla*). He said: [(a₁)] "Not every cause, for efficient and final [causes] are not suitable to be assumed as the middle term of a demonstration. Rather, matter and what is analogous to it (namely, the genus) and form and what is analogous to it (namely, the differentia) [are suitable for this purpose]." Furthermore, he said that [(a₂)] the terms of the conclusions (*maḥmūlāt al-maṭālib*) are these as well; and that the major premise is essential only when its term is essential in the sense of 'constituent' of the subject. He said that [(a₃)] the middle term is essential for both extremes in the sense of 'constituent'. [(b)] When he learned the division of the essential (*qismat adh-dhātī*), he did not understand that the essential, in both the kinds employed,¹⁸ is the predicate (*al-maḥmūl*); on the contrary, he thought that it was what is assumed in the definition (*al-ma'khūdh fī l-ḥadd*). Consequently, he believed that the division runs in the following manner: essential [attributes] include the predicate assumed in its subject's definition [i.e. a *per se*-1 predicate] and the subject assumed in the predicate's definition [i.e. a *per se*-2 predicate]. [Except that he did not believe] that this predicate is essential for the subject, but that the subject [is essential for it]." (Ibn Sīnā, *Shifāʾ*, *Burhān*, 11.2, 128.15–129.4)

18 By "in both the kinds employed" (*fī kilā l-qismayn al-mustaʿmalayn*), Avicenna is referring to *per se*-1 and *per se*-2 predicates described in Arist., *APo* A4. He means that, as in the case of *per se*-1 predicates, also in the case of *per se*-2 the predicate belongs *per se* to the subject, and not the reverse.

In T8, Avicenna appears to be blaming the first anonymous scholar for misinterpreting the meaning of *per se*-1 and *per se*-2 in Aristotle's *Posterior Analytics* A4. All the claims ascribed to the anonymous scholar can indeed be traced back to two errors of interpretation. The argument may be reconstructed as follows:

- (a) *Misunderstanding of the meaning of per se*-1 (Arist., *APo* A4, 73a34–37): 'Essential' are only the constituents of the essence, namely Porphyry's essential and Aristotle's *per se*-1.
 - (a₁) Not every cause can be assumed as the middle term of a demonstration. Efficient and final causes are not suitable to be assumed as the middle term of a demonstration; only material and formal causes and their analogous counterparts (namely, the genus and the differentia) are suitable candidates for the middle term.
 - (a₂) The terms of the conclusion are essentials (meaning 'constituents'); the major premise is essential *iff* the major term is a constituent of the subject.
 - (a₃) The middle term is a constituent for both the major and the minor.
- (b) *Misunderstanding of the meaning of per se*-2 (Arist. *APo* A4, 73a37–b3): Essential (*per se*-2) is the subject with respect to the predicate in the definition of which it is assumed (instead of the predicate with respect to the subject).

The error in both cases (a) and (b) stems from the erroneous assumption that the meaning of *per se* (Gr. *kath'hautó*; Ar. *dhātī* and *bi-dhātīhi*) in *Posterior Analytics* A4 is the same as 'essential' (*dhātī*) as defined in Porphyry's *Isagoge*, where it is assumed to be the equivalent of 'constituent' based on criterion (ii). The confusion arises due to the semantic overlap, as both '*per se*' and 'essential' can be translated into Arabic using the same adjective, *dhātī*. In claim (b), the anonymous scholar further misinterprets the definition of *per se*-2. A classic example of a *per se*-2 relation between predicate and subject is that between 'even' and 'number', since even and odd are necessarily defined in relation to number, which is assumed in their definitions. Here, the anonymous scholar is blamed for incorrectly attributing essentiality to the subject ('number') rather than the predicate ('even'). If this were the case, the *per se*-2 relation between subject and predicate would be essential in the sense of constituent.¹⁹

19 As far as I know, (b) cannot be traced back to the extant Greek commentaries on the

In claim (a₁), the anonymous scholar is said to maintain that the causes assumed as a middle term must resemble the constituents of a definition (i.e., genus and differentia), limiting them to material and formal causes only. This assumption draws an analogy between genus and matter, and differentia and form, as found in Porphyry's *Isagoge*.²⁰ However, this stance contradicts Aristotle's claim in *APo* B11, where efficient and final causes are shown to be admissible as middle terms in a demonstrative syllogism.²¹

As Avicenna later points out (T₉), the anonymous scholar's position leads to a contradiction. Despite excluding the possibility of assuming efficient and formal causes as middle terms, the scholar still relied on the traditional example of the syllogism establishing an eclipse by assuming the interposition of the earth between the sun and the moon as a middle term.

T₉. "How astonishing it is when that first [scholar] who has been taken as a reference (*al-mutashabbah bihi*) denies that the efficient cause (*al-'illa al-fā'ila*) is a middle term, only to promptly give as an example the establishment of the eclipse by the interposition of the earth! Yet, the earth's interposition is indeed an efficient cause for the eclipse and is assumed

Posterior Analytics: cf. Themistius or Philoponus: see Them. *Anal. Post. par.*, 10.30–11.5 and Philop. *In APo* p. 61.1–28. Alexander's commentary on *Posterior Analytics* survives in some fragments edited in Paul Moraux, *Le Commentaire d'Alexandre d'Aphrodise aux 'Seconds Analytiques' d'Aristote* (Berlin: De Gruyter, 1979); the only fully extant Late Antique Greek commentaries on the work are Themistius' paraphrase and Philoponus' commentary. Then, there are Eustratius' commentary on *APo* B and two anonymous commentaries (one on *APo* B and one on a part of *APo* A), which do not comment on the section discussed here; see Richard Goulet, "Aristote de Stagire" in R. Goulet (ed.), *Dictionnaire Des Philosophes Antiques* (Paris: CNRS Editions, 1989), vol. 1, 413–442 (esp. 439) and Jacques Brunschwig, "Aristote de Stagire—L'*Organon*, tradition grecque" R. Goulet (ed.), *Dictionnaire Des Philosophes Antiques* (Paris: CNRS Editions, 1989), vol. 1, 498–499.

20 Porph., *Isag.*, 11.12–17 and p. 15.6–7. See also Ammon., *In Isag.*, 57.23–25 and Ps.-Elias (David), *In Isag.*, 56.24–33. This idea has a background in the renowned analogy employed by Aristotle in *Met.* Z12, 1038a5–9 to explain the unity of the definition, namely the analogy between genus and a matter out of which differentiae make the forms.

21 To my knowledge, the position expressed in (a₁) cannot be traced back to the Greek tradition: Themistius maintained that all the four causes can be assumed as the middle term in a syllogism (Them. *Anal. Post. par.*, 52.1–4); as to Philoponus, his commentary on *APo* B11 might not be extant, as the authenticity of the extant commentary tentatively attributed to Philoponus is controversial: see Richard Sorabji's introduction to Owen Goldin (tr.), *Philoponus (?), On Aristotle's Posterior Analytics 2*, (London: Bloomsbury, 2009), vii–ix, as well as Sten Ebbesen, "Review of F. de Haas, M. Leunissen & M. Martijn, eds., *Interpreting Aristotle's Posterior Analytics in Late Antiquity and Beyond*". *Aestimatio. Critical Reviews in the History of Science* 9 (2012): 355–366, esp. 363–365. On Avicenna's treatment of the four causes in demonstrations, see Strobino, *Avicenna's Theory of Science*, 264–282.

in its definition. Putridity is also assumed in the definition of a type of fever, and many efficient and final causes are assumed in definitions and demonstrations, as will be explained to you later on.” (Ibn Sīnā, *Shifāʾ*, *Burhān*, 11.2, 130.3–7)

The anonymous scholar arguably drew the example in question from the reasoning outlined in *APo* B8, 93a29–36, which can be cast into the form of the following first-figure syllogism:

The screening by the interposition of the earth (between the sun and the moon) is an eclipse.
The moon is screened by the earth.
∴ The moon is eclipsed.

The interposition of the earth assumed as middle term in the syllogism also contradicts another assumption of the anonymous scholar, namely that the middle term ought to be ‘essential’ in the sense of ‘constituent’ (a₃):

T10. “What is also astonishing is that the example he cited, that is the interposition of the earth, is a constituent cause of the obscuration of light and is not constituted by it. Rather, it is an accident proper (*ʿāriḍ khāṣṣī*) to the moon, which is the minor term, without being a constituent for it.” (Ibn Sīnā, *Shifāʾ*, *Burhān*, 11.2, 130.8–9)

The statements reported by Avicenna presumably derive from an unknown treatise or commentary on Aristotle’s *Posterior Analytics*. Overall, what emerges from the analysis carried so far is a misunderstanding of the meaning of *per se* as referring only to those attributes that belong *per se* to the subject in the first of the two senses enumerated in *APo* A4 (*per se*-1), to the exclusion of those that belong to it *per se* in the second sense (*per se*-2). As a result, the anonymous scholar must have restricted the class of the necessary attributes of a subject to its essential constituents. According to this interpretation, all essential (*per se*-1) attributes of a subject are its necessary attributes and, conversely, all necessary attributes of a subject are its essential attributes (*per se*-1). Avicenna’s critique directly addresses this crucial aspect of the anonymous scholar’s interpretation, emphasizing that while essential constituents undoubtedly belong to the subject necessarily, not all attributes that are necessary to a subject are also among its essential constituents.²²

²² See Paul Thom, “On Logics of Genus and Differentia in the Aristotelian Tradition”, *Docu-*

3.2.2 The Second Anonymous Scholar: Abū l-Qāsim al-Kirmānī

As Avicenna reported, the anonymous scholar was imitated and taken as a reference (T9: *al-mutashabbah bihi*) by a second scholar who incurred in the same error. In the subsequent passage (T11), Avicenna referred to an unnamed scholar being led astray by the first anonymous scholar, whom he trusted for matters of logic (T10: *fa-‘awwala ‘alayhi fī l-mantiq*).

T11. [The second scholar(s)] “I have seen (*wa-qad ra’aytu*) someone self-claiming some relation to knowledge (*ba’d al-muntasibīna ilā l-ma’rifā*), among those to whose nature the interpretation of this man was more akin and thus relied upon him in matters of logic (*fa-‘awwala ‘alayhi fī l-mantiq*), being firmly convinced of all of that. The necessary implications of this method have forced him to say: [(i)] “Every necessary (*ḍarūrī*), inseparable (*ghayr mufāriq*) predicate is constituent (*muqawwim*)” and [to say] that [(ii)] the proprium has no meaning common to the entire species all the time; and that [(iii)] the proprium is among the [features] whose separation is not impossible; [(iv)] and that the fact that the equilateral triangle has two equivalent angles near [its] base is a differentia, and not a proprium; and [to say] that [(v)] the fact that every triangle has [its] angles equal to two right angles is a differentia and not a proprium, and that these [features] are constituents for their subject”. (Ibn Sīnā, *Shifā’, Burhān*, 11.2, 129.5–10).

The second anonymous scholar presented in T11 is explicitly put in relation to the first scholar, suggesting a potential mentor-disciple relationship or, at the very least, a significant intellectual influence from the first scholar on the second, who reportedly relied on him in logical matters. The five claims Avicenna ascribed to him in T11 all stem from the narrow interpretation of *per se* in *APo* A4 as *per se-1*—that is, position (a) ascribed to the first anonymous scholar. As appears most clearly from the statements ascribed to the second scholar, this narrow interpretation notably impacts the selection of premises in syllogistic reasoning. According to this interpretation, only constituents essentially and necessarily belong to their subjects (i) are admitted as terms of the syllogism, thereby excluding non-essential but necessary attributes, such as propria (ii–iii). Furthermore, propria are said to be removable from their subjects without causing their destruction, leading to the erroneous claims that all the features

menti e studi sulla tradizione filosofica medievale 27 (2016): 131–162 (esp. 151–152), rightly observing that, for Avicenna, essential constituents represent a subclass of the necessary implicates.

that cannot be removed from their subject without causing it to cease should be categorized as essential in the sense of constituent (iv–v).²³ This line of reasoning culminates in paradoxical assertions like statement (v), which claims that having the internal angles equivalent to two right angles ('2R' for the sake of brevity) is not a proprium of the triangle, but rather a *differentia specifica* and a constituent of its essence (v).

Claims (i–v) in T11 allow for a tentative identification of the second scholar. Views analogous to those listed above can be detected in the *Letter to the Vizir Abū Sa'd (Risāla ilā al-wazīr Abī Sa'd)*, in which Avicenna summarized a dispute he had with the scholar Abū l-Qāsim al-Kirmānī, presumably in Hamadhān, in 405H/1015.²⁴ The purpose of the *risāla* is to ask for a judgement on the controversy of the vizir Abū Sa'd al-Hamadhānī. Abū l-Qāsim al-Kirmānī, the addressee of Avicenna's criticism, is known from a number of bio-bibliographical sources. As Yahya Michot reconstructed, al-Kirmānī's name appears in 'Alī b. Zayd al-Bayhaqī's (d. 565H/1169) *Tatimmat Šiwān al-Ḥikma*,²⁵ where the controversy that is the subject of Avicenna's *risāla* is also mentioned, as well as in Abū Ḥayyān at-Tawḥīdī's (d. 414H/1023) *Kitāb al-Imtā' wa-l-Mu'ānasa*, where al-Kirmānī ("our friend in Rayy", *ṣadīqunā bi-r-Rayy*) is said to have authored a "Limpid exposition of the *Isagoge* and the *Categories*" (*Ṣafw as-Sharḥ li-Īsāghūjī wa-Qāṭighūrīyās*), which at-Tawḥīdī reportedly revised and corrected with the help of Muḥammad b. Ya'qūb b. Miskawayh (d. 421H/1030).²⁶ Al-Kirmānī must have maintained fairly close scientific relations with both at-Tawḥīdī and Miskawayh; Avicenna also associated him with Miskawayh in a letter to Bahmanyār (d. 458H/1066), the *Mubāḥatha* III, in less than flattering tones ("I resent being treated like Miskawayh, al-Kirmānī, and those people").²⁷ I will return in a moment to al-Kirmānī's scholarly relations with these scholars active in Baghdad; first, however, I will bring evidence to back up the identification of the second anonymous scholar in T11 with al-Kirmānī.

23 Against what Avicenna demonstrates in *Madkhal* 1.6.

24 This offers a *terminus post quem* for the composition of the *risāla*; see Yahya Michot, *Ibn Sīnā, Lettre au Vizir Abū Sa'd* (Beyrouth: Al-Bouraq, 2000), 31*–32*.

25 See Max Meyerhof, "Alī al-Bayhaqī's *Tatimmat Šiwān al-Hikma*: A Biographical Work on Learned Men of the Islam". *Osiris* 8 (1948): 122–217, esp. 147; Michot, *Ibn Sīnā, Lettre au Vizir Abū Sa'd*, 27*; David C. Reisman, "The life and times of Avicenna" in P. Adamson (ed.), *Interpreting Avicenna* (Cambridge: Cambridge University Press, 2013), 7–27, esp. 15.

26 See al-Tawḥīdī, *Kitāb al-Imtā' wa-l-mu'ānasa*, I, second night, 35, and Michot, *Ibn Sīnā, Lettre au Vizir Abū Sa'd*, 20–21*; Reisman, "The life and times of Avicenna", 15.

27 Jean R. Michot, "La Réponse d'Avicenne à Bahmanyār et al-Kirmānī: Présentation, traduction critique et lexique arabe-français de la *Mubāḥatha* III". *Le Muséon* 110 (1997): 143–221, esp. 147 and 190.

Speaking of al-Kirmānī in his *risāla* to the Vizir Abū Saʿd, Avicenna stated that: “He did not master the [meaning of] ‘essential’ (*adh-dhātī*), nor did he collect in mind its conditions”,²⁸ while also referring to al-Kirmānī’s difficulties in forming a valid syllogism. On several occasions, al-Kirmānī is reported to struggle in distinguishing the essential features of a given subject from its non-essential necessary implicates:²⁹

T12. “Among [all] this, there is his [i.e. al-Kirmānī’s] claim that everything that cannot possibly not be predicated of a subject in the existence and even in the pure estimation (*bi-t-tawahhum*), is essential (*dhātī*) for it [viz. the subject]. It is impossible not to predicate in the existence finiteness of every body, therefore it is essential for it [viz. the body]. I informed him of the difference between the accidental implicate (*al-ʿarīḍ al-lāzim*) and the essential (*adh-dhātī*), and I urged him to leave aside the existence and to come to the intellect.” (Ibn Sīnā, *Risāla ilā l-wazīr Abī Saʿd*, 8.2–9).

The passage from T12 suggests that al-Kirmānī posited, in the wake of the first anonymous scholar, that a predicate can hold necessarily of its subject only if it is a constituent essential element of its essence. Furthermore, it appears that al-Kirmānī argued for the necessity of the constituents based on the impossibility to remove them from their subject without causing the latter’s destruction, thus appealing to criterion (ii) on which the Baghdad Peripatetics also relied in their definition of essential attributes. In T12, the distinction between essential constituents and non-essential implicates is somewhat blurred. The broader context of the passage is al-Kirmānī’s attempt to build an argument to prove the finiteness of bodies. Reportedly, he assumed finiteness as an essential (and, therefore, indemonstrable) attribute of the body. As a result, he struggled to identify the object of demonstration in his argument precisely because he did not distinguish adequately between the (indemonstrable) essential constituents of bodies and their (demonstrable) implicates. This error corresponds to the one ascribed to the second anonymous scholar in T11, statements (iv–v). Statement (v), in particular, asserting that 2R is a differentia of the triangle and one of its constituents, perfectly corresponds to one of the paradoxical conclusions ascribed to al-Kirmānī in Avicenna’s *risāla* (T13):

28 *Risāla ilā l-wazīr Abī Saʿd*, 17.7.

29 *Risāla ilā l-wazīr Abī Saʿd*, 15.5–17.

T13. “He [viz. al-Kirmānī] said that the fact that the triangle has [its] angles equal to two right angles is a constituent (*muqawwim*) of the triangle, since anyone who knows the triangle in reality only knows it after knowing that it has this feature.” (Ibn Sīnā, *Risāla ilā l-Wazīr Abī Sa’d*, 14.10–12 = claim (v) in T11).

On account of the textual evidence provided so far, it does not seem too far-fetched to identify the second anonymous scholar that Avicenna critically addresses in *Burhān* 11.2 precisely with Abū l-Qāsim al-Kirmānī.

3.2.3 Back to the First Anonymous Scholar: Abū Sulaymān as-Sijistānī (d. ca. 377/987–988)?

Let us return to the first anonymous scholar attacked by Avicenna in *Burhān* 11.2, whose identity has yet to be ascertained. Although the identification of this scholar is less straightforward than that of the second scholar with al-Kirmānī, some textual clues in the passages examined so far encourage at least a tentative identification. The first scholar is accused of reading Aristotle’s *Posterior Analytics* in the light of Porphyry’s *Isagoge*. This hint offers a *terminus post quem* to situate him chronologically, for the *Posterior Analytics* had remained almost unexplored by Arabic logicians before Abū Bishr Mattā (d. 328/940 ca.), the renowned scholarch of the Baghdad school, realized the first translation of the text.³⁰ It is plausible that the philosopher in question was active within the Baghdad school, as the statements attributed to him are compatible with the ideas of the other members of the school.

The identification of the second scholar with Abū l-Qāsim al-Kirmānī permits to venture a bit further in our tentative identification of the first scholar. As reported by historical and biographical sources (see section 3.2.2 above), al-Kirmānī was known for his ties with at-Tawhīdī and Miskawayh. Interestingly,

30 See Gerhard Endress, “Der arabische Aristoteles und seine Lehrüberlieferung in Bagdad: Abū Bišr Mattā Ibn Yūnus” in U. Rudolph and R. Würsch (eds.), *Philosophie in Der Islamischen Welt 1: 8–10. Jahrhundert* (Basel: Schwabe Verlag, 2012), 290–301; Michael E. Marmura, “The Fortuna of the *Posterior Analytics* in the Arabic Middle Ages”, in M. Asztalos, J.E. Murdoch, and I. Niniluoto (eds.), *Knowledge and the Sciences in Medieval Philosophy—Proceedings of the Eighth International Congress of Medieval Philosophy (S.I.E.P.M.), Helsinki 24–29 August 1987, Vol. 1* (Helsinki, 1990), 85–103; Tony Street, “Arabic Logic”. In Dov M. Gabbay, John Woods, Akihiro Kanamori (eds.), *Handbook of the History of Logic, vol. 1: Greek, Indian and Arabic Logic* (New Holland: Elsevier, 2004), 523–596; Tony Street and Nadja Germann, “Arabic and Islamic Philosophy of Language and Logic”, Edward N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy* (Spring 2021 Edition), URL = <https://plato.stanford.edu/archives/spr2021/entries/arabic-islamic-language/>, paragraphs 1.1–1.2.

the two scholars were themselves closely linked to the circle of scholars who traced themselves to Abū Sulaymān as-Sijistānī (d. ca. 377/987–988), the ‘logician’ (*al-mantiqī* was his sobriquet) *par excellence* in Baghdad. At-Tawḥīdī was among his closest followers, to the extent that his works are an unparalleled source for as-Sijistānī’s teachings and the philosophical debates that took place in his circle.³¹ As-Sijistānī, a student of Yaḥyā b. ‘Adī, was at the time a leading exponent of the Baghdad school, where he was particularly reputed as a logician. This element is not irrelevant, as it sheds new light on Avicenna’s claim in T11 that the second scholar (presumably, al-Kirmānī) relied on the first scholar in matters of logic. Considering al-Kirmānī’s notorious relationships with the members of as-Sijistānī’s entourage, it would seem plausible that the latter’s teachings may have exerted some influence on al-Kirmānī.³² Unfortunately, despite as-Sijistānī’s reputation as a logician, the information available to us on his logical views is fairly limited and largely based on second-hand reports of his lectures and discussions within his circle.³³ Bibliographical sources ascribe him a (now lost) “Discourse on Logic” (*Kalām fī l-Mantiq*), but among his extant works, none is specifically devoted to logical matters.³⁴ The proposed identification of the first scholar mentioned by Avicenna is, therefore, inevitably speculative; but if plausible, we might be in front of valuable and otherwise unattested fragments of a work (or a lecture?) by as-Sijistānī on Aristotle’s *Posterior Analytics*. Moreover, we might have reconstructed a further piece of the intricate network of exchanges between Avicenna and the Baghdad Peripatetics.

4 Concluding Remarks

The reconstruction attempted so far allows us to formulate the hypothesis that Avicenna’s entire reappraisal of the traditional definition of essential and accidental in the *Shifā’* is to be read within the broader framework of a debate with the Baghdad school and the scholars who gravitated around it. Avicenna’s main concern was reaffirming the role of *per se*-2 predicates within Aristotle’s

31 See Joel L. Kraemer, *Philosophy in the Renaissance of Islam: Abū Sulaymān Al-Sijistānī and His Circle* (Leiden: Brill, 1986), 30–45; Reisman, “The life and times of Avicenna”, 15.

32 On al-Kirmānī’s intellectual upbringing and his connection with the Peripatetic school of Baghdad, see Michot, *Ibn Sīnā, Lettre au Vizir Abū Sa’d*, 18*–21*.

33 On the information available on as-Sijistānī’s views on logic, see Kraemer, *Philosophy in the Renaissance of Islam*, 140–165.

34 Kraemer, *Philosophy in the Renaissance of Islam*, 132–135.

theory of demonstrative syllogism against the too restrictive interpretation of the category of essential promoted by his adversaries. This debate on key concepts of logic and, more broadly, of philosophy bears evidence to the scientific and human interactions that Avicenna entertained with his contemporaries—a dimension that remains only partially explored to date. Examining Avicenna's works of logic against the background of their sources often proves to be a challenging task, due to the elusive and anonymous references often preferred by Avicenna when referring to the targets of his criticism. However, as Tony Street has masterfully demonstrated in his own research on the section on Aristotle's *Prior Analytics* (*Kitāb al-Qiyās*) of the *Shifā'*,³⁵ this kind of inquiry proves just as often a source of new insights and better understanding of the dialogue (and debate) surrounding Aristotle's *Organon* between Avicenna and other leading scholars of his times. My contribution is intended to fit into this line of research and lay the groundwork for a more in-depth reconstruction of the debate between Avicenna and the Baghdad school on logic. It is with immense gratitude that I dedicate it to Tony Street, whose unwavering encouragement and profound expertise have accompanied and guided me on my journey through the intricacies of Avicenna's logic.

Bibliography

Primary References

- Alexander Aphrodisiensis. *Alexandri Aphrodisiensis in Aristotelis Topicorum libros octo commentaria*. Ed. by Max Wallies. CAG II.2. Berlin: Reimer, 1891.
- Ammonius. *Ammonii in Porphyrii Isagogen sive v Voces*. Ed. by Adolf Busse. CAG IV.3. Berlin: Reimer, 1891.
- Elias. *Eliae (olim David) in Porphyrii Isagogen et in Aristotelis Categorias commentaria*. Ed. by Adolf Busse. CAG XVIII.1. Berlin: Reimer, 1900.
- Ibn Sīnā. *Ash-Shifā', al-Ilāhiyyāt*. Ed. by Sa'īd Zāyid and Ğürğ Š. Qanawātī. Cairo: Al-Hay'a al-'amma li-šu'un al-maṭābi' al-amīriyya, 1960.
- Ibn Sīnā. *Ash-Shifā', al-Mantiq, al-Burhān*. Ed. by Abū l-'Alā' Afīfī. Cairo: al-Maṭba'a al-amīriyya, 1956.
- Ibn Sīnā. *Ash-Shifā', al-Mantiq, al-Madḥal*. Ed. by Ğürğ Š. Qanawātī, Maḥmūd Al-Ḥuḍayrī, and Aḥmad F. Al-Ahwānī. Cairo: Al-Maṭba'a al-amīriyya, 1952.
- Ibn aṭ-Ṭayyib, Abū l-Faraj. *Ibn aṭ-Ṭayyib's Commentary on Porphyry's Eisagoge (Taḥsīl)*

35 Tony Street, "The Eminent Later Scholar' in Avicenna's *Book of the Syllogism*" *Arabic Sciences and Philosophy* 11 (2001): 205–218.

- Kitāb Īsāgūṭi li-Furfūriyūs*)—*Arabic Text Edited with Introduction and a Glossary of Greek-Arabic Logical Terms*. Ed. by Kwame Gyekye. Beyrouth: Dar el-Machreq, 1975.
- Kindī, Abū Yūsuf Ya'qūb b. Ishāq al-. *Kitāb fi l-Falsafa al-Ūlā*. Ed. by Roshdi Rashed and Jean Jolivet in *Oeuvres Philosophiques et Scientifiques d'Al-Kindī, Vol. 2: Métaphysique et Cosmologie*, Leiden: Brill, 1998.
- Philoponus. *Ioannis Philoponi in Aristotelis Analytica Posteriora commentaria: Cum anonymo in librum 11*. Ed. by Max Wallies. CAG XIII.3. Berlin: Reimer, 1909.
- Porphyrus. *Porphirii Isagoge et in Aristotelis Categorias commentarium*. Ed. by Adolf Busse. CAG IV.1. Berlin: Reimer, 1887.
- Porphyrus. *Isagoge, Arabic translation ascribed to Abū 'Uṭmān al-Dimašqī*. Ed. by Rüdiger Arnzen. Digital edition within the framework of the HUNAYNET Project (https://hunaynnet.oeaw.ac.at/isagoge.html#isa_ara#s1).
- Ps.-Elias (David). *Lectures on Porphyry's Isagoge*. Ed. by Leendert G. Westerink. Amsterdam: North-Holland Publishing Company, 1967.
- Tawḥīdī, Abū Ḥayyān al-. *Kitāb al-Imtā' wa-l-mu'ānasa*. Ed. by Aḥmad Amīn and Aḥmad az-Zayn, 3 vols., Beirut: Manṣūrāt Dār Maktabat al-Ḥayāt, 1965.
- Themistius. *Themistii Analyticorum posteriorum paraphrasis*. Ed. by Max Wallies. CAG V. 1. Berlin: Reimer, 1900.

Secondary References

- Badawī, 'Abd Al-Raḥmān. *Manṭiq Aristū*. (Reprint of the 1948–1952 edition). 3 vols. Beirut: Dār al-Qalam, 1980.
- Barnes, Jonathan. *Porphyry, Introduction*. Oxford: Clarendon Press, 2003.
- Benevich, Fedor. "Avicennian essentialism". *British Journal for the History of Philosophy* 30 (2022): 410–433.
- Benevich, Fedor. "Fire and Heat: Yaḥyā b. 'Adī and Avicenna on the Essentiality of Being Substance or Accident". *Arabic Sciences and Philosophy* 27 (2017): 237–267.
- Brunschwig, Jacques. "Aristote de Stagire—L'*Organon*, tradition grecque" R. Goulet (ed.), *Dictionnaire Des Philosophes Antiques* vol. 1, Paris: CNRS Editions, 1989, 498–499.
- Chiaradonna, Riccardo. *Ontology in Early Neoplatonism: Plotinus, Porphyry, Iamblichus*. Berlin/Boston: De Gruyter, 2023.
- Di Vincenzo, Silvia. *Avicenna, 'The Healing, Logic: Isagoge'—A New Edition, English Translation and Commentary of the Kitāb al-Madḥal of Avicenna's Kitāb al-Šifā'*. Berlin/Boston: De Gruyter, 2021.
- Ebbesen, Sten. "Review of F. de Haas, M. Leunissen & M. Martijn, eds., *Interpreting Aristotle's Posterior Analytics in Late Antiquity and Beyond*". *Aestimatio. Critical Reviews in the History of Science* 9 (2012): 355–366.
- Ellis, John. "Alexander's Defense of Aristotle's 'Categories'". *Phronesis* 39 (1994): 69–89.
- Endress, Gerhard. "Der arabische Aristoteles und seine Lehrüberlieferung in Bagdad:

- Abū Bišr Mattā Ibn Yūnus". In U. Rudolph and R. Würsch (eds.), *Philosophie in Der Islamischen Welt 1: 8–10. Jahrhundert*. Basel: Schwabe Verlag, 2012, 290–301.
- Goldin, Owen (tr.). *Philoponus (?) , On Aristotle's Posterior Analytics 2*. London: Bloomsbury, 2009.
- Goulet, Richard. "Aristote de Stagire" in R. Goulet (ed.), *Dictionnaire Des Philosophes Antiques*, vol. 1. Paris: CNRS Editions, 1989, 413–442.
- Kalbarczyk, Alexander. *Predication and Ontology: Studies and Texts on Avicennian and Post-Avicennian Readings of Aristotle's Categories*. Berlin/Boston: De Gruyter, 2018.
- Kraemer, Joel L. *Philosophy in the Renaissance of Islam: Abū Sulaymān Al-Sijistānī and His Circle*. Leiden: Brill, 1986.
- Marmura, Michael E., "The *Posterior Analytics* in the Arabic Middle Ages", in M. Asztalos, J.E. Murdoch, and I. Niniluoto (eds.), *Knowledge and the Sciences in Medieval Philosophy—Proceedings of the Eighth International Congress of Medieval Philosophy (S.I.E.P.M.), Helsinki 24–29 August 1987, Vol. 1*, Helsinki, 1990, 85–103.
- Meyerhof, Max. "Alī al-Bayhaqī's *Tatimmat Siwān al-Hikma*: A Biographical Work on Learned Men of the Islam". *Osiris* 8 (1948): 122–217.
- Michot, Jean R. "La Réponse d'Avicenne à Bahmanyār et al-Kirmānī: Présentation, traduction critique et lexique arabe-français de la *Mubāḥatha* 111". *Le Muséon* 110 (1997): 143–221.
- Michot, Yahya. *Ibn Sīnā, Lettre au Vizir Abū Sa'd*. Beyrouth: Al-Bouraq, 2000.
- Morau, Paul. *Le Commentaire d'Alexandre d'Aphrodise aux 'Seconds Analytiques' d'Aristote*, Berlin: De Gruyter, 1979.
- Reisman, David C. "The life and times of Avicenna". In P. Adamson (ed.), *Interpreting Avicenna*. Cambridge: Cambridge University Press, 2013, 7–27.
- Reisman, David C. *The Making of the Avicennan Tradition: The Transmission, Contents, and Structure of Ibn Sīnā's Al-Mubāḥatāt (The Discussions)*. Leiden/Boston: Brill, 2002.
- Rudolph, Ulrich; Hansberger, Rotraud; Adamson, Peter (eds.). *Philosophy in the Islamic World—Volume 1: 8th–10th Centuries*. Leiden: Brill, 2017.
- Street, Tony and Germann, Nadja. "Arabic and Islamic Philosophy of Language and Logic". Edward N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy* (Spring 2021 Edition), URL = <https://plato.stanford.edu/archives/spr2021/entries/arabic-islamic-language/>.
- Street, Tony. "Arabic Logic". In Dov M. Gabbay, John Woods, Akihiro Kanamori (eds.), *Handbook of the History of Logic*, vol. 1: *Greek, Indian and Arabic Logic*. New Holland: Elsevier, 2004, 523–596.
- Street, Tony. "The Eminent Later Scholar' in Avicenna's *Book of the Syllogism*" *Arabic Sciences and Philosophy* 11 (2001): 205–218.
- Strobino, Riccardo. *Avicenna's Theory of Science. Logic, Metaphysics, Epistemology*. Oakland: University of California Press, 2021.

Strobino, Riccardo. "Per Se, Inseparability, Containment and Implication. Bridging the Gap between Avicenna's Theory of Demonstration and Logic of the Predicables". *Oriens* 44 (2016): 181–266.

Thom, Paul. "On Logics of Genus and Differentia in the Aristotelian Tradition", *Documenti e studi sulla tradizione filosofica medievale* 27 (2016): 131–162.

Avicenna and as-Suhrawardī on the Flying Man: From the Flying Man to Existentialism

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Avicenna's (d. 1037) Flying Man is one of the most famous thought experiments in the Arabic philosophical tradition. The Flying Man first appears in *ash-Shifā'*, *an-Nafs* 1.1 and v. 7 (*The Healing, De Anima*) and later also shows up in *al-Ishārāt wa-t-Tanbihāt*, *namaṭ* 111.1 (*The Pointers and Reminders*), serving different purposes in these two works.¹ There is a vast secondary literature on the Flying Man, and scholars disagree on many aspects of it.² Shihāb ad-Dīn

- 1 See Ibn Sīnā, *Avicenna's De Anima (Arabic Text): Being the Psychological Part of Kitāb al-Shifā'*, ed. by F. Rahman (London: Oxford University Press, 1959), 15, l. 17–16, l. 17, 255, ll. 6–10; *Al-Ishārāt wa-t-Tanbihāt*, ed. by Muṭabā az-Zārī'ī (Qom: Būstān-i Kitāb, 1434/2012–2013), 233.
- 2 See Michael E. Marmura, "Avicenna's 'Flying Man' in Context," *The Monist* 69, no. 3 (1986): 383–395; "Fakhr al-Dīn al-Rāzī's Critique of an Avicennan *Tanbih*," in *Historia Philosophiae Medii Aevi*, ed. by Herausgegeben von Burkhard Mojsisch and Olaf Pluta (Amsterdam: B.R. Grüner, 1991), 627–641; J.R. Michot, "La Réponse d'Avicenne à Bahmanyār et al-Kirmānī: Présentation, traduction critique et lexique arabe-français de la *Mubāḥatha* 111," *Le Muséon* 110, no. 1–2 (1997): 143–221; Dag Nikolaus Hasse, *Avicenna's De Anima in the Latin West: The Formation of a Peripatetic Philosophy of the Soul, 1160–1300* (London: The Warburg Institute, 2000), 80–92; Richard Sorabji, *Self: Ancient and Modern Insights about Individuality, Life, and Death* (Chicago: University of Chicago Press, 2006), 222–226; Deborah L. Black, "Avicenna on Self-Awareness and Knowing that One Knows," in *The Unity of Science in the Arabic Tradition: Science, Logic, Epistemology and their Interactions*, ed. by Shahid Rahman, Tony Street, and Hassan Tahiri (Dordrecht: Springer, 2008), 63–87; Lukas Muehlethaler, "Ibn Kammūna (d. 683/1284) on the Argument of the Flying Man in Avicenna's *Ishārāt* and al-Suhrawardī's *Talwīḥāt*," in *Avicenna and His Legacy: A Golden Age of Science and Philosophy*, ed. by Y. Tzvi Langermann (Turnhout: Brepols Publishers, 2009), 179–203; Ahmed Alwishah, "Ibn Sīnā on Floating Man Arguments," *Journal of Islamic Philosophy* 9 (2013): 32–53; Meryem Sebti, "Avicenna's 'Flying Man' Argument as a Proof of the Immateriality of the Soul," in *De l'Antiquité tardive au Moyen Âge: Études de logique aristotélicienne et de philosophie grecque, syriaque, arabe et latine offertes à Henri Hugonnard-Roche*, ed. by Elisa Coda and Cecilia Martini Bonadeo (Paris: Vrin, 2014), 531–543; Jari Kaukua, *Self-Awareness in Islamic Philosophy: Avicenna and Beyond* (Cambridge: Cambridge University Press, 2015), chap. 2; "The Flying and the Masked Man, One More Time: Comments on Peter Adamson and Fedor Benevich, 'The Thought Experimental Method: Avicenna's Flying Man Argument,'" *Journal of the American Philosophical Association* 6, no. 3 (2020): 285–296; Tommaso Alpina, "The Soul of, the Soul in Itself, and

as-Suhrawardī (d. 1191), founder of the Illuminationist (*ishrāqī*) tradition, also advances his unique ontological reading of the Flying Man, which has not yet been carefully studied.

The first half of this chapter offers an in-depth overview of Avicenna's Flying Man, which is necessary for understanding as-Suhrawardī's subsequent reading of it. There are obvious changes and developments in how Avicenna uses the Flying Man. I start from the most detailed version of the Flying Man—which appears as the Flying Man Argument (FMA)—in *ash-Shifā'*, *an-Nafs* 1.1, the purpose of which is to prove the incorporeality of the human soul (*nafs*) or self (*dhāt*). I resort to relevant passages in *al-Mubāḥaṭhāt* 111 (*The Investigations*) to reconstruct the FMA, as Avicenna responds in detail to Abū l-Qāsim al-Kirmānī's critique of the FMA, providing some invaluable information.³ I then turn to *al-Ishārāt*, *namaṭ* 111.1 and show that Avicenna there mainly uses the Flying Man to reveal the constancy of [*primitive*] *self-awareness* (*ash-shu'ūr bi-dh-dhāt*).⁴ Lastly, I introduce some aspects of Avicenna's discussions of primitive self-awareness—the significant epistemological phenomenon that underlies

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- the *Flying Man* Experiment," *Arabic Sciences and Philosophy* 28, no. 2 (2018): 187–224; Peter Adamson and Fedor Benevise, "The Thought Experimental Method: Avicenna's Flying Man Argument," *Journal of the American Philosophical Association* 4, no. 2 (2018): 147–164; Heidrun Eichner, "endoxa and the *Theology of Aristotle* in Avicenna's 'Flying Man': Contexts for Similarities with Sceptical and Cartesian Arguments in Avicenna," in *Sceptical Paths: Enquiry and Doubt from Antiquity to the Present*, ed. by Giuseppe Veltri et al. (Berlin: De Gruyter, 2019), 67–82. For an overview of the historical setting of the Flying Man, see Marmura, "Avicenna's 'Flying Man,'" 383–385. Marmura observes that "the vast majority of the *mutakallimūn* [theologians] ... were atomists, upholding a materialist concept of the human soul"; see Marmura, "Avicenna's 'Flying Man,'" 384. By contrast, Avicenna argues that this is a "false belief" (*ẓann fāsid*) and that the human soul is an incorporeal substance; see Ibn Sīnā, *Aḥwāl an-nafs*, ed. by Aḥmad Fu'ād al-Ahwānī (Cairo: Dār Iḥyā' al-Kutub al-'Arabiyya, 1952), 183, ll. 3–13. For the Latin reception of the Flying Man, see Hasse, *Avicenna's De Anima*, 87–92; Juhana Toivonen, "The Fate of the Flying Man: Medieval Reception of Avicenna's Thought Experiment," in *Oxford Studies in Medieval Philosophy, Volume 3*, ed. by Robert Pasnau (Oxford: Oxford University Press, 2015), 64–98. For a comparison between Avicenna's Flying Man and Descartes's *cogito*, see Thérèse-Anne Druart, "The Soul and Body Problem: Avicenna and Descartes," in *Arabic Philosophy and the West: Continuity and Interaction*, ed. by Thérèse-Anne Druart (Washington: Center for Contemporary Arab Studies, 1988), 27–49.
- 3 See Ibn Sīnā, *Al-Mubāḥaṭhāt*, ed. by Muḥsin Bīdārfar (Qom: Intishārāt-i Bīdār, 1413/1992–1993), 58–62, §§ 56–74. For studies of these passages, see Michot, "La Réponse d'Avicenne"; Muehlethaler, "Ibn Kammūna on Flying Man," 194–200; for information on Abū l-Qāsim, see David C. Reisman, *The Making of the Avicennan Tradition: The Transmission, Contents, and Structure of Ibn Sīnā's al-Mubāḥaṭāt* (The Discussions) (Leiden: Brill, 2002), 166–185.
- 4 Following Deborah Black, I sometimes add "primitive" to distinguish the Avicennian self-awareness from other types of self-knowledge; see Black, "Avicenna on Self-Awareness."

the Flying Man—in his late unsystematic works *al-Mubāḥathāt* and *at-Ta'liqāt* (*The Notes*).⁵

Later, as-Suhrawardī adopts Avicenna's Flying Man and his theory of primitive self-awareness. He first combines Avicenna's two versions of the Flying Man in *at-Talwihāt al-Lawḥiyya wa-l-'Arshiyya*, Physics IV.3 (*The Intimations of the Tablet and the Throne*).⁶ Then, taking Avicenna's discussions of primitive self-awareness as his starting point, as-Suhrawardī formulates the theory of presential knowledge (*al-'ilm al-ḥudūrī*) in *at-Talwihāt*, Metaphysics III.1 through his well-known "Story and Dream" (*ḥikāya wa-manām*) of Aristotle, and in *al-Mashārī' wa-l-Muṭārahāt*, Metaphysics VII.1 (*The Sources and Debates*).⁷ Moreover, towards the end of *at-Talwihāt*, in Metaphysics V. 15,⁸ as-Suhrawardī recounts his Sufi experience—which I call the Purified Self—that is essentially similar to the Flying Man and thereby advances his unique ontological reading of the Flying Man: the self is just *existence* (*wujūd*) itself and has no quiddity other than *pure existence*. The second half of this chapter focuses on this passage. I analyze how as-Suhrawardī arrives at this proposition from Avicenna's Flying Man. I then argue that as-Suhrawardī's purpose is to use Avicenna's own

5 According to Dimitri Gutas, *al-Mubāḥathāt* is "a collection of philosophical correspondence between Avicenna and Bahmanyār (and indirectly, Abū-l-Qāsim al-Kirmānī) on the one hand, and between Avicenna and Ibn-Zayla on the other, all dating from the last (Iṣfahān) period of Avicenna's life"; see Dimitri Gutas, *Avicenna and the Aristotelian Tradition: Introduction to Reading Avicenna's Philosophical Works* (Leiden: Brill, 2014), 159. For a comprehensive study of *al-Mubāḥathāt*, see Reisman, *Making of Avicennan Tradition*. According to Seyyed Hossein Mousavian, *at-Ta'liqāt* is "a collection of [1031] short and long notes in logic, natural sciences and metaphysics" and "one of Ibn Sīnā's latest works and probably contains his last theses on some issues"; see Ibn Sīnā, *At-Ta'liqāt*, ed. by Seyyed Hossein Mousavian (Tehran: Iranian Institute of Philosophy, 2013), "Introduction," 3–4.

6 See as-Suhrawardī, *At-Talwihāt al-Lawḥiyya wa-l-'Arshiyya*, ed. by Najafqulī Ḥabībī (Tehran: Iranian Institute of Philosophy, 2009), 155, l. 17–156, l. 3.

7 See, respectively, as-Suhrawardī, *At-Talwihāt*, 238–243; *Kitāb al-Mashārī' wa-l-Muṭārahāt* (*al-'ilm ath-thālith*), in *Œuvres philosophiques et mystiques* (tome 1), ed. by Henry Corbin (Tehran: Institut d'études et des recherches culturelles, 1993), 483–489, §§ 208–211. Presential knowledge is the epistemological foundation of as-Suhrawardī's Illuminationism and his attempt to answer the problem of how God and humans know particulars; see Jari Kaukua, "Suhrawardī's Knowledge as Presence in Context," *Studia Orientalia* 114 (2013): 309–324; *Self-Awareness*, chaps. 5–6; Tianyi Zhang, *A Philosophical Enquiry into the Nature of Suhrawardī's Illuminationism: Light in the Cave* (Leiden: Brill, 2023), chap. 2. *At-Talwihāt* and *al-Muṭārahāt* are as-Suhrawardī's two most important Peripatetic-style works; these two works and *Ḥikmat al-Ishrāq* (*The Philosophy of Illumination*) together form his Illuminationist syllabus and must be studied in order (first *at-Talwihāt*, then *al-Muṭārahāt*, and lastly *Ḥikmat al-Ishrāq*), as as-Suhrawardī requires in the Introduction to *al-Muṭārahāt*; see as-Suhrawardī, *Al-Muṭārahāt*, 194, ll. 5–8.

8 As-Suhrawardī, *At-Talwihāt*, 282–285.

Flying Man to undermine his quiddity–existence distinction, which is the foundation of Avicenna’s Essentialist metaphysics. Lastly, I show that this move is essential to building as-Suhrawardī’s own Existential metaphysics, which features the *systematic ambiguity of existence* (*tashkik al-wujūd*), or *gradation of existence*, in terms of perfection and deficiency.⁹

1 Avicenna’s Flying Man Argument in *ash-Shifā’*, *an-Nafs*

The Flying Man first appears at the end of *ash-Shifā’*, *an-Nafs* 1.1. Avicenna writes:

[Text 1]

[T1a = FMA’s nature and audience] We should indicate at this place a *proof/affirmation of the existence of the soul that we have* (*ithbāt wujūd an-nafs allatī lanā*) by way of reminding and calling to mind (*at-tanbīh wa-t-tadhkīr*); this indication is at the correct place for those who have the capability to observe the truth by themselves, without needing to be instructed, prodded, or directed away from fallacies.

[T1b = thought experiment] We say: One of us (*al-wāḥid minnā*) should imagine as if he is created *all at once* (*dufʿatan*) and as a *complete* [human] (*kāmilan*). But his *sight* (*baṣar*) is covered from seeing external [things]. He is created floating in the air or void (*hawāʾ aw khalāʾ*) in a manner where no air resistance hits him so that he would have to *sense* it. His limbs are separated, so they do not *meet* or *touch* each other.

[T1c = minor premise] Then, he ponders whether he affirms the *existence of his self* (*yuthbitu wujūd dhātihi*).¹⁰ So he does not doubt his affirmation that his self (*dhāt*) exists, although he does not affirm any part of his limbs, anything inside his bowels, his heart or brain, or anything external. But he affirms his self (*dhāt*) and does not affirm that it has any length, width, or depth. Even if in that state he were able to imagine a hand or another organ, he would not imagine it as a part of his self (*dhāt*), nor as a condition for his self (*dhāt*).

9 Jari Kaukua offers an alternative analysis of this passage and focuses on as-Suhrawardī’s argument that *substantiality* (*jawhariyya*) is external to the human soul; see Kaukua, *Self-Awareness*, 118–121.

10 In discussions of self-awareness, I render *dhātuhū*, for instance, as “his self” rather than “himself” to distinguish it from a reflexive pronoun, as “his self” means his *self* or his “I.” Similarly, phrases such as “my self,” “your self,” and “its self” will also appear.

[T1d = major premise] You know that what is affirmed (*al-muthbat*) is not what is not affirmed and what is acknowledged (*al-muqarr bihī*)¹¹ is not what is not acknowledged.

[T1e = conclusion] Therefore, the self (*dhāt*) whose existence he affirms is specific to him, on the condition that [the self] is he himself, other than his body or his organs that he does not affirm.

[T1f = purpose] Thus, he who is alert (*al-mutanabbih*) has a way to be mindful of the *existence of the soul* as something that is not the body (*al-jism*), nor [any] body (*jism*), and to be acquainted with it and feel it (*‘arīf bihī mustash‘ir lahū*) [i.e., the soul]. If he is heedless of it, he needs to be prodded.¹²

The FMA in *ash-Shifā’, an-Nafs* 1.1 is the most detailed version of the Flying Man and the focus of modern scholarship. Scholars mainly disagree on three aspects of the FMA: (1) whether it is about the *self* or the *essence* of the human soul (as *dhāt* in Arabic can mean both “self” and “essence”), (2) its logical status (that is, whether it is a rigorous *argument* [*hujja*] or a less strict *reminder* [*tanbīh*] or *indication*), and (3) its intended purpose(s).¹³

Answers to these questions are crucial to reconstructing the FMA. One way to address these questions is by resorting to the relevant passages in *al-Mubāḥa-*

11 Reading *al-muqarr bihī* with Michael Marmura and Dag Hasse; see Marmura, “Avicenna’s ‘Flying Man,’” 387; Hasse, *Avicenna’s De Anima*, 80, notes 2 and 3.

12 Ibn Sīnā, *De Anima*, 15, l. 19–16, l. 17; cf. Marmura, “Avicenna’s ‘Flying Man,’” 387; Hasse, *Avicenna’s De Anima*, 80; Kaukua, *Self-Awareness*, 35; Adamson and Benevich, “Flying Man Argument,” 148–149.

13 Dag Hasse first identifies these three problems; see Hasse, *Avicenna’s De Anima*, 81. (1) Many scholars agree that *dhāt* refers to “self”; see, for instance, Marmura, “Avicenna’s ‘Flying Man,’” Druart, “Soul and Body Problem,” 34; Black, “Avicenna on Self-Awareness,” 64–65; Kaukua, *Self-Awareness*, 38–41; “Flying and Masked Man,” 290–292. However, others argue that *dhāt* refers to “essence,” interchangeable with “quiddity” (*māhiyya*); see Hasse, *Avicenna’s De Anima*, 81–84; Sorabji, *Self*, 222–226; Adamson and Benevich, “Flying Man Argument,” 153–154, 161–162. (2) Many scholars hold that the FMA should not be read as a rigorous *argument* but as a *reminder* (*tanbīh*); see, for example, Marmura, “Avicenna’s ‘Flying Man,’” 392–393; Hasse, *Avicenna’s De Anima*, 86–87; Kaukua, *Self-Awareness*, 37–38; “Flying and Masked Man,” 294; Alpina, “*Flying Man* Experiment,” 207–208. However, there are others who disagree; see Muehlethaler, “Ibn Kammūna on Flying Man,” 181–182, 191–203; Adamson and Benevich, “Flying Man Argument,” 151–152. (3) Scholars’ views on the purpose(s) of the FMA are more diverse; see, for instance, Marmura, “Avicenna’s ‘Flying Man,’” 388; Hasse, *Avicenna’s De Anima*, 84–86; Black, “Avicenna on Self-Awareness,” 65; Kaukua, *Self-Awareness*, 34; “Flying and Masked Man,” 286–290; Adamson and Benevich, “Flying Man Argument,” 152–155.

thāt III, where Avicenna reviews the FMA in *ash-Shifāʾ*, *an-Nafs* in detail.¹⁴ He writes:

[Text 2]

[T2a] As for the discussion on the *argument* that proves [the existence of] the soul (*al-ḥujja al-muthbita li-n-nafs*) that is built on a supposition (*farḍ*) in which *self-awareness* (*shuʿūr bi-dh-dhāt*) is necessary ..., this is not one of the arguments that compel you [to accept], because that explanation (*al-bayān*) is built on a *reflective premise* (*muqaddima iʿtibāriyya*) to which the assent (*at-taṣdīq*) is not easy except for people with perspicacity and subtle insight (*ahl al-faṭāna wa-luṭf al-iṣāba*). ...

[T2b] There are *sylogisms* (*qiyāsāt*) built on premises to which indeed only some [people] assent while others do not. For instance, some premises are sensory (*ḥissīyya*), experiential and observational (*tajribīyya raṣ-dīyya*), and so on. For instance, Galen (*Jālīnūs*) explains that some bones are sensitive because of his experience (*tajriba*) of his teeth. ...

[T2c] In short, this argument (*al-ḥujja*) is either pointless (*ḍāʿīʾa*) or *decisive* (*qāṭiʾa*). For it is pointless for one whose mind comes to a stop at understanding this reflection (*al-iʿtibār*). ... But it is *decisive* for insightful people (*al-mustabṣirīn*).¹⁵

According to [T2a], the audience of the FMA is “people with perspicacity” (*ahl al-faṭāna*)¹⁶ because it is built on a “reflective premise” about self-awareness that only they will find plausible whereas others probably will not. At [T2b], Avicenna explains that some premises are not universally acknowledged because they require personal experience. For instance, only those who have experienced tooth pain or the like will assent to Galen’s statement that “some bones are sensitive.” Suppose that one has never experienced any bone pain; one will likely find the statement doubtful.¹⁷ At [T2c], Avicenna concludes that

14 See Ibn Sīnā, *Al-Mubāḥaṭhāt*, 58–62, §§ 56–74.

15 Ibn Sīnā, *Al-Mubāḥaṭhāt*, 58, l. 1–59, l. 5, §§ 56–59.

16 See also Ibn Sīnā, *Al-Mubāḥaṭhāt*, 60, l. 13, § 65.

17 In *al-Ishārāt*, *Nahj* VI.1, when dealing with propositions used in syllogisms, Avicenna classifies the reflective premise about self-awareness into a group of “propositions based on experiential data” (*al-mushāhadāt*). This group consists of two subcategories: (1) “propositions based on sense data” (*al-maḥsūsāt*), such as our judgements that “the sun exists,” “the sun shines,” and “the fire is hot,” and (2) “reflective propositions (*qaḍāyā iʿtibāriyya*) [acquired] through experience of powers other than sense perception,” such as our judgements that “we have thought,” “we have fear and anger,” and “we are aware of our selves (*nashʾuru bi-dhawātīnā*) and the acts of our selves”; see Ibn Sīnā, *Al-Ishārāt*, 124, ll. 8–12;

if a person has “perspicacity and subtle insight” and assents to the FMA’s reflective premise, then the FMA should be a decisive argument for him.

Therefore, we can infer from [Text 2] Avicenna’s answers to the three questions above. (1) The FMA is about the *self* (which is the referent of *dhāt*) rather than the *essence* of the human soul. (2) For those who assent to its *reflective premise* about self-awareness, the FMA should be a *decisive argument* (*ḥujja*) and a *syllogism* (*qiyās*), although others might find the FMA “pointless” (*ḍā’irā*).¹⁸ (3) The FMA aims to prove the *existence of the human soul*, as Avicenna mentions in [T1a] and [T2a], although, strictly speaking, the FMA seems more about establishing the *incorporeality* of the human soul (see later in this section).

Now return to the FMA itself in [Text 1]. The reason Avicenna states in [T1a] that the FMA works by “reminding and calling to mind” and its audience is “those who have the capacity to observe the truth by themselves” is that the FMA involves the *reflective premise* about self-awareness that requires personal experience and thus is not universally acknowledged, as [Text 2] explains.

At [T1b], Avicenna describes in detail how to perform the Flying Man thought experiment. He enumerates five conditions: the Flying Man is (1) created all at once (so that he does not have any prior knowledge) and (2) as a complete human (so that all his faculties can function normally), but (3) his eyes are covered, and (4) he is floating in the air without feeling the air, (5) with his limbs separated (so that he cannot perceive his body or anything external by any senses). That is to say, the Flying Man thought experiment is designed to help the reader, i.e., “one of us” (*al-wāḥid minnā*), to imagine a hypothetical state where all objects of knowledge (external or internal, prior or current)—except their self—are excluded; there is absolutely nothing for the reader to sense, imagine, remember, or understand, although all their faculties can function normally. Call this state an Epistemological Vacuum.

Under such extreme conditions, Avicenna advances the minor premise of the FMA in [T1c], which is the *reflective premise* that involves self-awareness

Muehlethaler, “Ibn Kammūna on Flying Man,” 197–198; Dimitri Gutas, “The Empiricism of Avicenna,” *Oriens* 40 (2012): 402–404.

18 Avicenna does not say that the FMA is a *demonstration* (*burhān*) presumably because it involves the *reflective premise* about self-awareness that is not universally acknowledged, and this makes the syllogism non-demonstrative. However, Ibn Kammūna (d. 1284) reconstructs the FMA as a *burhān* when commenting on as-Suhrawardī’s version of the FMA in *at-Tabwīḥāt*, Physics IV.3; see Ibn Kammūna, *Sharḥ at-Tabwīḥāt al-Lawḥiyya wa-l-ʿArshiyya* (vol. 2), ed. by Najafquli Ḥabībī (Tehran: Mirāth-i Maktūb, 2012), 253, l. 14–254, l. 3; Muehlethaler, “Ibn Kammūna on Flying Man,” 191–193.

mentioned in [T2a]: the Flying Man only affirms “the existence of his self.” Meanwhile, he does not affirm his body or any part of it (e.g., any external limb or internal organ) or anything external; nor does he affirm his self as a body that has three dimensions (i.e., length, width, and depth). Call this state Pure Self-Awareness.

According to *al-Mubāḥathāt* III, the medieval debate on the FMA between Avicenna and Abū l-Qāsim focuses on its reflective premise, that is, whether the Flying Man would be self-aware, or in other words, whether the Epistemological Vacuum depicted in the thought experiment amounts to Pure Self-Awareness. Abū l-Qāsim strongly disagrees with Avicenna and argues that the Flying Man would not be self-aware. This is particularly because Abū l-Qāsim opts for a *deductive model* of self-awareness, holding that self-awareness must be deduced from knowledge of other things, “for [a person] cannot apprehend a thing unless he apprehends his self as the apprehender.”¹⁹ That is to say, only when a person apprehends something else, does he deduce from this apprehension that he is the *subject* of this apprehension and thereby be self-aware. Given that the Flying Man is in an Epistemological Vacuum, there is nothing for him to apprehend and to deduce his self-awareness from. In response, Avicenna analyzes in detail our *daily* self-awareness to show that it should be plausible that the Flying Man is self-aware. He argues that the object of self-awareness must not be the whole (*jumla*) or any part of the body and that self-awareness does not occur through any sense perception or deduction from any act.²⁰ Thus, although the Flying Man is in an Epistemological Vacuum, this should not prevent him from being self-aware, as our daily self-awareness does not involve awareness of the body, any sense perception, or deduction from any act either.

Despite his response to Abū l-Qāsim, Avicenna nonetheless acknowledges that the reflective premise of the FMA requires personal experience as its basis. As Avicenna explains in [T2b], if one has never had any bone pain, one will likely not assent to Galen’s statement that “some bones are sensitive.” Similarly, if one has never experienced Pure Self-Awareness, one will likely find the reflective premise that “the Flying Man affirms the existence of his self”

19 Ibn Sīnā, *Al-Mubāḥathāt*, 58, l. 16–59, l. 1, §58. Note that this deductive model of self-awareness is similar to the model proposed by Aristotle; see Black, “Avicenna on Self-Awareness,” 63, 66; Peter Adamson, “The Simplicity of Self-Knowledge after Avicenna,” *Arabic Sciences and Philosophy* 28 (2018): 260. For the Latin debate on whether human self-awareness is direct or indirect, and how Latin authors use the Flying Man in this debate, see Toivanen, “Fate of Flying Man,” 80–86.

20 See Ibn Sīnā, *Al-Mubāḥathāt*, 59–60, §§ 60–64.

doubtful, no matter how Avicenna argues that Pure Self-Awareness in an Epistemological Vacuum is plausible. Some might worry that, as the Flying Man is a thought experiment, the Pure Self-Awareness state involved seems *hypothetical* and thus impossible to experience. One way to answer this worry is simply to argue that, with the help of the Flying Man thought experiment, “people with perspicacity” can actually experience Pure Self-Awareness, but the cost of this interpretation would be making the FMA somewhat dogmatic. A more modest interpretation is that a person is not required to experience Pure Self-Awareness *per se*; instead, it is sufficient for him to experience, with the help of the Flying Man, his *direct, unmediated self-awareness* (from which he can infer Pure Self-Awareness) and thereby assent to the FMA’s reflective premise without a doubt. Presumably, in addition to the Flying Man, there are also other ways to experience direct self-awareness, such as through meditation, or lying in bed comfortably and trying to block out all feelings and thoughts.

At [T1d], Avicenna mentions the major premise of the FMA, “what is affirmed is not what is not affirmed,” and concludes at [T1e]: as the Flying Man *only* affirms the existence of his self, his self must not be his body or any part of it or anything corporeal that he does not affirm.²¹ Lastly, at [T1f], Avicenna restates

21 Another major point of dispute in modern scholarship is whether the FMA involves the *masked man fallacy*, that is, the fallacy of “proceeding from an epistemic or phenomenological distinction to a metaphysical one”; see Kaukua, *Self-Awareness*, 37; see also “Flying and Masked Man,” 292–295; Black, “Avicenna on Self-Awareness,” 65; Sebtī, “Flying Man’ Argument,” 536–537; but Adamson and Benevich defend the FMA; see Adamson and Benevich, “Flying Man Argument.” To the best of my knowledge, medieval authors do not seem to share this worry. For instance, Fakhr ad-Dīn ar-Rāzī (d. 1210) mentions the FMA multiple times when commenting on Avicenna’s *al-Ishārāt*, *namaṭ* III.1–4 and never doubts its validity; see Fakhr ad-Dīn ar-Rāzī, *Sharḥ al-Ishārāt wa-t-Tanbīhāt* (vol. 2), ed. by ‘Alī Riḍā Najafzādah (Tehran: Anjuman-i Āthār va Mafākhir-i Farhangī, 2005), 202–209. In fact, ar-Rāzī even prefers the FMA for the incorporeality of the human soul over what he finds in *al-Ishārāt*, *namaṭ* III.1–4; see ar-Rāzī, *Sharḥ al-Ishārāt* (vol. 2), 209, ll. 8–13. I will not address this issue in this chapter; instead, I offer a very brief sketch of my argument. I hold that the key to avoiding the masked man fallacy is the *transparency of self-awareness*, and I argue in Section 3 that Avicenna indeed subscribes to this transparency thesis. Given the transparency of self-awareness, the Flying Man must know his self *completely*, and thus there is no “masked man” to speak of. Since the Flying Man does not simultaneously know anything corporeal in his Pure Self-Awareness, his self must actually be incorporeal. However, I must stress that the FMA is *insufficient* to show that the self is independent of or separable from the body. Rather, it shows that the self is incorporeal without ruling out the possibility that the self might have a corporeal basis (e.g., the brain) or otherwise be dependent on the body (cf. a software having a hardware basis). Later, Avicenna establishes through another demonstration (*burhān*) that the human soul indeed

the purpose of the FMA—proving “the existence of the soul as something that is not the body, nor [any] body”—and adds that the FMA has the advantage of helping the reader to “be acquainted with and feel” their soul or self (as the FMA invokes the reader’s direct self-awareness).

The analysis above shows that Avicenna first uses the Flying Man thought experiment to help the reader experience their direct self-awareness and thereby reveals the existence of their self (as the minor premise); he then formulates the FMA to prove that the self is not the body or anything corporeal. Thus, strictly speaking, the conclusion of the FMA is the *incorporeality* of the self, rather than the *existence* of the self. An abbreviated version of the FMA later reappears in *ash-Shifāʾ*, *an-Nafs* v. 7, by which Avicenna merely proves that the human soul is not the body.²²

Note that an implicit premise of the FMA is that, for humans, their *souls* (sing. *nafs*) are just their *selves* (sing. *dhāt*). Avicenna takes this point as a given in *ash-Shifāʾ*, *an-Nafs* I.1, but in v. 7 he explains that this premise should be evident: I simply know that my self is my “soul,”²³ namely, the principle (*mabdaʾ*) of my various activities of life, which is what the term “soul” normally means.²⁴

2 Avicenna’s Flying Man in *al-Ishārāt wa-t-Tanbīhāt* and Primitive Self-Awareness

In *al-Ishārāt*, *namaʿ* III.1, Avicenna reintroduces the Flying Man. But unlike the version in *ash-Shifāʾ*, *an-Nafs* I.1 and v. 7, the Flying Man here does not appear in the form of the FMA and serves a different purpose.

[Text 3]

[T3a] Reminder. Return to yourself (*irjiʿ ilā nafsika*) and ponder this: if you are healthy, or if you are in some other state where you understand (*tafʿtanu*) things correctly, are you unaware (*taghʿfulu*) of the *existence* of your self (*wujūd dhātika*) or do you not affirm yourself (*nafsaka*)? To my mind, an insightful person (*al-mustabʿir*) would not hold this.

is an independent incorporeal substance (see, for instance, *ash-Shifāʾ*, *an-Nafs* v. 2, and *al-Ishārāt*, *namaʿ* III.16–18), but this is not the purpose of the FMA; see Ibn Sīnā, *De Anima*, 209–221; *Al-Ishārāt*, 247–249.

²² See Ibn Sīnā, *De Anima*, 255, ll. 6–10.

²³ See Ibn Sīnā, *De Anima*, 256, ll. 11–15.

²⁴ See Ibn Sīnā, *De Anima*, 4, ll. 4–10.

[T3b] Moreover, a person's self (*dhāt*) is not distant (*lā ta'zubu*) from his self even when he is asleep or drunk, although his representation (*tamaththul*) of his self may not be kept in his memory.

[T3c] Suppose that your self (*dhāt*) has *just* been created, and its intellect and body (*al-aql wa-l-hay'a*) are healthy. And suppose that [your self] is, in short, in a position and state (*al-waḍ' wa-l-hay'a*) where it cannot see its parts, and its limbs do not *touch* each other; rather, they are spread apart and suspended for a moment in temperate air. You will find that [your self] has been unaware of everything except the *established character* (*thubūt*) of its *that-ness* (*inniyya*).²⁵

Avicenna articulates his position at [T3a]: whether healthy or not, as long as a person can understand things correctly, he will never be unaware of the *existence* (*wujūd*) of his *self*. Avicenna then examines two extreme states in [T3b]: sleep and drunkenness. According to Fakhr ad-Dīn ar-Rāzī's (d. 1210) commentary on *al-Ishārāt*, when asleep, a person's "understanding (*al-fahm*) and external sense do not remain sound"; when drunk, his "understanding (*al-fiṭna*) is further impaired ... because internal senses are also impaired in that state."²⁶ But even when asleep or drunk, still, "a person's self is not distant from his self." Avicenna points out that a person may fail to keep the representation of his self in memory during sleep and drunkenness, but this does not mean he is unaware of his self in those states.

Avicenna introduces at [T3c] a third hypothetical extreme state: the Flying Man. He enumerates five conditions similar to those in *ash-Shifā'*, *an-Nafs* 1.1: the Flying Man (1) has just been created (so that he does not have any prior

25 Ibn Sīnā, *Al-Ishārāt*, 233; cf. Marmura, "Avicenna's 'Flying Man,'" 391; Kaukua, *Self-Awareness*, 80. Note that *thubūt* shares the same root (*th-b-t*) with *ithbāt* (affirming, establishing, or proving). I render *inniyya* or *anniyya* (two forms of the same term) literally as "that-ness," which is usually synonymous with *wujūd* (existence). Thus, the last sentence means that you only affirm the existence of your self (cf. [T1c]). Amos Bertolacci argues that the correct spelling is *anniyya* instead of *inniyya* and discusses multiple meanings of *anniyya*, such as "individual existence," "individual essence," and "I-ness"; see Amos Bertolacci, "A Hidden *Hapax Legomenon* in Avicenna's Metaphysics: Considerations on the Use of *Anniyya* and *Ayyiyya* in the *Ilāhiyyāt* of the *Kitāb al-Šifā'*," in *The Letter before the Spirit: The Importance of Text Editions for the Study of the Reception of Aristotle*, ed. by Aafke M.I. van Oppenraay (Leiden: Brill, 2012), esp. 291–292, 304–305; see also Hasse, *Avicenna's De Anima*, 82–83; Muehlethaler, "Ibn Kammūna on Flying Man," 185–186, note 20; Alwishah, "Floating Man Arguments," 37–40.

26 Ar-Rāzī, *Sharḥ al-Ishārāt* (vol. 2), 203, ll. 3–4; cf. Naṣīr ad-Dīn aṭ-Ṭūsī, *Sharḥ al-Ishārāt wa-t-Tanbihāt* (vol. 1), ed. by Ḥasanẓādah al-Āmulī (Qom: Būstān-i Kitāb, 2007), 376, ll. 2–3.

knowledge), (2) with a healthy body and intellect (so that all his faculties can function normally), but (3) he cannot see any part of his body, (4) his limbs are spread apart, and (5) he is suspended in temperate air (so that he cannot perceive his body by any senses). As I showed in the previous section, the nature of the Flying Man state is an Epistemological Vacuum where all objects of knowledge are excluded except the self. Ar-Rāzī remarks that “in this state, the awareness of other things does not occur to him.”²⁷ Avicenna concludes that the Flying Man must be unaware of everything except the existence or that-ness (*innīyya*) of his self. This is the Pure Self-Awareness state.

In the previous section, I showed that, in *ash-Shifāʾ*, *an-Nafs* 1.1, Avicenna first uses the Flying Man thought experiment to reveal the *existence* of one’s self (as the minor premise) and then formulates the FMA to prove the *incorporation* of the self. In *al-Ishārāt*, Avicenna merely repeats the first step—without advancing the FMA—for a different purpose: to show the *constancy* of self-awareness. That is to say, a person is always aware of his self, even when he is asleep, drunk, or in a hypothetical Epistemological Vacuum that the Flying Man depicts. Avicenna thereby introduces his theory of primitive self-awareness, which he expounds in two of his latest works *al-Mubāḥathāt* and *at-Taʿlīqāt*.²⁸ He writes in *at-Taʿlīqāt*:

[Text 4]

[T4a] Self-awareness (*ash-shuʿūr bi-dh-dhāt*) is *essential* (*dhātī*) to the soul, rather than acquired from the outside, as if the self occurs, the awareness occurs with it. [The self] is not aware of [itself] by an instrument (*bi-āla*); rather, [the self] is aware of itself *by itself* and *from itself* (*bi-dhātihā wa-min dhātihā*). [The self’s] self-awareness is awareness *unrestrictedly* (*ʿalā l-iṭlāq*); I mean there is *no condition* for it in any respect. [The self] is that whose awareness is *constant* (*dāʾimat ash-shuʿūr*), rather than at one time without another. ...

[T4b] My self-apprehension (*idrākī li-dhātī*) is a *thing that constitutes me* (*amr muqawwim lī*); it is not something that occurs to me from the consideration of another thing. For when I say “I did something,” I am expressing my self-apprehension, even if I am unaware of my self-awareness. If I did not consider my self first, from where would I know “I did

27 Ar-Rāzī, *Sharḥ al-Ishārāt* (vol. 2), 203, l. 6.

28 See Black, “Avicenna on Self-Awareness”; Kaukua, *Self-Awareness*, chaps. 3–4; Ahmed Alwishah, “Avicenna on Self-Cognition and Self-Awareness,” in *Aristotle and the Arabic Tradition*, ed. by Ahmed Alwishah and Josh Hayes (Cambridge: Cambridge University Press, 2015), 143–163.

something"? Therefore, I have first considered my self and then its act, and I do not consider [another] thing by which I apprehend my self.²⁹

Avicenna identifies at [T4a] four key features of primitive self-awareness: it is essential (*dhātī*), unmediated (*bi-lā wasat*), unrestricted (*muṭlaq*) or unconditional (*bi-lā shart*), and constant (*dā'im*).³⁰ At [T4b], Avicenna articulates what he means exactly by "self-awareness" or "self-apprehension": the self-awareness that is responsible for the formation of every human's self or "I." He argues that whenever I do something, I always know that it is *I* who is acting; similarly, whenever I know something, I always know that it is *I* who is knowing.³¹ This suggests that I must have apprehended my self *before* knowing or doing anything; otherwise, I would not have known that I myself am the *subject* of all my knowledge and acts. In short, primitive self-awareness constitutes every human's self or "I" and thus underlies all our knowledge and acts. It can be compared to a computer's fundamental program that is always running in the background and cannot be shut down.

Since primitive self-awareness is so fundamental and pervasive, we normally would not pay particular attention to it and thus tend to be unaware of it (but note that we are never unaware of our *selves*). In this respect, self-awareness is similar to primary intelligibles (*awā'il*).³² For instance, we often use the law of contradiction without realizing it until logicians remind us. Similarly, we are always self-aware, but our self-awareness is almost always mixed with other apprehensions. Avicenna's Flying Man thought experiment is a brilliant way to direct our attention to our self-awareness itself: by excluding all other objects of knowledge and creating a hypothetical Epistemological Vacuum, the Flying Man forces us to pay attention to our self-awareness—which is constant and constitutes our very selves or "I"s—and thereby brings our background self-awareness to the foreground.

3 As-Suhrawardī's Ontological Reading of the Flying Man

As-Suhrawardī presents his ontological reading of the Flying Man towards the end of *at-Taḥwīḥāt*, in Metaphysics v. 15, where he recounts his Sufi experience.³³ He writes:

29 Ibn Sīnā, *At-Ta'liqāt*, 481–482, § 883, § 885; cf. 210, § 327, 442, § 809.

30 See Black, "Avicenna on Self-Awareness," 65–67.

31 See Ibn Sīnā, *At-Ta'liqāt*, 483, § 887.

32 See Ibn Sīnā, *At-Ta'liqāt*, 211, ll. 7–9, § 329; Black, "Avicenna on Self-Awareness," 67–69.

33 Ibn Kammūna spends as many as 12 pages commenting on *at-Taḥwīḥāt*, Metaphysics-

[Text 5]

[T5a] I became *purified* by my *self* (*tajarradtu bi-dhātī*) and examined it. I found that it was *that-ness* (*anniyya*) and *existence* (*wujūd*). ... I acquired my self, and I was *not absent* (*ghayr ghā'ib*) from it. [My self] did not have a *differentia* (*faṣl*), for I know [my self] by my very *non-absence* (*'adam ghayba*) from [my self]. If it had a *differentia* or *characteristic* (*khuṣūṣiyya*) behind (*warā'a*) *existence*, I would have known [the *differentia* or *characteristic*] when I knew [my self], as nothing is closer to me than me.³⁴

[T5b] During the *separation* (*at-taḥṣīl*), I did not see anything in my self except *existence* and *apprehension* (*idrāk*). ... So there remained nothing but the *existence*. ... Everyone who apprehends one's self [apprehends it] in accordance with the meaning of "I" (*'alā maḥmūm anā*), and during the *separation* and *examination* (*an-naẓar*), there existed nothing but *existence that apprehends itself* (*wujūd mudrik nafsahū*), so [the meaning of "I"] is [self-apprehending existence]. ...

[T5c] So, I made [the following] judgment: my *quiddity* is the *existence* itself (*māhiyyatī nafs al-wujūd*), and my *quiddity* in the intellect cannot be divided into two things [i.e., *quiddity* and *existence*] ...³⁵

In this very rich passage, as-Suhrawardī argues that every human soul or self is just *existence* itself, that is, pure *existence*; thus, the self cannot be divided into *quiddity* and *existence*, neither in the real world nor in the mind. As I show in the next section, his purpose is to undermine Avicenna's *quiddity–existence* distinction.

As-Suhrawardī's purification or separation state is essentially similar to Avicenna's Flying Man in that both involve *direct, unmediated self-awareness*. For ease of comparison, call as-Suhrawardī's state the Purified Self. As-Suhrawardī's

v. 15, as he remarks that "his [as-Suhrawardī's] discussion in this section ... contains six studies (*mabāḥith*) that are among what is the noblest (*ashraf*) in this book [*at-Talwihāt*], and many important questions derive from [these studies]"; Ibn Kammūna, *Sharḥ at-Talwihāt* (vol. 3), 545, ll. 14–16.

34 I leave out the sentences where as-Suhrawardī argues that neither "substantiality" (*jawharīyya*) nor "relations to the body" (*idāfāt ilā l-jism*) constitute the self. He rules out these two candidates presumably because some might take them to be the genus and *differentia* of the "soul" (*nafs*) and thus hold that, according to the soul's definition, its nature should be substantiality plus relations to the body. Instead, as-Suhrawardī argues that the human soul or self is just *existence* itself that has neither genus nor *differentia*; I focus on his main argument.

35 As-Suhrawardī, *At-Talwihāt*, 283, ll. 2–17; cf. Kaukua, *Self-Awareness*, 118–119.

Purified Self differs from Avicenna's Flying Man in several respects. First, Avicenna's Flying Man is a hypothetical Epistemological Vacuum where the self is not detached from the body but lacks any knowledge of the body, whereas as-Suhrawardī's Purified Self is an *actual* Sufi "station" (*maqām*) where the self is *detached* from the body.³⁶ Second, as Avicenna's Flying Man is hypothetical, its validity can be and indeed is questioned by people like Abū l-Qāsim, whereas as-Suhrawardī's Purified Self is *verifiable* by Sufis who have similar experience. Third, Avicenna's Flying Man lacks knowledge of everything except his self, whereas as-Suhrawardī's Purified Self, though deprived of all sensations, still has knowledge of intelligibles and can investigate the nature of his self during his purification or separation. In short, as-Suhrawardī presumably resorts to his Purified Self experience instead of Avicenna's Flying Man thought experiment to add more strength to his argument. Despite these differences, as-Suhrawardī adopts the core of Avicenna's Flying Man. This is also indicated by the two terms "that-ness" (*innīyya*) and "existence" (*wujūd*) he mentions together at the beginning of [T5a]. Recall that Avicenna states in [T1c] and [T3c] above that the Flying Man merely knows "the *existence* (*wujūd*) of his self" and "the established character of its *that-ness* (*innīyya*).³⁷ In full agreement with Avicenna, as-Suhrawardī, as the Purified Self, confirms that when he examines his self in itself, he merely knows *existence* and *that-ness*.

As I showed above, Avicenna first uses the Flying Man in *ash-Shifā'*, *an-Nafs* to prove the *incorporeality* of the human soul or self through the FMA, and then in *al-Ishārāt* to reveal the *constancy* of primitive self-awareness. As-Suhrawardī, when first introducing the Flying Man in *at-Talwihāt*, Physics IV.3, indeed adopts Avicenna's both uses, though with some modifications.³⁷ But when reintroducing the Flying Man in the form of his Purified Self in *at-Talwihāt*, Metaphysics V. 15, as-Suhrawardī creatively develops its metaphysical implications and draws a significant ontological conclusion: the self is just *existence* itself.

How does as-Suhrawardī draw this conclusion from his Purified Self and ultimately from Avicenna's Flying Man? When Avicenna states that the Flying Man merely affirms "the *existence* of his self," he seems to mean that the Flying Man

36 See Ibn Kammūna, *Sharḥ at-Talwihāt* (vol. 3), 545, ll. 12–14.

37 See as-Suhrawardī, *At-Talwihāt*, 155, l. 17–156, l. 3. I will not analyze the first version of as-Suhrawardī's Flying Man; see Muehlethaler, "Ibn Kammūna on Flying Man," 191–193; Kaukua, *Self-Awareness*, 106–108. But it is worth noting that as-Suhrawardī combines Avicenna's two versions of the Flying Man in *ash-Shifā'*, *an-Nafs* and *al-Ishārāt*. First, following *al-Ishārāt*, he states that whether you are asleep or awake, sober or drunk, or as a Flying Man, you will never be unaware of your that-ness (*innīyya*). Then, following *ash-Shifā'*, *an-Nafs*, he puts forward the FMA to prove the incorporeality of the human soul or self.

affirms his self's *being there*, that is, the fact that his self *exists* and *is there*. This seems quite different from as-Suhrawardī's claim that the self is the same as its *existence*. This is because the self might be something entirely different from *existence* (call it *X*), and the Flying Man merely knows the *existence* or *being-there* of *X*. However, as-Suhrawardī at [T5b] argues that since he, as the Purified Self, merely knows the *existence* of his self, his self is the same as its *existence*. What are his grounds?

As-Suhrawardī explains his reason in [T5a], and it has to do with a crucial premise that I call the *transparency* of primitive self-awareness. That is to say, in a person's self-awareness, he knows his self *entirely* and *exhaustively*: he knows the *whole* of his self (that is, his self has *no hidden part*), and his self is *not hidden* or *obscure* (*ghayr khafiyya*) in any sense (that is, his self is just as it appears in his self-awareness and has *nothing hidden* behind that). If the transparency of self-awareness can be established, then as-Suhrawardī, as the Purified Self, must know his self *completely*. As he merely affirms the *existence* of his self in his direct self-awareness, his self must be the same as its *existence*. In other words, given the transparency of self-awareness, any case where the self is something *X* that differs from its *existence* is impossible. This is because if the self were *X*, *X* would have appeared in the Purified Self's (and the Flying Man's) transparent self-awareness. However, the Purified Self (and the Flying Man) apprehends nothing but its own *existence*. Moreover, as-Suhrawardī argues in [T5a] that the self is not composed of *existence* and some *differentia*; otherwise, "I would have known [the differentia] when I know [my self], as nothing is closer to me than me."

It is clear now that as-Suhrawardī's argument hinges on the transparency of self-awareness. He briefly argues for this transparency thesis in [T5a]: "I acquired my self, and I was *not absent* (*ghayr ghā'ib*) from it. ... [F]or I know [my self] by my very *non-absence* (*'adam ghayba*) from [my self]." Ibn Kammūna remarks: "If a thing's self-apprehension is not by a *form* (*ṣūra*) but merely by its *non-absence* (*'adam ghayba*) from its self, as explained previously, then how could anything from [the thing] be *hidden* from it (*yakhfā 'anhū*)? Thus, its self-apprehension does not exceed its self (*lā yafḍulu 'alā dhātihi*)."³⁸ That is to say, the transparency thesis is inferred from the nature of self-awareness, which as-Suhrawardī and Ibn Kammūna understand to be the self's *non-absence* (*'adam ghayba*) from itself. The notion of *non-absence*, in fact, has a solid Avicennian basis. About the nature of self-awareness, Avicenna writes in *at-Ta'liqāt*:

38 Ibn Kammūna, *Sharḥ at-Talwihāt* (vol. 3), 546, ll. 5–6.

[Text 6] The self is, in every state, *present* (*hāḍira*) to the self, and there is no neglecting (*dhuhūl*) of [the self] in this case. [The self's] *existence* is the same as its *self-apprehension* (*nafs wujūdhā huwa nafs idrākihā li-dhātihā*). So, [the self] does not need [intentionally] to apprehend [the self], as [the self] is [constantly] apprehended and present to [the self], and there is no division in this case between the subject and object of apprehension.³⁹

In short, Avicenna holds that the nature of self-awareness is the unmediated *presence* (*ḥuḍūr*) of the self to itself. Similarly, he writes that “when you are aware of your self, necessarily there is *identity* (*huwiyya*) between the subject and object of awareness” and “necessarily, there is no *otherness* (*ghayriyya*) between the subject and object of awareness.”⁴⁰ Avicenna further states in [Text 6] that *self-awareness* is the same as the *existence* of the self.⁴¹ In other words, self-awareness is the *mode of existence* of the self; as long as the self exists, it is self-aware. Note that Avicenna's statement here is not to be confused with as-Suhrawardī's claim above that the *self* is the same as its *existence*.

Taking Avicenna's discussions of primitive self-awareness as his starting point, as-Suhrawardī argues in detail in *at-Talwihāt*, *al-Muṭārahāt*, and *Ḥikmat al-Ishrāq* that self-awareness is a type of *presential knowledge* (*ilm ḥuḍūrī*). He formulates multiple arguments that self-awareness does not involve any *form* (*ṣūra*) of the self and concludes that its nature is the *non-absence* of the self to itself.⁴² The reason as-Suhrawardī uses “non-absence” (*adam ghayba*) instead

39 Ibn Sīnā, *At-Ta'liqāt*, 442, l. 11–443, l. 1, § 810.

40 Ibn Sīnā, *At-Ta'liqāt*, 440, ll. 5–6, 441, l. 1, § 807. When examining the nature of self-awareness, Avicenna rules out other possibilities through multiple arguments. He argues that (1) neither the subject nor the object of self-awareness is the *whole* (*jumla*) or any *part* of the body; see Ibn Sīnā, *De Anima*, 255–257; *Al-Mubāḥathāt*, 59–60, §§ 60–62; *Al-Ishārāt*, *namaṭ* 111.3, 234–235; Marmura, “Avicenna's ‘Flying Man,’” 389–390; Black, “Avicenna on Self-Awareness,” 72–73; Kaukua, *Self-Awareness*, 67–71. (2) Self-awareness does not occur through the intermediary (*wasat*) of *sense perception* or through *deduction from acts* (*istidlāl min al-aḥwāl*); see Ibn Sīnā, *Al-Mubāḥathāt*, 60, §§ 63–64; *Al-Ishārāt*, *namaṭ* 111.4, 235; Kaukua, *Self-Awareness*, 72–75. (3) Moreover, self-awareness differs from *self-intellection* in that it does not involve apprehending the *true nature* (*ḥaqīqa*) or *quiddity* (*māhiyya*) of the self in an *intellectual* manner; see Ibn Sīnā, *Al-Mubāḥathāt*, 226–227, § 675; Black, “Avicenna on Self-Awareness,” 71–72; Kaukua, *Self-Awareness*, 98–102. (4) Furthermore, self-awareness does not involve any *impression* (*athar*) of the self; see Ibn Sīnā, *At-Ta'liqāt*, 208–210, § 325. As-Suhrawardī adopts these arguments and particularly focuses on the last one, that is, self-awareness does not involve any impression or *form* (*ṣūra*) (see below).

41 See also Ibn Sīnā, *At-Ta'liqāt*, 482, § 886, 484, § 889.

42 See as-Suhrawardī, *At-Talwihāt*, 239, l. 2–240, l. 1, 240, ll. 18–22; *Al-Muṭārahāt*, 484, ll. 6–

of Avicenna's "presence" (*ḥuḍūr*) is that "a thing cannot be *present* to itself, but rather, it is *not absent* from itself."⁴³ That is to say, we say *A* is *present* to *B* (or *B* is present to *A*) when *A* is something other than *B*; since the subject and object of self-awareness are identical, it is more accurate to say that the self is *not absent* from itself. To my knowledge, Avicenna does not *explicitly* argue from the nature of self-awareness that self-awareness is transparent, although I hold that he tacitly subscribes to this transparency thesis.⁴⁴ As-Suhrawardī, by contrast, articulates the transparency of self-awareness. He states, for instance, in *Ḥikmat al-Ishrāq* that "[your self's] apprehension of [your self] must be because of itself (*li-naḥsihā*) and as it is (*kamā hiya*), and you must *never* be *absent* from your *self* or any part of your self."⁴⁵

As self-awareness is transparent, as-Suhrawardī argues from his Purified Self experience that his self is just *existence* itself. Moreover, he states in [T5b] that his self is also just *apprehension* (*idrāk*) itself. That is to say, his self is self-apprehending existence, or existence featuring self-apprehension. He then applies this conclusion to every self-apprehender, including God, separate intellects, and heavenly and human souls.⁴⁶ Lastly, at [T5c], as-Suhrawardī concludes that his self is *pure existence*, and it cannot be divided into quiddity and existence, neither in the real world nor in the mind. The next section analyzes the metaphysical significance of this conclusion.

4 The Flying Man and the Quiddity–Existence Distinction

To explain the fundamental role the quiddity–existence distinction plays in Avicenna's Essentialist metaphysics, I quote the following passage from *ash-Shifāʾ, al-Ilāhiyyāt* VIII.4 (*The Healing, Metaphysics*).

14, §208, 487, ll. 6–8, §210; *Ḥikmat al-Ishrāq*, 111, l. 5–112, l. 4, §§115–116. For analyses of these passages, see Jari Kaukua, "I in the Light of God: Selfhood and Self-Awareness in Suhrawardī's *Ḥikmat al-ishrāq*," in *In the Age of Averroes: Arabic Philosophy in the Sixth/Twelfth Century*, ed. by Peter Adamson (London: The Warburg Institute, 2011), 146–148; "Suhrawardī's Knowledge as Presence," 313–315; *Self-Awareness*, 108–113, 127–131, 136–137; Zhang, *Suhrawardī's Illuminism*, 44–48, 52–53.

43 As-Suhrawardī, *At-Talwihāt*, 240, ll. 20–21.

44 Jari Kaukua holds the same view; see Jari Kaukua, "A Closed Book: Opacity of the Human Self in Mullā Ṣadrā," *Vivarium* 52 (2014): 242–245; *Self-Awareness*, 116–117. In Footnote 21, I briefly argue that the transparency of self-awareness is *necessary* for Avicenna's FMA to work without committing the masked man fallacy.

45 As-Suhrawardī, *Ḥikmat al-Ishrāq*, 112, ll. 3–4, §116.

46 See as-Suhrawardī, *At-Talwihāt*, 283, ll. 14–15, 284–285.

[Text 7]

[T7a] Everything that has *quiddity* (*māhiyya*) is an *effect* (*ma'lūl*), and all things other than *the necessary in terms of existence* (*al-wājib al-wujūd*; namely, God)⁴⁷ have quiddities. Those quiddities by themselves are *contingent in terms of existence* (*mumkinat al-wujūd*); indeed, *existence* (*wujūd*) occurs to them from the outside.

[T7b] The First (*al-awwal*; namely, God) has no quiddity, and *existence* emanates (*yafīḍu*) from Him on those that have quiddities. He is *pure in terms of existence* (*mujarrad al-wujūd*) on the condition that non-existence (*al-'adam*) and other descriptions are negated from [His existence, or Him]. Then, other things that have quiddities indeed are *contingent* and exist because of Him.⁴⁸

In this crucial passage, Avicenna binds together his two signature metaphysical distinctions: the necessary–contingent distinction and the quiddity–existence distinction. About the first distinction, a clear explanation is found in *al-Ishārāt*, *namaṭ* IV.9.

[Text 8]

Reminder. When [you] attend to any existent (*mawjūd*) in itself (*min ḥaythu dhātihi*)—without attending to any other thing—either it necessarily has existence in itself or it does not. If it necessarily [has existence], then it is the Truth by itself (*al-ḥaqq bi-dhātihi*), *the necessary in terms of its existence* from itself (*al-wājib wujūdihi min dhātihi*), and it is the Eternal (*al-qayyūm*). If it does not necessarily [have existence], ... then it, in consideration of itself, is a thing that is neither necessary nor impossible. So, every existent is either *necessary in terms of existence* by itself (*wājib al-wujūd bi-dhātihi*) or *contingent in terms of existence* with respect to itself (*mumkin al-wujūd bi-ḥasabi dhātihi*).⁴⁹

Everything that exists is either *necessary* or *contingent* in terms of existence in itself (it cannot be *impossible* [*mumtani'a*]; otherwise, it would not exist in the

47 I translate *wājib/mumkin al-wujūd* literally as “necessary/contingent in terms of existence” or “that whose existence is necessary/contingent.” Scholars use renderings such as “necessary/contingent existent,” “necessary/contingent existence,” and “the necessary/contingent of existence,” but none seem accurate enough.

48 Ibn Sīnā, *Ash-Shifā', al-Ilāhiyyāt*, ed. by al-Ab Qanawātī and Sa'īd Zā'id (Cairo: al-Hay'a al-Āmma li-Shu'ūn al-Maṭābi' al-Amīriyya, 1960), 347, ll. 8–12.

49 Ibn Sīnā, *Al-Ishārāt*, 266–267.

first place). If a thing is *necessary*, this means that the thing in itself naturally exists; it exists simply because of itself, without the need for any other cause. If a thing is *contingent*, this means that the thing in itself is *indifferent* to existence and non-existence; it exists only because of an external cause (or causes) that makes it exist. After [Text 8] from *al-Ishārāt*, *namaṭ* IV.9, Avicenna argues in *namaṭ* IV.10–20 that the *necessary* in terms of existence must exist as the ultimate cause of the whole sequence of cause and effect, and that there must be only *one* ultimate cause, which is God.⁵⁰ Everything that exists other than God is *contingent* in terms of existence.

Avicenna in [Text 7] further binds the necessary–contingent distinction and the quiddity–existence distinction together. He states at [T7a] that every *contingent* is that which has quiddity, that is, a *composite of quiddity and existence*. This is because every quiddity in itself is *indifferent* to existence and non-existence (see below); it exists only when existence occurs to it from the outside. According to [T7b], the only *necessary* is *pure existence*, and it has no quiddity. This is God, who is the First, the Truth, and the Eternal. From the necessary, existence emanates on contingents that have quiddities. This is Avicenna's ontological interpretation of God and divine creation. We can summarize [Text 7] into two identity claims:

Claim A: God = the *necessary* in terms of existence = *pure existence* =
that from which existence emanates on those that have quiddities =
cause

Claim B: Everything that exists other than God = *contingent* in terms of
existence = composite of *quiddity* and *existence* = that whose quiddity
receives existence from God = *effect*

Why every quiddity in itself is contingent? One way to answer this question is by resorting to Avicenna's well-known Doubt Argument. He argues, for instance, in *al-Ishārāt*, *namaṭ* IV.6:

[Text 9]

Reminder. Know that you may understand the meaning of triangle and *doubt* whether or not it can be described by “existence in the real world” (*al-wujūd fī l-a'yān*). After [the triangle] becomes represented (*tamath-thala*) to you as [constituted] of a line and a surface, it does not become represented to you that it exists in the real world.⁵¹

⁵⁰ See Ibn Sīnā, *Al-Ishārāt*, 267–272.

⁵¹ Ibn Sīnā, *Al-Ishārāt*, 266.

Avicenna argues that when we understand a quiddity such as triangle, we *doubt* whether it exists in the real world. Our doubt suggests that *existence* is not a constituent (*muqawwim*) of the quiddity of triangle. The definition of triangle is, for instance, “a plane figure with three straight sides,” and it clearly does not contain *existence* as a constituent. If existence were contained in the quiddity and definition of triangle, then every triangle would have to exist; if they do not exist, they are no longer triangles according to the definition, but this is absurd. Thus, the quiddity and existence of a triangle must be distinct from each other. By the same reasoning, every quiddity in itself must be *contingent* insofar as it is *indifferent* to existence and non-existence; it does not exist unless existence occurs to it from the outside. In addition to the Doubt Argument, Avicenna argues extensively in his theory of universals for the *indifferent* ontological status of quiddities such as horseness, humanity, and animality.⁵²

This is a very brief sketch of Avicenna's Essentialist metaphysics that features the *real* quiddity–existence distinction. Now I turn to as-Suhrawardī's comprehensive critique of Avicenna's quiddity–existence distinction and explain the role that the Flying Man plays in this critique. As-Suhrawardī's first step is to argue that the quiddity–existence distinction is a *mental* rather than a real distinction. In his lengthy ontological discussions of mental/intellectual considerations (*i'tibārāt dhihniyya/aqliyya*),⁵³ as-Suhrawardī argues that both quiddity and existence in Avicenna's distinction are two *mental considerations* that our mind generates through its unique way of considering or understanding things in the real world, and that they are not ontological constituents of real things. Avicenna's Doubt Argument above, for instance, merely shows that quiddity and existence are distinct from each other *in the mind*, but it is insufficient to show that they are also distinct in the real world. As-Suhrawardī points out that “a real distinction (*at-taghāyur al-'aynī*) does not necessarily fol-

52 Key texts include *ash-Shifā'*, *al-Manṭiq*, *al-Madkhal* (*The Healing, Logic, Isagoge*) 1.12 and *ash-Shifā'*, *al-Ilāhiyyāt* 1.5, v. 1, v. 2; see esp. Ibn Sīnā, *Ash-Shifā'*, *al-Manṭiq*, *al-Madkhal*, ed. by al-Ab Qanawātī, Maḥmūd al-Khuḍayrī, and Fu'ād al-Ihwānī (Cairo: al-Maṭba'a al-Amīriyya, 1952), 65, ll. 11–19; cf. *The Healing, Logic: Isagoge*, ed. by Silvia Di Vincenzo (Berlin: De Gruyter, 2021), 142, l. 8–144, l. 14; *Ash-Shifā'*, *al-Ilāhiyyāt*, 196, l. 6–200, l. 12.

53 See as-Suhrawardī, *At-Taḥwīḥāt*, 192–196; *Al-Muṭārahāt*, 340–371, §§ 98–116; *Kitāb al-Muqāwamāt* (*al-'ilm ath-thālith*), in *Œuvres philosophiques et mystiques* (tome 1), ed. by Henry Corbin (Tehran: Institut d'études et des recherches culturelles, 1993), 162–176, §§ 36–45; *Ḥikmat al-Ishrāq*, 64–73, §§ 56–69. For analyses of as-Suhrawardī's discussions on mental considerations, see Jari Kaukua, “*T'ibārī* Concepts in Suhrawardī: The Case of Substance,” *Oriens* 48 (2020): 40–66; *Suhrawardī's Illuminationism: A Philosophical Study* (Leiden: Brill, 2022), chap. 3; Zhang, *Suhrawardī's Illuminationism*, chaps. 3–4.

low from a mental distinction (*at-taghāyur adh-dhihnī*).⁵⁴ He further demonstrates through multiple arguments that if existence were added to quiddity in the real world, absurd infinite regresses would necessarily arise.⁵⁵ Therefore, Avicenna is not entitled to use the quiddity–existence distinction unrestrictedly as a *real* distinction in metaphysical discussions.⁵⁶

If the quiddity–existence distinction is a *mental* rather than a real distinction, it still seems to function in distinguishing God from creation in terms of their *mental* rather than metaphysical structure. That is to say, when our mind understands them, only God appears as pure existence, whereas everything else that exists appears as a composite of quiddity and existence. This is where as-Suhrawardī brings the Flying Man—in the form of the Purified Self—into the picture. Recall that according to [Text 5], every human soul or self is *pure existence*. This is true not only of human souls but also of other superior self-apprehenders in as-Suhrawardī's metaphysics: God, separate intellects, and heavenly souls. As-Suhrawardī's purpose in [Text 5] is to show that, in addition to God, there are many more instances of pure existence; indeed, every self-apprehender (*mudrik li-dh-dhāt*) is pure existence that cannot be divided into quiddity and existence in the mind (nor in the real world). Only those that lack self-awareness, when our mind understands them, appear as composites of quiddities and existence (although, metaphysically speaking, they are still indivisible into quiddities and existence in the real world). This is as-Suhrawardī's second step in undermining Avicenna's quiddity–existence distinction. By resorting to Avicenna's own Flying Man, as-Suhrawardī shows that even as a *mental* rather than a real distinction, Avicenna's quiddity–existence distinction fails to function as intended: it is insufficient to distinguish God from creation; instead, it merely distinguishes self-apprehenders from other things that are not self-aware.

However, if every self-apprehender is pure existence, how do we distinguish between them? Moreover, if we abandon Avicenna's *real* quiddity–existence distinction in metaphysics, how do we explain the metaphysical structure of real things, and how do we interpret divine creation metaphysically? As-Suhrawardī's solution is to introduce the *systematic ambiguity of existence* (*tashkīk al-wujūd*), or *gradation of existence*, in terms of strength and weakness (*shidda*

54 As-Suhrawardī, *At-Talwīḥāt*, 193, l. 2.

55 See as-Suhrawardī, *At-Talwīḥāt*, 193, ll. 9–20, 194, ll. 17–18; *Al-Muṭārahāt*, 358, ll. 9–13, 358, l. 17–359, l. 5, §109; *Al-Muqāwamāt*, 164, ll. 6–13, 165, ll. 3–4, §36; *Hikmat al-Ishrāq*, 64, l. 14–65, l. 16, §§56–58; for a detailed reconstruction of these arguments, see Zhang, *Suhrawardī's Illuminism*, 108–121.

56 See as-Suhrawardī, *At-Talwīḥāt*, 204, l. 14–205, l. 8.

wa-ḍuʿf), or perfection and deficiency (*kamāl wa-naqṣ*).⁵⁷ After [Text 5], as-Suhrawardī writes in *at-Taḥwīḥāt*, Metaphysics v. 15:

[Text 10]

[T10a] The necessary existence (*al-wujūd al-wājibī*) is the *pure existence* (*al-wujūd al-mahd*) that is the *most complete*. My existence is *deficient* (*nāqis*), and it is from Him, just like the light radiating from the light of the sun (*an-nūr ash-shuʿāʾī min an-nūr ash-shamsī*). Since there are differences (*at-tafāwut*), and *perfection and deficiency* (*al-kamāl wa-n-naqṣ*), ... there is no need for any differentiator that is a *differentia* (*mumayyiz faṣlī*).

[T10b] The *contingency* (*imkān*) of this [i.e., my existence] is the *deficiency* (*naqṣ*) of its existence, and His *necessity* (*wujūb*) is the *perfection* (*kamāl*) of His existence that is the most perfect.⁵⁸

Similarly, as-Suhrawardī writes in *at-Taḥwīḥāt*, Metaphysics 1.1:

[Text 11] So [the necessary] is the *pure, sheer existence* (*al-wujūd aṣ-ṣīrf al-baḥt*) ... What is other than Him is either a ray (*lamʿa*) from Him or a ray from another ray; they do not differ except by their *perfection* (*kamāl*). This is because all of Him is existence and all of existence (*kulluhū al-wujūd wa-kull al-wujūd*).⁵⁹

57 Scholars often render *tashkīk al-wujūd* as “modulation of existence”; I prefer to use “systematic ambiguity of existence,” which is a more literal translation. As *tashkīk* literally means “making [somebody] doubt,” “ambiguity” is close to its literal meaning; this ambiguity, moreover, is *systematic* because *tashkīk* means that multiple meanings of a term are unified under one single meaning (e.g., stronger and weaker existence, or whiteness). In as-Suhrawardī’s metaphysical discussions, “systematic ambiguity of existence” usually refers to the *gradation of existence* in terms of strength and weakness. In fact, Avicenna first formulates *tashkīk al-wujūd* and applies it to the solution of theological problems; see Alexander Treiger, “Avicenna’s Notion of Transcendental Modulation of Existence (*taškīk al-wuḡūd*, *analogia entis*) and Its Greek and Arabic Sources,” in *Islamic Philosophy, Science, Culture, and Religion: Studies in Honor of Dimitri Gutas*, ed. by Felicitas Opwis and David Reisman (Leiden: Brill, 2012), 353–363. However, Avicenna explicitly states in *ash-Shifāʾ*, *al-Ilāhiyyāt* v1.3 that “existence inasmuch as it is existence does not differ in strength and weakness (*ash-shidda wa-ḍ-ḍuʿf*), and it does not admit of [being] less [existence] or more deficient (*al-aqall wa-l-aqas*); indeed, it [only] differs in several respects: priority and posteriority (*at-taqaddum wa-t-taʾakhkḥur*), sufficiency and need (*al-istighnāʾ wa-l-ḥāja*), and necessity and contingency (*al-wujūb wa-l-imkān*);” see Ibn Sīnā, *Ash-Shifāʾ*, *al-Ilāhiyyāt*, 276, ll. 13–15; cf. Treiger, “Avicenna’s Transcendental Modulation of Existence,” 357, note 92.

58 As-Suhrawardī, *At-Taḥwīḥāt*, 284, ll. 2–5.

59 As-Suhrawardī, *At-Taḥwīḥāt*, 206, ll. 1–3.

According to [T10a], although every self-apprehender is pure existence, they differ in degrees of *perfection*, and in this respect, they can be compared to stronger and weaker lights. Thus, they are distinguishable from each other simply by their strength and weakness, or perfection and deficiency. God is the most perfect pure existence, whereas a human soul is much weaker pure existence. At [T10b], as-Suhrawardī further interprets Avicenna's necessary–contingent distinction in new, Existential terms: God's *necessity* is the absolute *perfection* of His existence (instead of His naturally being existent), whereas the *contingency* of created things is the *deficiency* of their existence (instead of their being indifferent to existence and non-existence; cf. [Text 8]).

As-Suhrawardī explains in [Text 11] that divine creation is the radiation of God's most perfect existence, initiating the grand hierarchy of existence. If God is the light of the sun, then everything else is either a ray radiating directly from God, or a ray radiating from other stronger rays, which ultimately radiate from God. In as-Suhrawardī's Existentialism, everything that exists is an instance of existence, and they differ only in degrees of perfection. Ibn Kammūna remarks that "the degrees of deficiency (*marātib an-naqṣ*) differ in a manner that there is no way for us to count or calculate."⁶⁰ The hierarchy of existence starts from God, the most perfect self-aware pure existence; below God, there are other instances of self-aware pure existence, including separate intellects, and heavenly and human souls; and below them, there are instances of existence that are not self-aware, and only they appear as composites of quiddities and existence when our mind understands them. As-Suhrawardī's Existential metaphysics studies everything about existence. Thus, Avicenna's Essentialist Claims A and B above must be modified in as-Suhrawardī's Existentialism in the following way.

Claim A*: God = the *necessary* existence = the *most perfect* pure existence = the source of all existence = cause

Claim B₁*: Self-apprehenders other than God (i.e., separate intellects, heavenly and human souls) = *contingent* existence = *deficient* pure existence (all differing in degrees of perfection) = effect

Claim B₂*: Everything that is not self-aware = *contingent* existence = *more deficient* existence (all differing in degrees of perfection) in the real world, and composite of *quiddity* and *existence* in the mind = effect

60 Ibn Kammūna, *Sharḥ at-Talwīḥāt* (vol. 3), 549, l. 20.

5 Conclusion

Avicenna's Flying Man lives up to its fame, considering its very rich epistemological and metaphysical implications. In *ash-Shifāʾ*, *an-Nafs*, Avicenna uses the Flying Man to reveal the *existence* of the human soul or self and then proves its *incorporeality*. At this stage, he does not pay full attention to the phenomenon of primitive self-awareness underlying the Flying Man. In *al-Ishārāt*, he resorts to the Flying Man to show the *constancy* of primitive self-awareness, and then, in *al-Mubāḥathāt* and *at-Taʿlīqāt*, he elaborates on his theory of self-awareness. In the post-Avicennian tradition, as-Suhrawardī adopts Avicenna's Flying Man and creatively develops its *metaphysical* implications to show that every self-apprehender is *pure existence* and thereby undermines Avicenna's quiddity–existence distinction, which is the foundation of Avicenna's Essentialist metaphysics. This move is essential to building as-Suhrawardī's own Existential metaphysics, which later forms the foundation and paves the way for Mullā Ṣadrā's (d. 1636) Existential metaphysics in the 17th century.

In fact, Ṣadrā is well aware of the passage in *at-Talwīḥāt*, Metaphysics v. 15 where as-Suhrawardī presents his ontological reading of the Flying Man. But because Ṣadrā interprets as-Suhrawardī's ontological position to be the “fundamentality of quiddity” (*aṣālat al-māhiyya*) that holds only quiddities are actual and real whereas existence is merely a mental consideration (*iʿtibār*), he suspects that as-Suhrawardī simply contradicts himself in that passage. Ṣadrā writes in *al-Ḥikma al-Mutaʿālīya fī l-Asfār al-ʿAqliyya al-Arbaʿa* (*The Transcendent Philosophy in the Four Intellectual Journeys*):

[Text 12] ... [T]he Divine Master (*ash-shaykh al-ilāhī*; i.e., as-Suhrawardī) at the end of *at-Talwīḥāt* argues that the soul and the separate [intellects] (*al-mufāriqāt*) above it are *sheer that-nesses* (*innīyyāt ṣirfā*) and *pure existences* (*wujūdāt maḥḍa*). Given this, I do not understand how he is still allowed to deny that existence is something actual and real. Is this simply a contradiction in the doctrine?⁶¹

In contrast to the reading of Ṣadrā (and modern scholars who follow Ṣadrā's lead),⁶² my interpretation of as-Suhrawardī's metaphysics is that it is definitively Existentialism. This chapter presents some aspects of my argument for

61 Mullā Ṣadrā, *Al-Ḥikma al-Mutaʿālīya fī l-Asfār al-ʿAqliyya al-Arbaʿa* (vol. 1) (Beirut: Dār Iḥyāʾ at-Turāth al-ʿArabī, 1990), 43, ll. 1–3.

62 See, for instance, Toshihiko Izutsu, *The Concept and Reality of Existence* (Tokyo: The Keio Institute of Cultural and Linguistic Studies, 1971), 99–118.

Suhrawardī's Existentialism, and further studies are needed to reconstruct his Existentialism more systematically and to show the similarities and differences between as-Suhrawardī's and Ṣadrā's Existentialism.

Bibliography

- Adamson, Peter. "The Simplicity of Self-Knowledge after Avicenna." *Arabic Sciences and Philosophy* 28 (2018): 257–277.
- Adamson, Peter and Fedor Benevich. "The Thought Experimental Method: Avicenna's Flying Man Argument." *Journal of the American Philosophical Association* 4, no. 2 (2018): 147–164.
- Alpina, Tommaso. "The Soul of, the Soul in Itself, and the Flying Man Experiment." *Arabic Sciences and Philosophy* 28, no. 2 (2018): 187–224.
- Alwishah, Ahmed. "Ibn Sīnā on Floating Man Arguments." *Journal of Islamic Philosophy* 9 (2013): 32–53.
- Alwishah, Ahmed. "Avicenna on Self-Cognition and Self-Awareness." In *Aristotle and the Arabic Tradition*. Ed. by Ahmed Alwishah and Josh Hayes. Cambridge: Cambridge University Press, 2015, 143–163.
- Bertolacci, Amos. "A Hidden *Hapax Legomenon* in Avicenna's Metaphysics: Considerations on the Use of *Annīyya* and *Ayyīyya* in the *Ilāhiyyāt* of the *Kitāb al-Šifā'*." In *The Letter before the Spirit: The Importance of Text Editions for the Study of the Reception of Aristotle*. Ed. by Aafke M.I. van Oppenraay. Leiden: Brill, 2012, 289–309.
- Black, Deborah L. "Avicenna on Self-Awareness and Knowing that One Knows." In *The Unity of Science in the Arabic Tradition: Science, Logic, Epistemology and their Interactions*. Ed. by Shahid Rahman, Tony Street, and Hassan Tahiri. Dordrecht: Springer, 2008, 63–87.
- Druart, Thérèse-Anne. "The Soul and Body Problem: Avicenna and Descartes." In *Arabic Philosophy and the West: Continuity and Interaction*. Ed. by Thérèse-Anne Druart. Washington: Center for Contemporary Arab Studies, 1988, 27–49.
- Eichner, Heidrun. "*endoxa* and the *Theology of Aristotle* in Avicenna's 'Flying Man': Contexts for Similarities with Sceptical and Cartesian Arguments in Avicenna." In *Sceptical Paths: Enquiry and Doubt from Antiquity to the Present*. Ed. by Giuseppe Veltri et al. Berlin: De Gruyter, 2019, 67–82.
- Gutas, Dimitri. "The Empiricism of Avicenna." *Oriens* 40 (2012): 391–436.
- Gutas, Dimitri. *Avicenna and the Aristotelian Tradition: Introduction to Reading Avicenna's Philosophical Works*. Leiden: Brill, 2014.
- Hasse, Dag Nikolaus. *Avicenna's De Anima in the Latin West: The Formation of a Peripatetic Philosophy of the Soul, 1160–1300*. London: The Warburg Institute, 2000.
- Ibn Kammūna. *Sharḥ at-Talwīḥāt al-Lawḥiyya wa-l-'Arshīyya* (3 vols.). Ed. by Najafqulī Ḥabībī. Tehran: Mīrāth-i Maktūb, 2012.

- Ibn Sīnā. *Aḥwāl an-Nafs*. Ed. by Aḥmad Fu'ād al-Ahwānī. Cairo: Dār Iḥyā' al-Kutub al-'Arabiyya, 1952.
- Ibn Sīnā. *Ash-Shifā', al-Manṭiq, al-Madkhal*. Ed. by al-Ab Qanawātī, Maḥmūd al-Khuḍayrī, and Fu'ād al-Ihwānī. Cairo: al-Maṭba'a al-Amīriyya, 1952.
- Ibn Sīnā. *Avicenna's De Anima (Arabic Text): Being the Psychological Part of Kitāb al-Shifā'*. Ed. by F. Rahman. London: Oxford University Press, 1959.
- Ibn Sīnā. *Ash-Shifā', al-Ilāhiyyāt*. Ed. by al-Ab Qanawātī and Sa'īd Zā'id. Cairo: al-Hay'a al-'Āmma li-Shu'ūn al-Maṭābi' al-Amīriyya, 1960.
- Ibn Sīnā. *Al-Mubāḥathāt*. Ed. by Muḥsin Bīdārfar. Qom: Intishārāt-i Bīdār, 1413/1992–1993.
- Ibn Sīnā. *Al-Ishārāt wa-t-Tanbīhāt*. Ed. by Muḥtabā az-Zārī'ī. Qom: Būstān-i Kitāb, 1434/2012–2013.
- Ibn Sīnā. *At-Ta'liqāt*. Ed. by Seyyed Hossein Mousavian. Tehran: Iranian Institute of Philosophy, 2013.
- Ibn Sīnā. *The Healing, Logic: Isagoge*. Ed. by Silvia Di Vincenzo. Berlin: De Gruyter, 2021.
- Izutsu, Toshihiko. *The Concept and Reality of Existence*. Tokyo: The Keio Institute of Cultural and Linguistic Studies, 1971.
- Kaukua, Jari. "I in the Light of God: Selfhood and Self-Awareness in Suhrawardī's *Ḥikmat al-ishrāq*." In *In the Age of Averroes: Arabic Philosophy in the Sixth/Twelfth Century*. Ed. by Peter Adamson. London: The Warburg Institute, 2011, 141–157.
- Kaukua, Jari. "Suhrawardī's Knowledge as Presence in Context." *Studia Orientalia* 114 (2013): 309–324.
- Kaukua, Jari. "A Closed Book: Opacity of the Human Self in Mullā Ṣadrā." *Vivarium* 52 (2014): 241–260.
- Kaukua, Jari. *Self-Awareness in Islamic Philosophy: Avicenna and Beyond*. Cambridge: Cambridge University Press, 2015.
- Kaukua, Jari. "The Flying and the Masked Man, One More Time: Comments on Peter Adamson and Fedor Benevich, 'The Thought Experimental Method: Avicenna's Flying Man Argument'." *Journal of the American Philosophical Association* 6, no. 3 (2020): 285–296.
- Kaukua, Jari. "T'ibārī Concepts in Suhrawardī: The Case of Substance." *Oriens* 48 (2020): 40–66.
- Kaukua, Jari. *Suhrawardī's Illuminism: A Philosophical Study*. Leiden: Brill, 2022.
- Marmura, Michael E. "Avicenna's 'Flying Man' in Context." *The Monist* 69, no. 3 (1986): 383–395.
- Marmura, Michael E. "Fakhr al-Dīn al-Rāzī's Critique of an Avicennan *Tanbīh*." In *Historia Philosophiae Medii Aevi*. Ed. by Herausgegeben von Burkhard Mojsisch and Olaf Pluta. Amsterdam: B.R. Grüner, 1991, 627–641.
- Michot, J.R. "La Réponse d'Avicenne à Bahmanyār et al-Kirmānī: Présentation, traduc-

- tion critique et lexique arabe-français de la *Mubāḥatha III*." *Le Muséon* 110, no. 1–2 (1997): 143–221.
- Muehlethaler, Lukas. "Ibn Kammūna (d. 683/1284) on the Argument of the Flying Man in Avicenna's *Ishārāt* and al-Suhrawardī's *Talwīḥāt*." In *Avicenna and His Legacy: A Golden Age of Science and Philosophy*. Ed. by Y. Tzvi Langermann. Turnhout: Brepols Publishers, 2009, 179–203.
- Mullā Ṣadrā. *Al-Hikma al-Muta'aliya fi l-Asfār al-'Aqliyya al-Arba'a* (9 vols.). Beirut: Dār Iḥyā' at-Turāth al-'Arabī, 1990.
- Rāzī, Fakhr ad-Dīn ar-. *Sharḥ al-Ishārāt wa-t-Tanbīhāt* (2 vols.). Ed. by 'Alī Riḍā Najafzādah. Tehran: Anjuman-i Āthār va Mafākhir-i Farhangī, 2005.
- Reisman, David C. *The Making of the Avicennan Tradition: The Transmission, Contents, and Structure of Ibn Sīnā's al-Mubāḥatāt* (The Discussions). Leiden: Brill, 2002.
- Sebti, Meryem. "Avicenna's 'Flying Man' Argument as a Proof of the Immateriality of the Soul." In *De l'Antiquité tardive au Moyen Âge: Études de logique aristotélicienne et de philosophie grecque, syriaque, arabe et latine offertes à Henri Hugonnard-Roche*. Ed. by Elisa Coda and Cecilia Martini Bonadeo. Paris: Vrin, 2014, 531–543.
- Sorabji, Richard. *Self: Ancient and Modern Insights about Individuality, Life, and Death*. Chicago: University of Chicago Press, 2006.
- Suhrawardī, Shihāb ad-Dīn as-. *Kitāb al-Muqāwamāt (al-'ilm ath-thālith)*. In *Œuvres philosophiques et mystiques (tome 1)*. Ed. by Henry Corbin. Tehran: Institut d'études et des recherches culturelles, 1993, 123–192.
- Suhrawardī, Shihāb ad-Dīn as-. *Kitāb al-Mashārī' wa-l-Muṭarāḥāt (al-'ilm ath-thālith)*. In *Œuvres philosophiques et mystiques (tome 1)*. Ed. by Henry Corbin. Tehran: Institut d'études et des recherches culturelles, 1993, 193–506.
- Suhrawardī, Shihāb ad-Dīn as-. *Ḥikmat al-Ishrāq*. In *Œuvres philosophiques et mystiques (tome 11)*. Ed. by Henry Corbin. Tehran: Institut d'études et des recherches culturelles, 1993, 1–260.
- Suhrawardī, Shihāb ad-Dīn as-. *At-Talwīḥāt al-Lawḥiyya wa-l-'Arshiyya*. Ed. by Najafqulī Ḥabībī. Tehran: Iranian Institute of Philosophy, 2009.
- Toivanen, Juhana. "The Fate of the Flying Man: Medieval Reception of Avicenna's Thought Experiment." In *Oxford Studies in Medieval Philosophy, Volume 3*. Ed. by Robert Pasnau. Oxford: Oxford University Press, 2015, 64–98.
- Treiger, Alexander. "Avicenna's Notion of Transcendental Modulation of Existence (*taṣkīk al-wuḡūd, analogia entis*) and Its Greek and Arabic Sources." In *Islamic Philosophy, Science, Culture, and Religion: Studies in Honor of Dimitri Gutas*. Ed. by Felicitas Opwis and David Reisman. Leiden: Brill, 2012, 327–363.
- Ṭūsī, Naṣīr ad-Dīn aṭ-. *Sharḥ al-Ishārāt wa-t-Tanbīhāt* (2 vols.). Ed. by Ḥasanzādah al-Āmulī. Qom: Būstān-i Kitāb, 2007.
- Zhang, Tianyi. *A Philosophical Enquiry into the Nature of Suhrawardī's Illuminism: Light in the Cave*. Leiden: Brill, 2023.

Al-Kātibī's Deduction of the Predicables

Paul Thom

1 Introduction

Porphyry's *Eisagoge* distinguishes five types of concept: genera, species, differentiae, propria and accidents. Scholars have wondered whether this list rests on a rational principle, so that it had to have exactly five members, and those members had to be just as Porphyry describes them. Among the attempts to articulate such a rational basis for the list, the account given by Najm ad-Dīn al-Kātibī is specially interesting.

2 The Porphyrian Background

In §1 of Porphyry's *Eisagoge* we find the idea that genera are distinguished from other kinds of predicable by their characteristic mode of predication. Unlike individuals, they are predicated of several things. Unlike species, they are predicated of several things differing in species, whereas species are predicated of things differing only in number. Unlike propria, genera are predicated of several species and of the individuals under them, whereas propria are predicated only of a single species. And unlike differentiae and accidents, genera are predicated in answer to "What is it?" rather than to "What sort of thing is it?"¹

At play here are four distinctions among predications, according to the number of subjects they have, whether their subjects differ in species or only in number, whether their subjects belong to several distinct species or only to one, and whether the predication answers the question "What is it?" or the question "What sort of thing is it?". Porphyry combines these distinctions, characterizing a genus as what is predicated of many things differing in species in answer to "What is it?".

His characterizations of the other predicables also invoke these distinctions. He says a species (sc. a species which is not a genus)² is what is predicated in

1 Porphyry, *Introduction*, Translated with an Introduction and Commentary by Jonathan Barnes (Oxford: Clarendon Press, 2003), §1, 2.23.

2 Porphyry, *Introduction*, §8, 15.11.

answer to “What is it?” of many things differing only in number.³ A proprium (sc. a property that belongs only to its subject) is what is predicated of a single species but not in answer to “What is it?”⁴ He characterizes differentiae and common accidents as answering the question “What sort of thing is it?”. Relying solely on these four distinctions we can formulate distinctive characterizations of genus, lowest species, and proprium; we can also give a description that is common to differentia and accident, although we do not have a way of distinguishing between these two types.

3 Kātibī's Division

The task of generating the five predicables by a process of logical division was taken up by several Arabic logicians. The present paper will focus on Najm ad-Dīn al-Kātibī's division. Al-Kātibī's division comprises three levels.

3.1 *First Level*

To begin with, concepts are divided into those that preclude sharing and those that allow sharing:

Text 1. Every concept is a real particular if the very conception of its meaning precludes sharing in the meaning, and universal if conception of its meaning does not preclude such sharing. The expression signifying one or the other kind of meaning is said to be particular or universal per accidens.⁵

3.1.1 Universals

By a real particular, al-Kātibī means an individual, identified as belonging to a kind, as Zayd belongs to the kind *human* (“every individual is subsumed by its quiddity stripped of whatever individuates it.”) Contrasted with real particulars are relative particulars; these are universals, conceived in comparison with more general universals, as *human* is particular in comparison with *animal*.⁶

3 Porphyry, *Introduction*, §1, 2.24.

4 Porphyry, *Introduction*, §9, 16.17. Properties cannot be named in answer to “What is it?”, given that “if properties are removed they do not co-remove” their subjects.

5 Kātibī, *Najm al-Dīn al-Kātibī's al-Risālah al-Shamsiyyah*, An Edition and Translation with Commentary by Tony Street (New York: New York University Press, 2024), §15. All passages quoted from Kātibī's *ash-Shamsiyya* are taken from this translation.

6 Al-Kātibī, *ash-Shamsiyya*, §28: “Just as “particular” is said of the meaning mentioned above

The distinction between real particulars and universals rests on a notion of sharing which will recur as Kātibī continues his account. Behind the distinction lies Avicenna's characterization of the particular as that, "the very Concept of the meaning of which prevents the occurrence of sharing in it." The idea of an expression true of only one particular but not precluding predication of many, is found in *al-Ishārāt*⁷ and in the *Madkhal*;⁸ and also in other texts from the *Metaphysics* of *The Cure* and the *Burhān* which Riccardo Strobino brings together.⁹ Avicenna's way of conceiving this distinction is itself a philosophical elaboration of a simple distinction in Porphyry. In place of Porphyry's purely factual distinction between what is or is not predicated of many things, Avicenna asks us to consider what is allowed or prohibited to be predicated of many subjects, by reason of its very concept.

Kātibī's presentation of the division highlights the distinction between concepts and the expressions that signify them. Conception is "the occurrence of the form of something in the intellect";¹⁰ expressions signify these mental concepts. Because the expression has only an indirect relation to what is properly said to be particular or universal, via the concept which it signifies, Kātibī insists that particularity and universality can be predicated of expressions only per accidens, whereas Avicenna, in *al-Ishārāt*, had presented the distinction

(what is termed the real particular), it is likewise said of everything more specific under the more general. This is called the relative particular, and it is more general than the first, because every real particular is a relative particular, without the converse being the case. As for the first part of the claim, it is because every individual is subsumed by its quiddity stripped of whatever individuates it; as for the second, it is because the relative particular can be a universal, whereas the real particular cannot."

7 Avicenna, *al-Ishārāt*, § 1.9: "An Expression may be particular or universal. The Particular is that the very Concept of the meaning of which prevents the occurrence of sharing in it, like the Concept of Zayd. If the Particular is like that, then the Universal must be what is opposed to it, namely, that the very Concept of the meaning of which does not prevent the occurrence of sharing in it. If it is impossible (*imtan'a*) it is impossible for a cause extrinsic to its concept (*mafhumīhi*). Some [Universals] are shared actually, like 'Man', and some are shared potentially and possibly, like 'Dodecahedron'. And in some sharing occurs neither actually nor potentially and by possibility, due to a cause other than the concept itself, like 'Sun' for someone who does not allow the possibility of another sun." All passages quoted from Avicenna's *al-Ishārāt* are taken from Tony Street, *Avicenna's Logic Explained: A translation of Naṣīr ad-Dīn aṭ-Ṭūsī's Ḥall Muškilāt al-Iṣārāt* (forthcoming).

8 Avicenna, *Madkhal*, 1.5.2.1 in Silvia Di Vincenzo, *Avicenna, The Healing, Logic: Isagoge, A New Edition, English Translation and Commentary of the Kitāb al-Madḥal of Avicenna's Kitāb al-Šifā'* (Boston: De Gruyter, 2021), 55.

9 Riccardo Strobino, *Avicenna's Theory of Science: Logic, Metaphysics, Epistemology* (Oakland: University of California Press, 2021), 184–185 n. 5.

10 Al-Kātibī, *Shamsīyyah*, § 1.

between the particular and the universal as a division of expressions. At the same time, however, Avicenna makes it clear that the distinction between two types of expression holds by virtue of a distinction between two types of concept. So, he is aware that the distinction among expressions holds per accidents, even though he doesn't use that term explicitly. In making this explicit, al-Kātibī is adding a small but necessary refinement to Avicenna's account.

3.2 *Second Level*

The second level of al-Kātibī's division comprises a single tripartite division of universal concepts. The real particulars are not further divided. Among concepts that allow for sharing among several particulars, al-Kātibī distinguishes three groups on the basis of the nature of that sharing:

Text 2. The universal is either the whole quiddity of the particulars under it, or intrinsic to the quiddity, or extrinsic from it.¹¹

This sentence comes straight after the introduction of the expression "real particular"; so we can assume that the particulars referred to here are real particulars, i.e., individuals. What is shared may be of three types. First, what is shared may be the whole quiddity of the individuals under a given sharable concept, as when the concept *human* applies to individual humans in such a way that it encapsulates the whole of their shared quiddity, rather than a (mere) part of it. The phrase "the whole quiddity" carries the implication "not a (proper) part of the quiddity"; thus, what is the whole quiddity of certain particulars cannot also be part of their quiddity.

The three members of Kātibī's division are mutually incompatible. The first type of sharing concerns a concept whose real particulars share a quiddity that the concept is not a part of. The second deals with the contrasting case where the shared concept is intrinsic to the quiddity of the sharing individuals, forming part of it,¹² as with the concepts *animal* and *rational*, which are proper parts of the shared quiddity of humans. In the third type of case, the shared concept is extrinsic to the quiddity of its individuals, not a part of it and not the whole quiddity, as when *capable of writing* or *white* applies to individual humans as something that is extrinsic to their quiddity, being neither a part nor the whole

11 Al-Kātibī, *ash-Shamsīyya*, § 16.1.

12 The interchangeability of "intrinsic" and "part of" is clear from Avicenna, *al-Ishārāt* 1.10: "... by 'constitutive' ... [I mean] the predicate which the subject needs for the realisation of its quiddity, and which is intrinsic to its quiddity, a part of it. This is like being a figure for a triangle, or corporeality for man."

of it. Kātibī's tripartite division of universal concepts is based on the different ways quiddities and their parts enter into what is shared by the real particulars falling under a given concept.

The threefold distinction is similar to Avicenna's distinction between the signification of meaning by correspondence, by containment, or by following and implication.¹³ Taking this division of the ways an expression can signify its meaning, al-Kātibī draws an analogous division of the ways a universal concept can be related to its particulars.

Al-Kātibī's division has an ancestry in Porphyry. In § 3 of the *Eisagoge* Porphyry tells us that differentiae are distinguished from propria by the fact that they "contribute to the being" of their subjects and are "a part of what it is to be" the subject; and § 7 speaks of those differentiae that enter into the definition of a species as "completive" of its "substance."¹⁴ These remarks assume a notion of a quiddity ("what it is to be" something), and assumes that quiddities may have parts. It is not a long step from these givens to suppose a threefold distinction between those predicates that express a whole quiddity, those that express only a part of a quiddity, and those that express neither.

3.2.1 Species

The first of the three groups produced by al-Kātibī's division are the *infima species*. Al-Kātibī's characterization of lowest species, as forming the whole quiddity of their particulars, is an indirect one. The indirect path by which one can arrive at his characterization is as follows. To be an *infima species* is to be a species that has no species. To have species is to be a quiddity that has dividing differentiae which, when joined with it, produce those species. When a species is produced in this way, both the quiddity from which it was formed, and the dividing differentia, are its parts—its only proximate parts. ("Part" in this context means "proper part" and is taken in an intensional sense.)

13 Avicenna, *al-Ishārāt*, 1.6: "The Expression signifies Meaning: Either by way of Correspondence (*muṭābaqa*), in that the Expression is Posited for that Meaning, one to one (*bī'izā'ihī*), like 'triangle' signifies a form enclosed by three sides; Or by way of Containment (*taḍammun*), in that the Meaning is a part of the Meaning corresponding to the Expression, like 'triangle' signifies 'form'—it doesn't signify form in being a name for form, but rather it is a name for a Meaning part of which is 'form'; Or by way of Following (*istibā'*) and Implication (*iltizām*), in that the Expression signifies [a Meaning] by Correspondence, and there follows on that Meaning another as an extrinsic companion, not as part but as a persistent associate to it (*muṣāhib mulāzim lahu*)—this is like the expression 'roof' signifying 'wall', and 'man' signifying 'receptive of the art of writing'."

14 Porphyry, *Introduction*, § 3, 12.1, § 7, 14.20.

A species higher than the lowest can be a part of the quiddity of its particulars, because the quiddity of each one of those particulars must have an additional part, namely a dividing differentia. For example, the intermediate species *animal* may have horses, vultures and humans among its particulars, but *animal* is not the whole quiddity of any of these particulars; it must be supplemented by the differentiae that distinguish those quiddities. By contrast, a lowest species, having no dividing differentia, must form the whole quiddity of its individuals. Kātibī's characterization, though indirect, is accurate.

The notion *species* is analyzed thus: a species is a concept φ that is a quiddity of all of its real particulars, and that is not a part of any quiddity χ . A formal representation can be given as follows:

$$SPE\varphi \text{ iff } \forall x[\varphi x \supset \varphi Qx] \wedge \neg \exists \chi[\varphi P\chi]$$

where "SPE" means "is a species," "Q" means "is a quiddity of" (sc. of a particular), and "P" means "is a part of" (sc. of a quiddity).

To identify *species* with lowest species (the 'real species') is to relate a species to the real particulars whose quiddity it is, rather than relating it to its genus. Avicenna recognized these two ways of understanding *species*, and al-Kātibī takes up this distinction, differentiating between real and relative species. He gives characterizations of both senses;¹⁵ but his division of the five predicables makes use only of "species" in the sense of real species. We will see that al-Kātibī's principal characterizations of all the predicables can be seen as relative to real particulars, rather than as construing one predicable in relation to another.

Avicenna characterized lowest species in Porphyrian style, as universals that belong in answer to "What is it?" to several things differing in number, not in

15 Avicenna, *al-Ishārāt*, 2.1.1–2.1.2: "either the realities under it differ not just by number, or they differ only by number. ... the second is called Species. It is also their custom to call everything of differing Realities (*min mukhtalifāti l-ḥaqā'iq*) below the first division a Species for it in relation to it ... except that the name 'Species', on Verification, signifies in the two places two differing meanings." *Al-Ishārāt*, 2.6: "Species is described in one of two senses. [One is as] a universal predicated of things only differing in number in response to what-is-it. And in a second sense it is described as a universal of which—along with other things—genus is predicated in a primary and essential way." Al-Kātibī, *ash-Shamsiyya*, § 29: "Just as 'species' is said of what we mentioned above (what is termed the real species), it may likewise be said of every quiddity which, along with other quiddities, has a genus said of it as a primary response to the question 'what is it?' This is called relative species."

quiddity. A species gives the quiddity of any of its particulars, x , and no two of those particulars (x and y) instantiate incompatible quiddities (χ and ψ):¹⁶

$$SPE\phi \text{ iff } \forall x[\phi x \supset \phi Qx] \wedge \neg \exists x, y, \chi, \psi[\phi x \wedge \phi y \wedge \chi Qx \wedge \psi Qy \wedge \chi \Downarrow \psi]$$

where “ $\Downarrow$ ” signifies incompatibility. The notion of a part of a quiddity, which was central to al-Kātibī’s analysis, is absent here. In its absence, Avicenna’s analysis relies on a notion of differing only in number. Al-Kātibī opposes lowest species to quiddities that are part of a quiddity, i.e., to genera. Avicenna opposes species to quiddities whose particulars differ in quiddity. The two approaches yield the same results, because the particulars under a lowest species cannot differ in quiddity, because there are no quidditative differences below a lowest species.

3.3 *Third Level*

At the third level of his division, al-Kātibī subdivides each of the three varieties of concept identified at the second level. The first variety, where the sharable universal encapsulates the whole quiddity of its particulars, is said to occur in answer to the question “What is it?” in one of two ways—either solely in respect of specificity (as *sun* actually applies to a single particular but possibly applies to many), or in respect of both specificity and sharing (as *human* actually applies to many particulars).¹⁷ Al-Kātibī here draws on Avicenna’s idea that specificity (or particularity) and sharing are distinct aspects of signification which may be combined or separated in different ways.¹⁸ This subdivision

16 Avicenna, *al-Ishārāt*, 2.1.1: “Every universal predicate is said of what is under it in answer to what-is-it. [If] ... the realities under it differ ... only by number ... [that] ... is called Species.”

17 Al-Kātibī, *ash-Shamsīyya*, §16.2: “The first division—that is—the whole quiddity, is the real species, whether it has numerous individuals under it (and this universal is what is said in answer to the question “what is it?” in respect of both sharing and specificity, like man), or does not have numerous individuals under it (and this universal is what is said in answer to the question “what is it?” in respect of pure specificity, like sun). §24: ... it may be that the existent under it is only one ... but it is possible for there to be another, like sun.”

18 Avicenna, *al-Ishārāt*, 1.17.1–2: “... the kinds of signifier of what it is ... are three. One of them is absolute particularity (*al-khuṣūṣīyya al-muṭlaqa*), like the Definition’s signifying the quiddity of the name, like the signification by ‘rational animal’ of man.” *Al-Ishārāt*, 1.17.3: “The second is by absolute sharing, like what must be said when asked about a group of various things, in which there are for example a horse, a bull, a man; what are they? Nothing is necessary or fitting other than ‘animal.’ 1.17.11: as for the third, it is what is by both sharing and particularity (*khuṣūṣīyya*), as when a group is asked about—being Zayd and ‘Amr and Khaled—what are they? That which is fit for response according to the condition mentioned is they are people.”

of the notion *species* is one of several distinctions in al-Kātibī that goes beyond what is required for the generation of the five predicables. For the purpose of generating the five, he has no need of this subdivision, because his undivided notion *species* is already one of the predicables.

3.4 Genus

The second variety (where the sharable concept is intrinsic to the quiddity of its particulars, but does not form the whole quiddity) covers *genus* and *differentia*. First *genus*:

Text 3. If it is the second division—that is, something intrinsic to the quiddity—if it is the whole of the part shared between the quiddity and another species, then this ... is called genus.¹⁹

As with his characterization of *species*, al-Kātibī postulates a set of particulars having a shared quiddity. But in the case of *genus* he postulates two incompatible quiddities. The phrase “the whole of the part shared between the quiddity and another species” refers to a situation in which a higher shared quiddity is part of each of a plurality of two divergent lower quiddities. Such a universal is a genus. For example, let there be a group of particulars sharing in the quiddity *animal*, where *animal* is a part of both the lower quiddities *human* and *horse*. Al-Kātibī's description fits this situation: *animal* is a universal said of individual humans and horses, revealing the quiddity they all share. This is a second way in which a universal may be shared among a group of individuals, distinct from the sharing of a lowest species.

His analysis rests on notions of quiddity, part and incompatibility: a genus, ϕ , is a quiddity of all its particulars, and is a part of two incompatible quiddities, χ and ψ :

$$\text{GEN}\phi \text{ iff } \forall x[\phi x \supset \phi Qx] \wedge \exists \chi, \psi[\phi P\chi \wedge \phi P\psi \wedge \chi \Downarrow \psi]$$

where “GEN” means “is a genus” and “ $\Downarrow$ ” signifies incompatibility between concepts. Compared with his analysis of *species*, al-Kātibī's analysis of *genus* draws on a wider group of notions: here he appeals to the notion of a pair of incompatible quiddities with a shared part. According to al-Kātibī's account, every quiddity is either a species or a genus, and no quiddity is both a species and a genus. This description of genera covers all genera from the lowest to the highest. It does not cover genera with just one species, if there are any such.

19 Al-Kātibī, *ash-Shamsiyya*, § 17.

Text 3 goes on to give two supplementary characterizations of the notion of genus. These seem to be offered by way of connecting al-Kātibī's account with the tradition of writing on the subject; they do not form part of his division of the predicables. The first of these describes the genus as "what is said in answer to the question 'what is it?' in respect of pure sharing." By this description al-Kātibī locates genus within Avicenna's threefold distinction between signification by pure specificity, by specificity with sharing, and by pure sharing. (See footnote 18.) The first two places in that distinction are occupied by different kinds of species, the third by genus. I take it that the idea of specificity is that of subordination to a higher essential universal, whereas the idea of sharing is that of superordination to lower universals or individuals.

Al-Kātibī's second supplementary description of genus is as "a universal said of things which differ in realities in answer to the question 'what is it?'. This appears to be equivalent to Avicenna's description of a genus as a universal answering "What is it?", such that the realities under it differ not just by number.²⁰

4 Proximate and Remote Genus

Kātibī gives an analysis of the notions of proximate and remote genus which is like his analysis of real species in its ingenious indirectness:

Text 4. The genus is proximate if the answer about the quiddity and about something that shares with the quiddity in the putatively proximate genus is the same as the answer about the quiddity and about whatever else shares with it in that genus, like animal in relation to man. The genus is remote if the answer about the quiddity and about something that shares with it in the putatively remote genus is not the same as the answer about the quiddity and something else under the genus.²¹

So, we have a genus embracing two quiddities. Al-Kātibī looks for an indeterminate factor in the definition of *genus*, a factor whose further determination will reveal what distinguishes a proximate genus from a remote one. He finds it in

20 Avicenna, *al-Ishārāt*, 2.1.1: "[If] ... the realities under it differ not just by number ... [that] is called a Genus for what is below it." *Al-Ishārāt* 2.6: "... genus is described as a universal predicated of things differing in realities in response to what-is-it."

21 Kātibī, *Shamsīyyah*, §18.1.

the *other* quiddities falling under the genus. He asks us to consider the answers to the question "What is it?", in respect of the given species and in respect of any arbitrarily chosen other species of the genus. Several answers can be given in each case, because there can be several genera at different levels of generality. Al-Kātibī's truth-condition for a given genus to be a proximate genus of a designated quiddity is this: the set of answers to "What is it?" in respect of the designated species is the same as that in respect of all other species of the stated genus, i.e., all species of the stated genus have the same set of genera.

For example, *animal* is a genus of *human*, and every genus of *human* is a genus of any arbitrarily selected species of animal, such as *horse*. Accordingly, being an animal is the proximate genus of being human. Contrast this situation with the relation between *body* and *human*. *Body* is a genus of *human*, but not every genus of *human* is a genus of an arbitrarily selected species of *body*. For instance, *animal* is a genus of *human* and is not a genus of *stone*, even though both *human* and *stone* are species of *body*. Accordingly, *body* is not the proximate genus of *human*. In fact, the relation between *human* and *body* is a remote one mediated by the intermediate genus *animal*.

Al-Kātibī's account of proximate and remote genus relies on a notion of genus that is relative to species. The account, while conceptually of a piece with his argument that the five predicables can be generated by a process of logical division, is not an indispensable part of that argument, since the deduction of the predicables is satisfactorily concluded once each of the five is produced in its generic form without considering subdivisions such as the distinction between proximate and remote.

4.1 *Differentia*

A second type of sharing occurs when the sharable concept that is intrinsic to the quiddity of its particulars is not the whole of the part shared between the quiddity and another species but only "part of the whole that is shared and coextensive with it." This is the *differentia*:

Text 5. If it is not the whole part that is shared between the quiddity and another species, then inevitably either it is not shared, or it is a part of the whole that is shared and coextensive with it. Otherwise, it would be shared between the quiddity and another species. Yet it cannot be the whole that is shared in relation to that species, because the hypothesis is to the contrary. Rather it is part of what is shared. This does not regress ad infinitum, but rather terminates in what is coextensive with what is shared, so it is the *differentia* of a genus. No matter how it distin-

guishes the quiddity from what shares with it—whether in a genus or in existence—it is a differentia.²²

I take the phrase “a part of the whole” to carry the implication “a part *which is not a whole quiddity*.” The phrase refers to a situation in which a non-quiddity (a differentia) is part of the quiddity of its particulars. Thus, the text contains the idea of a differentia as a non-quiddity part of the quiddity of its particulars. The text also contains several other ideas. It relates the notion of differentia to a series that terminates in coextension, and to a notion of distinguishing a quiddity either from other things in the same genus or from everything else in existence. We will discuss these other things shortly.

For the present, let us consider the idea of a differentia, in a sense that encompasses higher and lower differentiae, as a concept, ϕ , all of whose real particulars share a quiddity, χ , which has the concept as a part (and therefore is other than the concept):

$$DIF\phi \text{ iff } \exists\chi\forall x[\phi x \supset (\chi Qx\phi \wedge P\chi)]$$

For example, the differentia *rational* is not a quiddity of all rational beings. But there is a concept such that all rational beings have it as their quiddity, namely *human*; and *rational* is part of *human*. Again, *sensate* is not a quiddity of all sensate beings. But there is a concept such that all sensate beings have it as their quiddity, namely *animal*; and *sensate* is part of *animal*. Al-Kātibī's characterization of *differentia* does not specify whether the particulars under a differentia belong to several distinct quiddities. Our two examples show that this characterization belongs equally to higher differentiae like *sensate*, where the particulars differ in quiddity, and to lowest differentiae like *rational*, where the particulars do not differ in quiddity.

Because this characterization applies equally to higher and lower differentiae, it does not entail that all differentiae are coextensive with their subjects: higher differentiae like *sensate* in relation to *human* are not coextensive with their subjects.

22 Kātibī, *Shamsīyah*, §19.

5 The Final Differentia

Al-Kātibī maintains that the differentia is coextensive with the quiddity which it shares with other species from which it distinguishes that quiddity.²³ (This claim of coextensiveness is noticeably absent from Avicenna's account of differentia in *al-Ishārāt wa-t-Tanbīhāt*.²⁴) The claim is verified by the familiar example of *rational* and *human*. Text 5 refers to a series that terminates in a differentia that is part of a shared whole and is coextensive with it. This whole must be the real species which is shared among its real particulars. If so, it seems that the differentia Kātibī describes here is the final differentia which forms a non-quiddity part of the real species.

I suggest that al-Kātibī's doctrine of coextensiveness and a terminating series be understood as follows. The primary idea is that of a series of differentiae terminating in a final differentia which qualifies the real species. This differentia is coextensive with the real species in the strong sense that they are mutually inseparable, not just factually coextensive. The fact that this differentia and the real species are mutually inseparable implies that the differentia can function to distinguish the real species from everything else in existence. The reference to a second quiddity should be understood in this context. Three points in this reading require justification.

First, the final differentia is mutually inseparable from the quiddity it qualifies, as *rational* is mutually inseparable from *human*. This differentia distinguishes humans from other animals and from inanimate bodies. The conjunction of the final differentia with the real species' proximate genus must be coextensive with the species (since it is the definition of the species). If the differentia is narrower than the species (e.g., if *actually reasoning* is taken as the differentia of *human*), then it will make the definition of the species too narrow (since humans are sometimes not actually reasoning). And if the differentia is broader than the species (e.g., if *mortal* is taken as the final differentia of *human*) then it will not distinguish the designated species from other species of

23 Al-Kātibī, *ash-Shamsīyya*, § 26: "Two universals are coextensive if each one is true of whatever the other is true of, like man and rational."

24 Avicenna, *al-Ishārāt* 2.3.2: "As for the essential which is not fit (*laysa yaşluḥu*) to be said of the many (whose universal it is in relation to them), said in answer to what-is-it, there is no doubt that it is fit to distinguish (*li-t-tamyiz*) the essential from what shares with it in existence, or in a given genus. Therefore it is fit to be said in answer to which-thing-is-it (*ayyu shay'in huwa*). For one only seeks with which-thing the absolute distinction from those things sharing in being the thing (*aş-shay'īyya*) and what is apart from them. This is called the differentia." *Al-Ishārāt*, 2.6: "a universal predicated of the thing in response to which-thing-is-it in [terms of] its substance (*fī jawharihi*)."

the genus (since it is not true that non-human species of animal are immortal). So in this case the differentia and the species are mutually inseparable.

Second, the mutual inseparability of a differentia ϕ and a given quiddity χ implies that ϕ distinguishes χ from everything else. (Al-Kātibī, following Avicenna in *al-Ishārāt*,²⁵ allows for the possibility that a differentia might distinguish a designated species from everything else in its genus or from everything else in existence.) The mutual inseparability of differentia and quiddity implies that the differentia distinguishes the quiddity of which it is a part from everything that is incompatible with that quiddity:

$$\text{If } \phi \Leftrightarrow \chi \text{ then } \forall \psi [\chi \Downarrow \psi \Downarrow \phi \psi].$$

The implication holds by virtue of the general principle that if two notions are mutually inseparable then anything incompatible with one of them is incompatible with the other. Third, the above analysis implies consideration of a second quiddity besides the given quiddity, only insofar as it implies that a second quiddity might be among the things from which the differentia distinguishes the real species.

This reading of al-Kātibī's analysis of the final differentia is expressible in terms of the same variable factors that are in play in his analysis of the other predicables: whether the predicable is the quiddity of its particulars, whether it is a part of a quiddity, and whether its particulars belong to several contrasting quiddities. The analysis of the final differentia is that all its particulars have a single quiddity, χ , that the differentia ϕ is not itself a quiddity but part of their quiddity, and that no two particulars, x and y , falling under ϕ , have incompatible quiddities.

$$DIF\phi \text{ iff } \exists \chi \left[\begin{array}{l} \forall x [\phi x \chi Qx] \wedge \phi P\chi \neg \forall x [\phi x \phi Qx] \wedge \\ \neg \exists x, y, \chi, \psi [\phi x \wedge \phi y \wedge \chi Qx \wedge \psi Qy \wedge \chi \psi] \end{array} \right]$$

Kātibī refers to a traditional account which characterizes the differentia merely as a concept that is predicated substantially and distinguishes the quiddity from all else in existence:²⁶

25 Avicenna, *al-Ishārāt* 2.3.1: "As for the essential which is not fit (*laysa yaşluhu*) to be said of the many (whose universal it is in relation to them), said in answer to what-is-it, there is no doubt that it is fit to distinguish (*li-t-tamyīz*) the essential from what shares with it in existence, or in a given genus."

26 See Porphyry, *Introduction*, § 3 12.1 ff.: ... they say that not just anything which happens to separate items under the same genus is a difference but rather something which contributes to their being and which is part of what it is to be the object.

Text 6. They delineate the differentia as a universal predicated of something in answer to the question "which thing is it?" with respect to its substance. On this account, were a reality compounded from two or more coextensive matters, then each one would be a differentia for the reality, because each would distinguish it from what shares with it in existence.²⁷

This characterization is tantamount to one that Avicenna gives in *al-Ishārāt*, where he highlights the differentia's distinguishing function and its substantiality.²⁸ Al-Kātibī objects to such a characterization on the ground that it implies that if the two elements constituting a quiddity are coextensive (sc. mutually inseparable), then either one of them can count as a differentia, because both are indistinguishable in terms of their quidditative nature and their power to distinguish the compound from all else in existence. The characterization does not allow for any difference between the ways the two components form part of a quiddity. The account of the final differentia we have attributed to al-Kātibī does not fall foul of this objection, because its characterization of the final differentia rests on a difference between the way genus and differentia form part of a quiddity: one is a quiddity that is part of a quiddity, the other is a non-quiddity that is part of a quiddity.

6 Proximate and Remote Differentia

Al-Kātibī describes proximate and remote differentiae as differentiae of a designated species under a proximate or remote genus, respectively:

Text 7. The differentia distinguishing the species from what shares with it in genus is proximate if it distinguishes the species from what shares with it in a proximate genus (like "rational" for man), and remote if it distinguishes the species from what shares with it in a remote genus (like "sensate" for man).²⁹

He describes a differentia in relation to a designated species of a given genus ("It is the differentia of a genus."). It is striking that proximate and remote differentiae are here described as differentiae of proximate and remote genera, as

²⁷ Al-Kātibī, *Shamsīyya*, § 20.

²⁸ Avicenna, *al-Ishārāt*, 2.6: "Differentia is described as a universal predicated of the thing in response to which-thing-is-it in [terms of] its substance (*fī jawharihi*)."

²⁹ Al-Kātibī, *ash-Shamsīyya*, § 21.

they are in Avicenna;³⁰ remote differentiae are not described as standing in a direct relation to proximate differentiae.

A remote differentia “distinguishes the species from what shares with it in a remote genus (like ‘sensitive’ for man).” Consider the species *human* in relation to *sensitive* as a dividing differentia of the genus *body*. *Sensitive* and *animal* are mutually inseparable, and *sensitive* excludes all non-animal bodies. Thus, it distinguishes the species *human* from what shares with it in the remote genus *body*. The species that share with *human* in the genus *body* are all the species of *body* coordinate with *animal*. They are all incompatible with *animal* and thus incompatible with *human*. In this example it is clear that the differentia and the species are not mutually inseparable; more specifically, the species is separable from the differentia, as *human* is separable from *sensitive*.

6.1 *Proprium and Accident*

The third division at this third level subdivides what is extrinsic to its particulars, i.e., what is neither a species nor a genus nor a differentia:

$$\neg spe\phi \wedge \neg gen\phi \wedge \neg dif\phi$$

Kātibī notes that this class can be divided into the separable and the inseparable:

Text 8. As for the third division (in which the universal is extrinsic from the quiddity of the particulars under it), if it is impossible to separate it from its substrate then it is an implicate, otherwise it is a separable accident.³¹

But it turns out that the distinction between propria and accidents is neutral with regard to separability or inseparability from their subjects. The distinction depends instead on whether or not the concept is restricted to a single reality:

Text 9. If either the implicate or the separable is possessed solely by the members of one reality, it is a proprium (like “laughing”); otherwise it is

30 Avicenna, *al-Ishārāt* 2.3.3: “It may be a differentia for the ultimate species, like rationality for example for man. And it may be for an intermediate species, so it will be a differentia for a genus of an ultimate species, like sensitivity which is a differentia for animal, and thus differentia for the genus of man; it is not a genus for man, even though it is an essential more general than it.”

31 Al-Kātibī, *ash-Shamsīyya*, § 22.1.

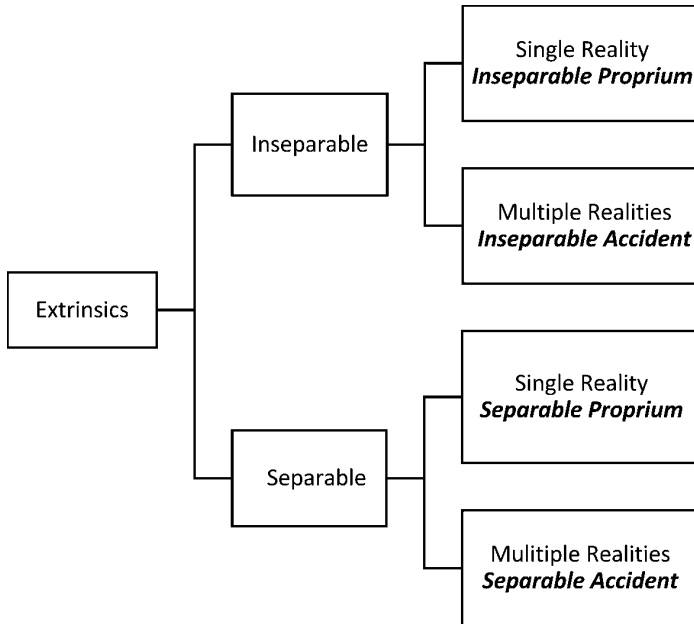


FIGURE 6.1 Division of Extrinsics into inseparable and separable, then into single reality and multiple realities

a general accident (like “walking”). We delineate the proprium as a universal said in an accidental way of what is under a single reality only, and general accident as a universal said in an accidental way of members of more than one reality. The universals are therefore five: species, genus, differentia, proprium and general accident.³²

Al-Kātibī’s characterizations repeat those of Avicenna as found in *al-Ishārāt*.³³ Al-Kātibī identifies what is extrinsic to its particulars with what is accidental to them.

If al-Kātibī’s division of the predicables is understood to include a division of extrinsic concepts into separable and inseparable, followed by a division of both the separable and the inseparable into single reality and multiple realities, then propria and accidents will not appear as such, but only as inseparable or separable.

32 Al-Kātibī, *ash-Shamsīyya*, § 23.

33 Avicenna, *al-Ishārāt* 2.6: “Proprium is described as being a universal said of what is under a single reality only, in a non-essential way. And general accident is described as being a universal said of what is under a single reality and of other things in a non-essential way.”

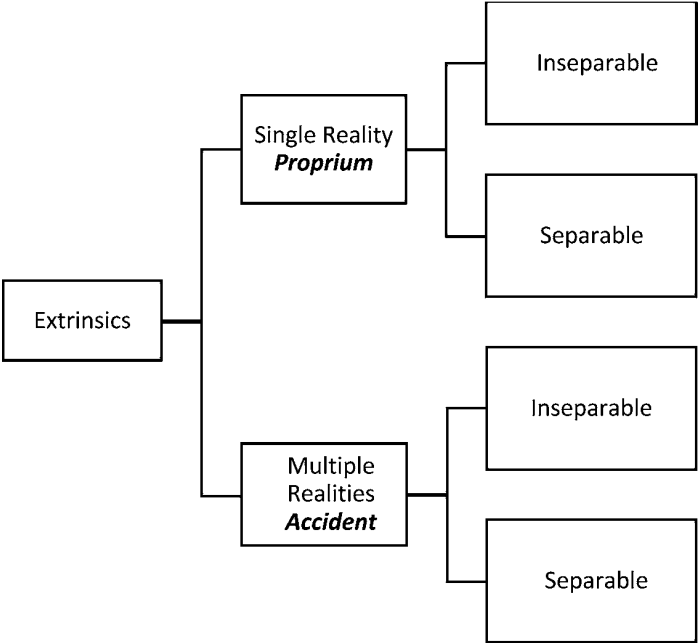


FIGURE 6.2 Division of Extrinsic into Propria and Accidents, then into inseparable and separable

The distinction between inseparable and separable accidents (*black* for an Ethiopian, as against *sleeping* for an animal) is familiar from Porphyry;³⁴ the distinction between inseparable and separable propria may be al-Kātibī’s re-conception of Porphyry’s distinction among those propria that belong only to their subject, between those that belong to all (e.g., *capable of laughter* for humans) and those that do not belong to all (e.g., *doctor* or *geometer* for humans).³⁵ Another approach would be to divide extrinsics first into single and multiple realities (sc. propria and accidents as such) and then subdivide the results into the inseparable and separable.

In the context of a deduction of the five predicables, this last approach is preferable, disregarding the further division of propria and accidents into the inseparable and the separable.

6.1.1 Evaluating al-Kātibī’s Division

Al-Kātibī’s division of the predicables is represented in Figure 6.3.

34 Porphyry, *Introduction*, § 5, 12.25.

35 Porphyry, *Introduction*, § 4, 12.13.

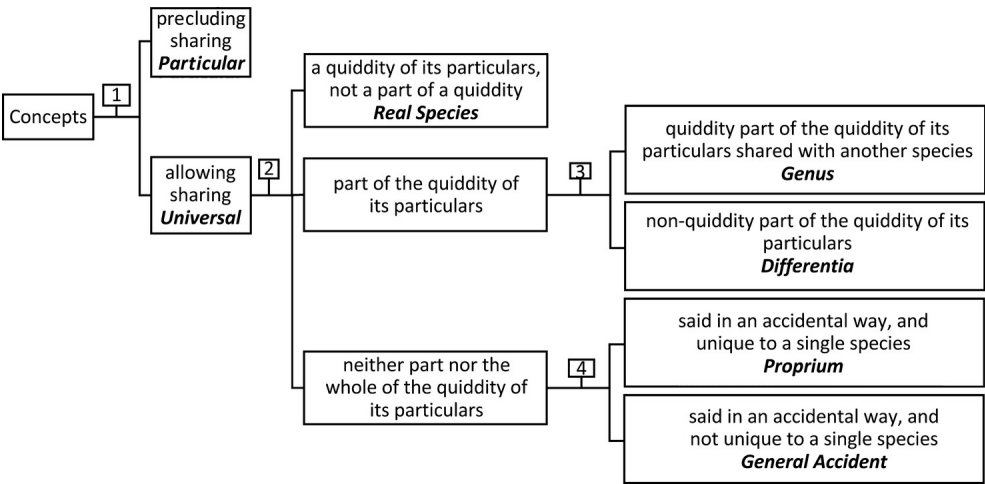


FIGURE 6.3 al-Kātibī's Division of the Predicables

Note: Not included in the Figure are al-Kātibī's distinctions between (a) implicates of the subject's existence and implicates of its quiddity, (b) implicates that are evident and those that are not, (c) separable accidents that disappear quickly and those that do not.

Each step in a division should produce classes that are exclusive of one another and exhaustive of the divided class. Al-Kātibī's division of the predicables satisfies the exclusivity requirement. It clearly satisfies the exhaustivity requirement at steps 1 and 4. At step 2, the exhaustivity requirement seems not to be met, because the division does not recognize the possibility that the sharable concept is a quiddity of its particulars *and* a part of a quiddity. But this possibility is covered under universals that are part of the quiddity of their particulars; so step 2 does produce an exhaustive division. Step 3 also appears to fail the exhaustiveness condition, omitting quiddities that are quiddity-parts but are not shared with more than one species. This is a genuine possibility if there are any genera having only a single species. If there aren't any such genera—if a genus must have more than one species—then step 3 is an exhaustive division.

Al-Kātibī's results can be summarized as follows. A multiple-species genus such as *body* is a quiddity of all its particulars, is a part of a quiddity of all its particulars (e.g., is a part of *animal*), and has particulars belonging to several quiddities (e.g., *human* and *horse*). A single-species genus is distinguished by not belonging to several quiddities. A higher species like *animal* is distinguished from a lowest species by belonging to several quiddities. A higher differentia like *sensate* is distinguished from a lowest differentia by belonging to several quiddities. These results can be measured against the following Table, which shows all possible combinations of being a quiddity of all its particulars, being

TABLE 6.1 The 5 Predicables according to al-Kātibī

	The concept is a quiddity of all its particulars	The concept is a part of a quiddity of all its particulars	The concept's par- ticulars belong to several quiddities
1 Genus	Yes	Yes	Yes
2 [Quiddity-part of sin- gle quiddity]	Yes	Yes	No
3 [Non-part quiddity of multiple quiddities]	Yes	No	Yes
4 Lowest Species	Yes	No	No
5 Differentia: higher	No	Yes	Yes
6 lowest	No	Yes	No
7 Accident	No	No	Yes
8 Proprium	No	No	No

part of a quiddity of all its particulars, and having particulars of several quiddities.

But are there really eight distinct possibilities? As argued above, al-Kātibī does not define either the lowest or higher differentiae, but only differentia in general. The bracketed entries show the ways in which al-Kātibī's division fails to be exhaustive in the absence of principles excluding single-species genera and quiddities that are not parts of quiddities but belong to multiple quiddities. Given these exclusions, al-Kātibī's division would need to be expanded to include descriptions of lowest and higher differentiae in order to be exhaustive (but this can easily be done along the lines indicated in Table 6.1).

A further requirement on a division is that at each step the divided class is intensionally included in each of its dividing classes. This requirement was advocated by both Aristotle and Avicenna. Aristotle stipulates that a division of footed animals should be by reference to variability "in the foot."³⁶ Avicenna, in his discussion of the usefulness of divisions for arriving at definitions, lays it down that "division shows you that every differentia is connected with a genus above it, making the latter a genus for what is under it."³⁷ Avicenna appears to

36 Aristotle, *Metaphysics*, Transl. by W.D. Ross (Oxford: Oxford University Press, 1928), Z.12, 1038a14.

37 Avicenna, *Burhān* IV, 7, quoted from Strobino, *Avicenna's Theory of Science*, 322.

mean “connected with a genus above it” in an intensional sense when he says, “If one says ‘animal’ first (without saying it after ‘twofooted,’ whether in act or in potency in the sense in which items that are contained [in a notion] are said [in potency]), then when one says ‘two-footed’ after ‘animal,’ there is no deficiency.”³⁸

In all cases, the divided classes in al-Kātibī's division are intensionally included in each of the dividing classes. Both sharable and unsharable concepts are *eo ipso* concepts. Concepts that are the whole or part of their particulars are *eo ipso* sharable, as are concepts that are shared among their particulars but are neither part nor whole of that quiddity. Parts that are quiddities, and parts that are not quiddities, are both *eo ipso* parts. And concepts that are said in an accidental way, whether or not they are restricted to a single species, are *eo ipso* neither part nor the whole of their particulars' quiddity—because being said in an accidental way is nothing more than being predicated but being neither part nor the whole of the particulars' quiddity.

A final desideratum on a deduction of the predicables is that the notions generated by the process correspond to accepted understandings of the five predicables. Al-Kātibī's deduction of the predicables is selective rather than comprehensive. It rests on an analysis of the lowest species, but ignores the relative species. Similarly, he gives an analysis of *genus* understood as an absolute not a relative notion. The differentia is treated in a similarly absolute way. It is not restricted to differentiae in a genus, but allows for differentiae as part of the highest genus. His treatment of the proprium restricts consideration to (separable or inseparable) propria that belong to a single species, thus laying aside propria like *biped* for humans, which Porphyry had recognized as an “accident of all the species, even if not of it alone.”³⁹ Al-Kātibī can, however, recognize *biped* as a differentia or an inseparable accident, depending on whether it is a part of some quiddity. Finally, he accepts Porphyry's negative characterization of accidents, and his distinction between inseparable and separable accidents. Overall, his deduction produces a quintet of notions, selected from the polymorphous group found in Porphyry with a view to generating a set of mutually exclusive members that jointly exhaust an overall conception in a manner that respects Avicenna's rule of linkage and order.

This achievement was not always matched in other deductions of the predicables. Any division based on the notion of genus as a correlative of species will fail the requirement that members of the same division be mutually exclu-

38 Avicenna, *Burhān* IV, 7, quoted from Strobino, *Avicenna's Theory of Science*, 322.

39 Porphyry, *Introduction*, § 4, 12.15.

sive: this is because one and the same universal concept can be both a (relative) genus and a (relative) species. Al-Fārābī's division of the predicables is one that fails this test.⁴⁰ Al-Fārābī's division fails the test in another way too, being based on a contrast between predicables that signify by resemblance and by distinction (where genus, species and accident function by resemblance, while the function of differentia and proprium is to distinguish).⁴¹ It appears that differentiae can signify resemblance as well as distinctness between the subject and its referents. Equally, genera signify opposition as well as sharing—opposition between the subject of the species and that subject's complement within the genus. So in this division the predicables are not generated by a series of mutually exclusive disjunctions.

Acknowledgement

The present article is the latest of many that have been inspired and improved by extensive conversations with Tony Street. I take this occasion to thank Tony for his generosity over many years in sharing with me his ground-breaking work on the history of Arabic logic.

Bibliography

- Aristotle. *Metaphysics*. Transl. by W.D. Ross. Oxford: Oxford University Press, 1928.
- Di Vincenzo, Silvia. *Avicenna, The Healing, Logic: Isagoge. A New Edition, English Translation and Commentary of the Kitāb al-Madḥal of Avicenna's Kitāb al-Šifā'*. Boston: De Gruyter, 2021.
- al-Fārābī. *Introductory Risālāh on Logic*. Ed. and transl. by D.M. Dunlop. *Islamic Quarterly* 2, no. 3 (1957): 224–235.
- al-Kātibī. *Najm al-Dīn al-Kātibī's al-Risālāh al-Shamsiyyah. An Edition and Translation with Commentary by Tony Street*. New York: New York University Press, 2024.
- Porphry. *Introduction*. Translated with an Introduction and Commentary by Jonathan Barnes. Oxford: Clarendon Press, 2003.

40 Al-Fārābī, *Introductory Risālāh on Logic*, ed. and transl. by D.M. Dunlop, *Islamic Quarterly* 2, no. 4 (1955): 234: "The genus is described as the more general of two simple predicates by which it is correct to answer the question 'what is this that we see, or perceive in general.'"

41 Al-Fārābī, *Introductory Risālāh on Logic*, 233: "By the simple predicate one thing either resembles another or is distinguished from another."

Street, Tony. *Avicenna's Logic Explained: A Translation of Naṣīr ad-Dīn aṭ-Ṭūsī's Ḥall Mushkilāt al-Ishārāt*. Forthcoming.

Strobino, Riccardo. *Avicenna's Theory of Science: Logic, Metaphysics, Epistemology*. Oakland: University of California Press, 2021.

Harmonizing the Sages: Abravanel Reading Maimonides through Avicenna and Averroes

Daniel Davies

Tony Street played an important role in my developing a way to read Maimonides' *Guide for the Perplexed* that strives to respect the author's own unusual instructions while avoiding the various popular approaches that exploit perceived contradictions in order to argue for a preconceived agenda. In doing so, he helped me find a place in an already crowded field. Academic studies of the *Guide* and of medieval Jewish thought generally remain heavily indebted to attitudes popularized by Leo Strauss and Shlomo Pines. As is well known, Strauss argued that Maimonides deliberately included contradictions in the *Guide* in order to hide his true opinion about theological doctrines.¹ He claimed to be expounding a passage in the *Guide's* introduction, in which Maimonides explicitly states that it will contain contrary or contradictory statements, some of which ought to be hidden from the masses.² Similar methodologies spread to include interpretations of other Arabic philosophers, even if they remained inspired partly by Maimonides' introduction.³ While my initial route into studying Maimonides came through reading articles espousing the common viewpoint, often attractively and brilliantly, Tony's rootedness in historical and philosophical approaches, and his questioning attitude toward more speculative techniques and assumptions, eventually prodded me to develop an alternative interpretation. With appreciation for these qualities, I thought it would be appropriate to present, in brief, some solutions to apparent inconsis-

1 Leo Strauss, *Persecution and the Art of Writing* (Chicago: The University of Chicago Press, 1980), 60–74.

2 The passage in Maimonides appears in *Dalālat al-Ḥā'irīn*, ed. by Salomon Munk and Issachar Joel (Jerusalem: Azrieli, 1929), 12:7–12. The English translation is in Moses Maimonides, *The Guide of the Perplexed* translated with an Introduction and Notes by Shlomo Pines (Chicago: The University of Chicago Press, 1963), 18.

3 For a positive account of Strauss's influence on scholarship of Arabic thought, see Joel L. Kraemer, "The Medieval Arabic Enlightenment," in *The Cambridge Companion to Leo Strauss* ed. by Steven B. Smith (New York: CUP, 2009), 137–170. A critique appears in Dimitri Gutas, "The Study of Arabic Philosophy in the Twentieth Century: An Essay on the Historiography of Arabic Philosophy," *British Journal of Middle Eastern Studies*, 29 (2002), 19–25.

tencies in the *Guide* worked out by the prolific fifteenth century commentator Isaac Abravanel.

Abravanel was an extremely complex figure. He held important positions in the royal courts of both his native Portugal and Spain before being exiled to Italy in 1492.⁴ His biblical commentaries were widely published from the sixteenth century on and influenced Christian Hebraists, some of whom translated parts into Latin. Nevertheless, his reputation has fluctuated. In the early twentieth century, he was considered to have marked the end of medieval Hebrew philosophy, and to have repeated previous thinkers without adding innovative contributions. More recently, he has been rehabilitated, and scholars increasingly acknowledge the value and originality of his works. While his son Judah, commonly known as Leone Hebreo, was always recognized as a major Renaissance author, newer studies have shown that Renaissance thought also left an impact on Isaac himself.⁵ One of the constants throughout Abravanel's writings is an extensive engagement with Maimonides, who features heavily in Abravanel's bible commentaries and, as well as a long commentary on the *Guide*, a number of Abravanel's other works are dedicated to discussing specific parts of Maimonides' thought. Among them, *New Heavens* is of particular interest, as it deals with a central aspect of Maimonides' thought, which also happens to remain one of the most contested today, the creation of the world.⁶

New Heavens is divided into four parts. The first is an extended commentary on a single chapter of Maimonides' *Guide for the Perplexed*. The remaining three investigate issues arising from the commentary that Abravanel thinks require further explanation or justification. His motivation is twofold. Firstly, he wishes to defend what he considers to be the true doctrine about creation, that the world is originated. Secondly, he wishes to defend what he considers to be a correct reading of the *Guide*, that Maimonides teaches the world's origination. There are occasions on which Abravanel objects to Maimonides' ideas, most famously prophecy and scriptural interpretation.⁷ However, when

4 A recent summary of his reception appears in Cedric Cohen Skalli, *Don Isaac Abravanel* (Jerusalem: Zalman Shazar, 2017), 263–271 [Heb.].

5 As well as Skalli's *Abravanel*, see Seymour Feldman, *Philosophy in a Time of Crisis; Don Isaac Abravanel: Defender of the Faith* (London: RoutledgeCurzon, 2003) and Eric Lawee, *Isaac Abravanel's Stance Toward Tradition* (Albany: SUNY Press, 2001).

6 *New Heavens* was printed in Rödelheim, in Frankfurt, in 1828. The title is taken from Is. 65:17. It is one of two books that Abravanel dedicates to creation, the other being *The Deeds of God*, the title of which is taken from Ps. 66:5.

7 For Abravanel's critique of Maimonides on prophecy, see Alvin Reines *Maimonides and Abar-*

it comes to the *Guide's* teachings on creation, he attempts to defend and justify Maimonides' theological positions.⁸ In order to do so, he often adopts a harmonizing approach, seeking to understand how statements that other commentators on the *Guide* found incongruent can be brought together. From the turn of the sixteenth century, Abravanel looks back over a few hundred years of Hebrew interpretations of the *Guide*. Defending Maimonides is necessary, from his perspective, because there was a tendency among some commentators to think that Maimonides believed the opposite view to that which he explicitly expounds. These include commentators influenced by Averroes, who interpreted Maimonides so that he agrees with Averroes.⁹ One such prominent author is Moses of Narbonne, to whom Abravanel responds in *New Heavens*, and who wrote that "it is the task of the exegete to interpret the statements of the sage in such a way as to conform to the truth, whenever it is potentially embodied in his statements."¹⁰

Abravanel dedicates the fourth part of *New Heavens* to discussing problems concerning which there are differences of opinions that arise during the course of the previous three sections. There are six in total: whether the heavenly bodies are ensouled; whether the six directions exist in the heavens; whether the force moving the sphere is equally present to the entire sphere or located in a part of it; whether things proceed from God in a chain of succession; whether the prime mover is identical with the First Cause; whether there is a final cause in view of which the heavens are created. Concerning four of these questions, Abravanel thinks that Maimonides' own position is ambiguous. In the case of three of them, he claims that disagreements between Avicenna and Averroes are behind the apparently conflicting statements in the *Guide*. In one of these three—whether things proceed from God in a chain of succession—attempting to reconcile Maimonides' statements leads Abravanel to offer what

banel on Prophecy (Cincinnati: HUC Press, 1970). An example of his attitude toward Maimonides' exegesis appears in Lawee, *Isaac Abarbanel's Stance*, 59–76.

- 8 Aviezer Ravitsky surveys the different approaches taken by medieval interpreters, including the disagreement between "esoteric" readers of the *Guide* and "moderate-harmonistic" readers. He draws parallels between some early interpretations and those of Strauss and Pines. "The Secrets of the *Guide to the Perplexed*: Between the Thirteenth and Twentieth Centuries," in *Studies in Maimonides* ed. by Isadore Twersky (Cambridge, Mass.: HUP, 1990), 159–207.
- 9 Averroes' commentaries on Aristotle were particularly important to Hebrew philosophers, for whom the middle commentaries were the basic texts of Aristotelian science. See Steven Harvey, "On the Nature and Extent of Jewish Averroism: Renan's *Averroés et l'averroïsme* Revisited," *JQR* 7 (2000), 114.
- 10 Quoted in Ravitsky, "The Secrets of the *Guide*," 167.

seems to be a genuinely original position in order to interpret the *Guide*. The fourth problem in which Maimonides' view is apparently ambiguous concerns whether or not the world has a final cause. This last question still exercises scholars of Maimonides today, who almost invariably argue that he openly contradicts himself. Again, Abravanel claims that Maimonides' apparently inconsistent opinion can be squared; he therefore contributes an overlooked solution to the current debate. Below, I will consider these four questions.

I do not aim to investigate either Avicenna or Averroes themselves, who have in any case been the subjects of excellent recent articles on these issues, nor to ascertain Abravanel's precise relationship to them, which would be a different study.¹¹ Instead, I will try to explain the use to which he puts them in order to reconcile statements in the *Guide* that might seem, at first sight, to be possible examples of the contradictions that Maimonides describes in his introduction. Along with reflecting something of Arabic philosophy's reception in Hebrew, Abravanel's discussions present a challenge and a potential corrective to the popular methodologies that assume that the *Guide* employs simplistic contradictions. These common, accessible approaches enable readers to avoid philosophical analysis and focus on uncovering apparent literary hints. Because of the *Guide*'s particular literary style, it is relatively easy to locate unusual statements, asides, or apparent contradictions. This is one of several reasons that there are so many homiletic pieces written about Maimonides and that the field centers around hermeneutical studies that try to show which of the supposedly incompatible ideas reflects Maimonides' real belief. Examples pervade the secondary literature but whether or not Maimonides believed in the world's origination is probably the most disputed question of all. Rather than asking what Maimonides' arguments amount to, readers often assume that he is contradicting himself in order to indicate that he does not believe in creation even though he consistently claims to.¹² The contradictions therefore have the role of disguising Maimonides' opinion because, it is thought, his views would be unsuitable for the masses. For those who would like Maimonides to be an ally in their own religious or philosophical convictions, the idea that he contradicts

11 For a general account of Avicenna's doctrines, see Damien Janos, "Moving the Orbs: Astronomy, Physics, and Metaphysics, and the Problem of Celestial Motion According to Ibn Sīnā," *Arabic Sciences and Philosophy* 21 (2011), 165–214. For an account of Averroes, see Gerhard Endress, "Averroes' *De Caelo*, Ibn Rushd's Cosmology in his Commentaries on Aristotle's *On the Heavens*," *Arabic Sciences and Philosophy* 5 (1995), 9–49.

12 The literature discussing the issue is vast. Herbert Davidson presents an extremely critical assessment of Strauss and esoteric interpretations in *Moses Maimonides: The Man and His Works* (New York: OUP, 2005), 393–402.

himself in order to hide a heterodox belief is a useful methodological tool. Maimonides' surface meaning, or that of other theological tracts, can be dismissed as vulgar, while a commentator can claim to understand the more advanced position. It is not surprising, then, that academic interpretations are extremely diverse and that many purport to reveal Maimonides' true, secret teaching. Abravanel shows that a more traditional attitude can also yield interpretations that have some sophistication.

1 Abravanel's Resolutions

1.1 *Concerning the Souls of the Spheres*

The first of the six problems that Abravanel considers in the book's fourth part asks whether or not the spheres have souls.¹³ He raises this particular question because Maimonides' view seems to be ambiguous and, Abravanel reports, other philosophers disagree about the matter. The supposed contradiction that Abravanel finds appears in part two of the *Guide*. On the one hand, Abravanel claims that Maimonides intimates, in part of his proof from motion for God's existence, that he does not consider the spheres to be ensouled. The proof takes a dilemmatic form, in which Maimonides says that the sphere's mover must be either internal or external. If it is internal to the sphere, the alternatives are that it must either be divided if the sphere's body is divided or be indivisible. A force internal to the sphere that remains whole if the body is divided would be similar to a soul, and Maimonides denies that the sphere's mover is of this sort. Therefore, in the course of rejecting the opinion that it is internal to the sphere and indivisible, he argues that the cause cannot operate in a similar way to that in which a soul moves a body.¹⁴ On the other hand, only a few chapters later, he explicitly states that the spheres have souls: "That the sphere is endowed with a soul is clear upon reflection."¹⁵

Abravanel identifies the roots of the two different views in Avicenna, who posits that they are ensouled, and Averroes, who, Abravanel reports, denies that they are. Avicenna's argument explains the fact that the heavens are in motion, says Abravanel, because the spheres conceptualize and therefore move out of desire for the object of cognition.¹⁶ Averroes is presented as trying to return

13 *New Heavens*, 34^r–36^v.

14 *Guide*, Munk, 170:13–17. Pines, 244.

15 *Guide*, Munk, 177:13. Pines, 255.

16 In addition to Janos, "Moving the Orbs," see Tommaso Alpina, "Is the Heaven an Animal? Avicenna's Celestial Psychology between Cosmology and Biology," in *Cosmology and Biol-*

to Aristotle's view, by arguing that the heavenly body is simple, not composed of matter and form, and moves through conceiving its mover, an intelligence. Abravanel argues that Averroes' claim cannot be accepted. If the sphere is a simple body, he says, it cannot conceive, for to be a body is merely to have three dimensions so, if a body is simple, it does not have the capacity for intellectual activity.¹⁷ He therefore proceeds to attempt to rebut Averroes and Aristotle. Abravanel writes that Aristotle was moved to say that the sphere is a simple body by the idea that anything composite must be corruptible and that whatever is, in itself, corruptible cannot be eternal. However, Abravanel says that it is not true that whatever is composite must be corruptible. He argues that the kind of matter that is subject to corruption is that which contains opposites and passivity, but Aristotle claims that the matter of the spheres contains neither, and is of a completely different sort. Furthermore, Abravanel says, the claim that what is possible in itself cannot be eternal is also not necessarily true, because a possible thing can derive eternal motion from something else. Abravanel asserts that this leads to the insight that the possibility of corruption differs from the possibility of ceasing to move, the reason being that something is subject to corruption because of the opposition inherent to it while something can cease to move even if it lacks the necessary kind of multiplicity that would make it corruptible. Since the sphere is not in itself corruptible it could, in principle, stop moving because its mover stops causing it to do so. And Abravanel maintains that this means it can also derive eternal motion even if it is not completely simple.

Abravanel holds that the sphere cannot be simple but must be a composite of matter and form, although the terms matter and form are used equivocally, and the sphere's soul is purely intellectual. He disagrees with Avicenna regarding the nature of these souls, since he denies that they possess imagination or estimation. His disagreement with Averroes is more difficult to pin down. He seems not to have a problem with Averroes' view that the celestial souls are purely rational. Instead, he objects to the opinion that the sphere is simple, arguing that it cannot be both simple and ensouled, even if the soul is purely rational. Although he appears to claim that Averroes denies that the spheres are animate, his own position does not seem so different to that of Averroes, once the qualification is added that the heavenly souls are not like human souls.

ogy in Ancient Philosophy: From Thales to Avicenna ed. by Ricardo Salles (Cambridge: CUP, 2021), 261–278.

17 For Abravanel's account of body, see Ofer Elior "Isaac Abravanel's Rejection of Corporeal Form," *Aleph* 12 (2012), 367–402.

After summarizing these two opinions, Abravanel moves on to explain the difficulty in identifying Maimonides' opinion, based on the supposed contradiction in the *Guide*. It is a contradiction that seems to be somewhat contrived, and Abravanel is able to resolve it easily in light of his own clarification about the heavenly soul. When Maimonides argues that the sphere's eternal motion cannot be like the motion caused by a human soul, he argues that, were it caused by such a soul, the soul would be in motion accidentally and would therefore, at some point, cease to move. In that case, the motion would not be eternal. However, the point seems to be that a self-mover must at some point come to rest, not that all accidental motion must cease. Even if a person must at some point stop moving herself, there is no need to say that she must stop being moved entirely. She could spend her entire life on a boat sailing the oceans. In such a case, her ceasing to move would depend on her ceasing to be, and these events would occur simultaneously, but ceasing to move could still occur without ceasing to be, if the ship were to dock. However, although the motion cannot be caused by a humanlike soul, it does not follow that it cannot be caused by a soul at all. Abravanel distinguishes the spheres' souls from those of humans on the basis that human souls necessarily come to rest. The souls of the heavens do not because there is a great difference between the matter in the sublunar world and heavenly matter. Since the superlunar matter does not have a contrary motion, and does not present an impediment in the way that earthly matter does, it is constantly obeying its form. It does not tire, as the body does not decay, so nothing prevents a soul generating eternal motion in the sphere, as long as it does so through intellectual cognition. In Abravanel's view, there is a difference between the two motions because the corruption attending perishable beings in the sublunar realm is necessary because of features inherent to those beings whereas the motion that causes the soul to move is not purely self-generated and therefore not inherent. He therefore does not necessarily need to claim that the spheres are not ensouled, simply that the souls are not the single, ultimate causes of motion. Any motion they generate must be caused by a desire for something they do not already possess, which means that they are themselves moved. So Abravanel says that Maimonides' argument depends on saying that the souls are not the only movers rather than denying that the spheres are at all moved by their souls. The spheres must be moved both by their souls, which cognize, and the intelligences, which are the objects of cognition.

In Abravanel's view, then, there is no contradiction between Maimonides' apparently diverging statements. The spheres can have souls even though they are not moved by the souls alone. Nevertheless, he allows this perceived contradiction to invite a constructive solution that enables him to square conflicting

sources said to be standing behind Maimonides' ideas. He does not explicitly claim to modify Avicenna's opinion. However, by insisting that the sphere's soul is purely intellectual, he can be seen to disagree with Avicenna's claim that the sphere also has imagination and estimation.

1.2 *The Procession of Creatures from God*

The second problem in which Abravanel identifies ambivalence in Maimonides' view concerns the way in which creation proceeds from God. Abravanel explains that Avicenna argues in favor of a procession from the One while Averroes claims that all the intelligences and spheres flow from God "essentially and primarily."¹⁸ Again, he identifies both positions in different passages of the *Guide*. On the one hand, Abravanel says, Maimonides argues, "in all of the chapters that he wrote about origination,"¹⁹ that the differences that obtain in the heavenly motions indicate that each sphere is governed by a separate mover, aligning him with Avicenna. On the other hand, he says that Maimonides insists that everything was created at once "after total nonexistence."²⁰ In Abravanel's presentation, the similarity between Maimonides and Averroes lies in Averroes' rejecting Avicenna's depiction of the cosmos and claiming that it does not adequately explain how existents come to be. The connection between Maimonides and Averroes that Abravanel draws does not stem from Maimonides' belief in origination, which Averroes does not share. Instead, it is in the critical attitude they both adopt toward Avicenna's view. After briefly outlining the two positions, Abravanel argues that both are correct when the doctrine of creation is introduced.

Abravanel's summary of Avicenna's argument is highly truncated. It runs as follows. There is continuous motion in the heavens, which cannot be self-caused. There must therefore be an incorporeal mover that imparts motion by way of desire and conception (Abravanel does not mention that it is the final cause, although he did so in the earlier question). Since this mover is eternal and entirely without passivity, it must be the most praiseworthy of existing things, which is intellect, and if it is intellect, it must have the act of intellection. The activity of the First cannot be in vain, so it produces a single angel. Further, this is the only thing produced by the cognition, since the cognition is simple. However, the angel conceives both itself and something of its cause, so it produces two things, another intelligence and the soul of a

¹⁸ *New Heavens*, 46^r, 15.

¹⁹ *New Heavens*, 46^v, 13.

²⁰ *New Heavens*, 46^v, 9.

sphere. The second intelligence behaves in the same way, as does the resulting third, creating a chain that ends with the active intellect, whose existence is attested by the human intellect's activation. Abravanel does not explain how the sphere's body is generated. However, he does report that these creatures are eternal, since they are necessary results of God's eternal activity, but also that they are possible, since they depend on causes. Since the first creature is generated, it is not in itself necessary, but nevertheless has existence, so it automatically contains multiplicity. Abravanel could have explained that these different facets allow the intelligence to contemplate itself in different ways, therefore enabling further multiplicity. Presumably, he does not see the need to go into such detail.

Next, Abravanel reports two reasons that al-Ghazālī rejects Avicenna's theory. One is that the claim that an intelligence can produce a sphere through cognizing itself is a fantasy and "chasing the wind".²¹ The second criticism targets Avicenna's assumption that only a single, simple being can proceed from another single and simple being. This is true only in the case of a natural, necessitated action, Abravanel says. A natural body has only a single motion, toward its natural resting place. However, if creatures are produced by an act of will, not as a necessary result of an activity natural to God, there is no reason to think that multiple products indicate a multiplicity in the agent's essence. Al-Ghazālī's criticisms are followed by Abravanel's presentation of Averroes' theory. Again, it is presented in abbreviated form, and Abravanel only touches on a couple of points that he deems relevant. He says that the First is characterized as acting and only in an equivocal sense. The implication seems to be that, as Averroes writes, Avicenna's principle would be valid were creation similar to the kind of generation that is carried out by creatures. Since creation is *sui generis*, it does not follow that the First Cause can only produce one thing through its single action. The plurality in beings occurs because of the different conceptions that they themselves have; it does not stem from any plurality in the First Cause. Presumably, Abravanel is here discussing only the plurality that pertains among the intelligences. He proceeds to explain that even the term 'plurality' is metaphorical in the cases of incorporeal entities since number is a feature of material individuals. There is therefore a plurality of intelligences in species only. He also denies that they are properly graded by being causes and effects, instead attributing their hierarchy to their different levels of apprehension.

21 The quoted phrase is from Ecclesiastes 1:17. Abravanel often weaves in citations or allusions to biblical or rabbinic texts.

Abravanel has sympathy for both these positions. On the one hand, he agrees that it makes sense to assign an intelligence to each sphere. On the other, he sees no reason to limit the First Cause's activity. Therefore, he puts both theories to use by divorcing them from their authors' belief in eternity. He rejects this aspect since he thinks that Maimonides has successfully refuted the arguments purporting to show that the world's eternity is demonstrable. Introducing the premise that creation involves an absolute beginning enables him to propose a novel solution to the problem. Since he claims that Maimonides successfully refutes eternity, he does not accept either opinion in its entirety. Regarding the origination itself, Averroes' model is appropriate. However, subsequently, Avicenna's account is an appropriate depiction of the way in which the cosmos is ordered:

It seems to me that, according to the belief in origination, we ought to accept both opinions and distinguish between them temporally. At the start of creation, the separate intellects and heavenly bodies were emitted and made from him without an intermediary "for they are all the work of his hands."²² However, after they were created, God set them on their characteristic ways, i.e., designated each separate intellect to move one sphere, as Avicenna holds. Since this is so, Averroes was correct about the moment of creation and Avicenna was correct about what happens after creation. We will accept the good from them in this question but we will not accept the bad, which is that the world is eternal, because these two opinions can accord with belief in origination in the way in which I have recounted.²³

Abravanel claims that Avicenna and Averroes have opposed understandings because they both argue that the world is eternal, and they can be reconciled if they are mediated by the belief that the world is originated. Furthermore, his argument allows him to square the apparently competing positions that Maimonides espouses. Abravanel produces a new perspective as a result of his attempts to mediate what he takes to be competing statements in the *Guide*.

1.3 *Identifying the Prime Mover*

Abravanel asks "whether the First Cause is the unmediated mover of the uppermost sphere, which moves with diurnal motion, or the first mover is an intellect

²² This phrase is quoted from Job 34:19.

²³ *New Heavens*, 46^r 37–46^v 6.

that is caused by it.”²⁴ Regarding this problem too, he identifies tension in the *Guide*. He says that, in the first part of the *Guide*, Maimonides seems to identify God with the first mover and quotes a few statements as evidence. For example, Maimonides writes that “the deity, may his name be held sublime, is the mover of the highest heaven, by whose motion everything that is in motion within this heaven is moved.”²⁵ Abravanel then quotes a contrasting view from the *Guide*’s second part. “It cannot be true that the intellect that moves the highest sphere should be identical with the necessary of existence.”²⁶ Maimonides explains that the first intelligence’s moving a body is something it has in common with the other intelligences, but it must also be possible to distinguish the first from the rest. In that case, both the commonality and the difference are “separately conceivable things” and the first mover would contain multiplicity.

Again, Abravanel traces the contrasting opinions to Avicenna and Averroes. It follows from Avicenna’s view, says Abravanel, that the first mover is composite and that it is therefore necessary to distinguish it from the First Cause. He explains that Avicenna’s school posits that there are two actions in the first mover, one through which it generates the sphere’s soul and one through which it produces the next intelligence. The first mover needs to conceive of both itself and its cause, in order to produce both effects. God cannot do this because God has no cause. It therefore follows that the first mover cannot be God. One might think there is an alternative in which it could, as there could be two objects of cognition within God’s essence. However, that is also impossible, since God is absolutely simple. Avicenna therefore argues that the First Cause cannot also be that which causes motion. Abravanel then reports that Averroes disagrees. Averroes grants that composition in the First Cause’s essence would follow if it produces creatures in the way that something artificial is made. Abravanel does not explain further but, given that he has argued, in the problem above, that Averroes considers God to be creating “essentially and primarily,” one can surmise that the difference is in the fact that an artisan generates something by using an accidental feature, the skill and knowledge required for the particular art, whereas God uses no accident or tool. In view of the comments Abravanel made about the previous question, he can say that Averroes has no need to posit an intermediary between the necessary existent and the sphere because God can cause the motion directly. “He said that the First does not share imparting motion with the rest of the intelligences because

24 *New Heavens*, 47^r, 20.

25 *Guide*, Munk, 119:3–4. Pines, 172.

26 *Guide*, Munk, 180:1–2. Pines, 258–259.

it [i.e., its causing motion] is universal and voluntary, whereas they are particular and necessary.”²⁷ The First can voluntarily cause motion throughout the entire cosmos even though there are many motions. So Abravanel proceeds to write that “since the entirety rather than only a part of existence flows from the First Cause, it is appropriately connected with the all-encompassing body, which is a medium through which the order of the rest of the heavenly bodies and all other existents flows.”²⁸

In answer to this problem of identifying the first mover, Abravanel’s does not try to resolve the friction in Maimonides’ text. Instead, since he is convinced by al-Ghazālī’s criticisms of the reasons that led Avicenna to posit an intervening intelligence, and by Averroes’ restatement of Aristotle, he points out that Maimonides does not explicitly endorse Avicenna’s opinion. Instead, Maimonides writes, “This is the assertion and the opinion of Aristotle; and his proofs for this, in so far as they are probable, are set forth in the works of his followers.”²⁹ Furthermore, Abravanel claims that Maimonides realized the opinion’s inadequacy, which is why he specified that the proofs were advanced by Aristotle’s followers rather than Aristotle himself. He says that is why the chapter in which Maimonides outlines Avicenna’s doctrine ends the sentence, “I shall explain to you, in the following chapters, what in our Law corresponds to these opinions and what in it differs from them.”³⁰

1.4 *The Purpose of Creation*

From the perspective of discussions currently taking place in the field of Maimonides Studies, the final problem that Abravanel addresses is the most interesting. He asks, “What is the final cause in view of which the heavens were created? This question involves two investigations. One is whether it is appropriate for us to seek a final cause for the whole of existence, and specifically the heavens; the second is, if it is appropriately sought, what is it?”³¹ In response to the first of these two questions, Abravanel offers a solution to an interpretative difficulty that continues to exercise scholars today. It is generally taken for granted that Maimonides contradicts himself, so Abravanel’s solution is striking, and shows that he has a voice to add to the ongoing discussions of Maimonides.

27 *New Heavens*, 48^r, 5–6.

28 *New Heavens*, 47^v, 11–13.

29 *Guide*, Munk, 180:4–6. Pines, 259.

30 *Guide*, Munk, 180:9–11. Pines, 259.

31 *New Heavens*, 48^v, 2–4.

The section begins with Abravanel citing a couple of arguments purporting to show that the world cannot have a final cause. One is that all things have proximate causes, and these causes are united in the ultimate final cause, which is the sphere. Since there is nothing outside the sphere, the whole of existence cannot have a final cause. "Particular activities have purpose, which unites them in the aggregate of the world or the sphere in which they are, as it is their final cause. But what thing could be outside of the aggregate of the world or the sphere itself that could be supposed to be their purpose, so it could be said that they were created for its sake?"³² As the sphere is external to individual beings, it can be considered their final cause, but it could not be said itself to have a final cause, since there is nothing external to the sphere that could be what it aims at. The second argument begins from the premise that every agent that acts with a purpose aims at something that it is lacking "and reaching that goal is its perfection." Therefore, "inasmuch as the sphere and the whole world is an act of God, if God were to act for a purpose, God would be a deficient agent. Since God is not a deficient agent, God does not act for a purpose."³³ Since God lacks nothing, God's actions cannot have a final cause. Therefore, the world has no final cause.

Abravanel rejects this view out of hand, saying final causality is the basis of the sciences. "Scientific investigation is perfected through knowing the causes, and all the causes are for the sake of the final cause. Someone who says that one should not seek a goal for the species of things and their whole abrogates the nature of the intellect which cognizes things because of their final causes."³⁴ He is able to call on Maimonides in support of his position that all of God's actions are good and therefore have a purpose. "The good and excellent action is that accomplished by an agent aiming at a noble end, I mean one that is necessary or useful, and achieves that end."³⁵ Maimonides mentions some who say that the world is a result simply of God's will, and nothing more, but rejects their view. "As for that sect among the people of speculation that holds that God does not do a thing because of another and that there are no causes and no effects, but that all His actions correspond to His will so that one should not seek an end for them ... the actions of God are considered by these people as falling under the class of the futile or held to be even inferior to futile actions."³⁶ This view

32 *New Heavens*, 48^v, 6–11.

33 *New Heavens*, 48^v, 9–10.

34 *New Heavens*, 48^v, 20–22.

35 *Guide*, Munk, 365:24–26. Pines, 503.

36 *Guide*, Munk, 366:10–15. Pines, 504.

is clearly wrong, says Maimonides: "A man endowed with intellect is incapable of saying that any action of God is vain, futile, or frivolous."³⁷ So, Maimonides distances himself and the Law from the idea that creation is a result only of divine will. Moreover, just as each creature has a final cause, so does creation as a whole. And Abravanel refers to another statement from earlier in the *Guide*, in which Maimonides explicitly says that God is the final cause.³⁸

In answer to the question whether the world has a final cause, then, Abravanel and Maimonides seem to be clear that it must. However, there is a chapter in which Maimonides appears to say the opposite. He begins by writing that "the minds of perfect men have grown perplexed over the question of what is the final end of that which exists. Now I will explain that in all schools this question is abolished."³⁹ The schools in question are those of Aristotle and the Law. Maimonides argues that Aristotle thinks that no final cause can be given for the universe as a whole because he believes that the world is not originated. In the case of something not produced, there is no point asking what the final end of its very existence is. The question why something was generated does not arise if it was not generated at all. This is the reason no final end is sought for God's existence, says Maimonides. There is no point asking about the purpose of God's existence as God's existence is necessary. He says that this shows that what is not created has no final cause. If God has no final cause because God is not created, whatever is not created has no final cause. Maimonides then claims that "a final end can only be sought with regard to all things produced in time that have been made through the purpose of an intelligent being."⁴⁰ It seems, then, that, in Maimonides' view, belief in an eternal world rules out the possibility of seeking a final cause for existence while belief in origination ought to lead to that quest, since the Law teaches that the world has been "made through the purpose of an intelligent being." However, Maimonides says that it does not: "even according to our view holding that the world has been produced in time, the quest for the final end of all the species of beings collapses."⁴¹ The Law also teaches that the ultimate goal of existence is unknowable and must simply be ascribed to God's will. "We are obliged to believe that all that exists was intended by Him, may He be exalted, according to His volition. And we shall seek it no cause or other final end whatever. Just as we do not seek for

37 *Guide*, Munk, 365:30–366:1. Pines, 503.

38 *Guide*, Munk, 117:18. Pines, 170.

39 *Guide*, Munk, 323:22–23. Pines, 448.

40 *Guide*, Munk, 324:1–2. Pines, 448.

41 *Guide*, Munk, 326:20–21. Pines, 452.

the end of His existence, may He be exalted, so do we not seek the final end of His volition, according to which all that has been and will be produced in time comes into being as it is.”⁴² God’s purpose in creating remains unknown and inscrutable.

In the opinions of some scholars, Maimonides’ claims in this chapter amount to a wholesale denial of final causality. For example, David Wirmer recently wrote that Maimonides presents Aristotle as arguing that “inasmuch as in an eternal and necessary world no part of the world can have an (ultimate) end, the world as a whole cannot have an end either.”⁴³ On this reading, the idea that the world has a final cause is ruled out both by Aristotle and by the Law; furthermore, so is final causality generally. Wirmer asks whether the need to reject global finality proves that particular finality should also be rejected as, he claims, Maimonides writes in chapter 13, or whether the need to affirm particular finality proves that the world as a whole has a final cause, as in chapter 25.⁴⁴ In short, Maimonides is said to give the same question contradictory answers. Usually, the supposed contradiction is said to be between the two different chapters. Maimonides is said to reject teleology in chapter 13 and affirm it in chapter 25. In chapter 13, he writes that the final cause is God’s will, but in 25 he seems to deny this: “while we believe that the world has been produced in time, none of our scholars and none of our men of knowledge believe that this came about through the will and nothing else.”⁴⁵ Most recently, Warren Zev Harvey has argued that Maimonides’ presentation is so complex that chapter 13 alone is “riddled with different sorts of contradiction.”⁴⁶ In Harvey’s view, Maimonides moves between what he thinks Aristotle and followers of the Law ought to think, given their own principles, and what they really do think.⁴⁷ The contradictions are, on this reading, overt, even if they are not spelled out. Harvey mentions a number of medieval commentators who saw, in Maimonides’ denying that creation has a final cause, a rejection

42 *Guide*, Munk, 328:10–13. Pines, 454.

43 David Wirmer, “The World and the Eye: Perplexity about Ends in the *Guide of the Perplexed* iii.13 and iii.25,” in *Interpreting Maimonides* ed. by Charles Manekin and Daniel Davies (Cambridge: CUP, 2019) 181. Wirmer surveys most of the previous studies of the question.

44 Wirmer, “The World and the Eye,” 179–187.

45 *Guide*, Munk, 367:9–11. Pines, 505.

46 Warren Zev Harvey, “Maimonides’ Critique of Anthropocentrism and Teleology,” in *Maimonides’ Guide of the Perplexed: A Critical Guide*, ed. by Daniel Frank and Aaron Segal (Cambridge: CUP, 2021), 210.

47 Harvey, “Maimonides’ Critique,” 212, 221. He also speculates that divergent parts of the chapter were written at different times. “Maimonides’ Critique,” 220.

of final causality.⁴⁸ Abravanel himself also cites prior commentators who were puzzled by Maimonides' apparent rejection of final causality. He is therefore reading Maimonides against the grain of many in his time as well, not only our own.

Abravanel defends the quest for final causes: "it should not be said that since it is the philosopher's opinion that one should not seek the purpose of the First Cause, so one should not seek the purpose of the world, if it is not created. The philosopher did not say that we refuse the question about the purpose of the necessary existence because it is not a created thing but because it is not an effect."⁴⁹ Since the world is an effect of God, it follows that the question can be raised. So Abravanel writes that "it is proper to seek the goal of the entirety of the world, both according to the philosopher, since it is an effect of God, and even more so according to us, who believe in origination."⁵⁰ What, then, is Maimonides getting at?

In Abravanel's view, there only seems to be an inconsistency because of a confusion. He distinguishes two different ways of asking about a final cause: "In the matter of final cause, we can ask one of two questions. One is the goal of the agent carrying out an action and the second is the goal in view of which the action is carried out."⁵¹ He says that the different chapters in Maimonides' *Guide* are asking in these two alternative ways, which is why they offer divergent answers. In chapter 13, when denying that the world has a final cause other than God's will, Abravanel explains that Maimonides is asking about God's motivation to create. In chapter 25, when he insists that all God's actions do have final causes, he is asking about the final cause of the world itself. One question is about the agent and the other is about the effect, and "questions about the purpose of the agent differ from a question about the purpose of the activity."⁵² In order to illustrate the difference, Abravanel uses a few analogies including that of a builder. When asking about a house's final cause, the answer will be framed in terms of the house's use. Its purpose is to provide privacy and to offer shelter from the elements or predators. However, when asking about a builder's final cause, the answer is different. Of course, the builder aims at building a good house that is fit for purpose, but that is not the ultimate motivation. Instead, the builder's purpose is to earn a living. Similarly, a

48 Harvey, "Maimonides' Critique," 209.

49 *New Heavens*, 49^f, 13–14.

50 *New Heavens*, 49^f, 15–16.

51 *New Heavens*, 49^f, 26–27.

52 *New Heavens*, 49^f, 31.

tailor's motivation is not the same as the final cause of a jacket. Even the tailor's proximate final cause, to make the jacket, is not the same as the garment's final cause, which is the function it fulfils.

Abravanel applies the distinction between the different questions about a final cause to Maimonides' discussion. When Maimonides denies that creation has a final cause, Abravanel says that he is denying it from the point of view of the agent. Rather than offering a blanket critique of teleology, Maimonides is arguing that God does not create in order to attain something. Furthermore, it is appropriate to say that creation is an expression of God's will because Maimonides wishes to affirm that creation is not a necessary or natural result of God's existence. God is not constrained by anything or forced to create at all, for if an "act has no purpose whatever except to be consequent upon will, that will has no need of incentives. And the one who wills is not obliged, even if there are no impediments, to act always. For there is no external end for the sake of which he acts and that would render it necessary to act whenever there are no impediments preventing the attainment of the end. For in the case envisaged, the act is consequent upon the will alone."⁵³ Since Maimonides says that God is the universe's final cause, he must say that God is that for the sake of which it is created. But God is not thereby said to create it in order to achieve something. God's action is not motivated by an external final cause, so cannot be attributed to anything other than God's own will. However, saying that God is not motivated to create by an external final cause is not the same as saying that what God creates has no final cause. Maimonides writes, "Though natural science seeks to find out the final end of every natural being, that end is not the ultimate end of which we treat in this chapter."⁵⁴ From denying that God has an external motive to create, it does not follow that what is created has no final cause of its own, whether in its parts or in its entirety, since the final cause that motivates an agent does not have to be the same as that which is inherent to the effect. With this distinction, Maimonides can affirm both that the final cause motivating creation cannot be ascertained and also that all created things, and creation as a whole, have their own final causes. Abravanel's solution seems simple, but it can be used to resolve the apparent contradiction between the two different chapters and also the statements in chapter 13 in which Maimonides might appear to be prevaricating. It explains the relationship between Maimonides' arguing that a final cause should not be sought for existence as a whole, on the one hand, and his claim that natural science,

53 Munk, 209:19–210:2. Pines, 301.

54 Munk, 324:10–12. Pines, 449.

which relies on final causes, is not concerned with the kind of final cause that Maimonides says cannot be known.

2 Concluding Remarks

Abravanel's reconciliations of the particular positions addressed in this chapter may not all require complex philosophical analysis. Nevertheless, whatever the merits of his solutions, I think his harmonizing approach is worth taking seriously since it reflects a mindset that is open to innovative investigation. He is prepared to entertain the idea that apparently opposed statements can be squared by qualifying them in certain respects. Moreover, he assumes that Maimonides was not a slavish follower of others' philosophies but, instead, could have had independent and creative theories. Abravanel's orientation differs from many who read Maimonides today, who take advantage of supposed contradictions to argue that Maimonides does not mean what he says. But while this approach is still prevalent in studies of Maimonides and of medieval Jewish thought generally, although it is increasingly being questioned, it is a strange attitude to take toward philosophical texts. A philosophical argument often begins with a question about statements that appear to be opposed to one another when they seem to be true. A difficulty generated by an apparent contradiction or conflict calls for resolution. Statements that are said to be contradictory might not turn out to be opposed if they are addressed in more nuanced ways.

What of the contradictions that Maimonides himself says should be hidden from the masses? This is not the place to enter into possible solutions, but it is worth distinguishing between a search for Maimonides' true opinion and the attempt to understand how he is using these contradictions. These are two separate issues. My own view is that contradictions need to be taken into account in order to understand Maimonides' biblical and rabbinic exegesis but they are not used to hide heterodox theological or philosophical opinions. One can respect Maimonides' instructions, and be attentive to contradictions, without adopting an anti-philosophical refusal to assume that what appears at first sight to be a contradiction cannot be resolved. Readers should not assume unquestioningly that a difficulty would have been understood as a contradiction by a medieval author. Furthermore, if the purpose of Maimonides' contradictions is connected with interpretations of the Hebrew Bible, there is no need to generalize the methodology to include other Arabic philosophers who did not belong to the rabbinic tradition.

Bibliography

- Abravanel, Isaac. *New Heavens*. Rödelheim, 1828.
- Alpina, Tommaso. "Is the Heaven an Animal? Avicenna's Celestial Psychology between Cosmology and Biology." In *Cosmology and Biology in Ancient Philosophy: From Thales to Avicenna*, edited by Ricardo Salles, 261–278. Cambridge: Cambridge University Press, 2021.
- Cohen Skalli, Cedric. *Don Isaac Abravanel*. Jerusalem: Zalman Shazar, 2017.
- Davidson, Herbert. *Moses Maimonides: The Man and His Works*. New York: OUP, 2005.
- Elior, Ofer, "Isaac Abravanel's Rejection of Corporeal Form," *Aleph* 12 (2012): 367–402.
- Endress, Gerhard. "Averroes' De Caelo, Ibn Rushd's Cosmology in His Commentaries on Aristotle's On the Heavens." *Arabic Sciences and Philosophy* 5 (1995): 9–49.
- Feldman, Seymour. *Philosophy in a Time of Crisis; Don Isaac Abravanel: Defender of the Faith*. London: RoutledgeCurzon, 2003.
- Gutas, Dimitri, "The Study of Arabic Philosophy in the Twentieth Century: An Essay on the Historiography of Arabic Philosophy," *British Journal of Middle Eastern Studies*, 29 (2002): 5–25.
- Harvey, Steven, "On the Nature and Extent of Jewish Averroism: Renan's *Averroés et l'averroïsme* Revisited," *JQR* 7 (2000): 100–119.
- Harvey, Warren Zev, "Maimonides' Critique of Anthropocentrism and Teleology." In *Maimonides' Guide of the Perplexed: A Critical Guide*, edited by Daniel Frank and Aaron Segal, 209–222. Cambridge: CUP, 2021.
- Janos, Damien. "Moving the Orbs: Astronomy, Physics, and Metaphysics, and the Problem of Celestial Motion According to Ibn Sinā." *Arabic Sciences and Philosophy* 21 (2011): 165–214.
- Kraemer, Joel L., "The Medieval Arabic Enlightenment," in *The Cambridge Companion to Leo Strauss*, edited by Steven B. Smith, 137–170. New York: CUP, 2009.
- Lawee, Eric. *Isaac Abarbanel's Stance Toward Tradition*. Albany: SUNY Press, 2001.
- Ravitsky, Aviezer, "The Secrets of the *Guide to the Perplexed*: Between the Thirteenth and Twentieth Centuries." In *Studies in Maimonides*, edited by Isadore Twersky, 159–207. Cambridge, Mass.: HUP, 1990.
- Maimonides. *Dalālat al-Ḥā'irīn*, edited by Salomon Munk and Issachar Joel. Jerusalem: Azrieli, 1929.
- Maimonides, *The Guide of the Perplexed*, translated with an Introduction and Notes by Shlomo Pines. Chicago: The University of Chicago Press, 1963.
- Reines, Alvin. *Maimonides and Abarbanel on Prophecy*. Cincinnati: HUC Press, 1970.
- Strauss, Leo. *Persecution and the Art of Writing*. Chicago: The University of Chicago Press, 1980.
- Wirmer, David, "The World and the Eye: Perplexity about Ends in the *Guide of the Perplexed* iii.13 and iii.25." In *Interpreting Maimonides*, edited by Charles H. Manekin and Daniel Davies, 171–189. Cambridge: CUP, 2019.

As-Suhrawardī's Stance on Modalities and the Logic of Presence

Shahid Rahman and Alioune Seck

1 Introduction

Despite the fact that it has been over 40 years since Henry Corbin and Hossein Ziai highlighted the significance of the work of Shihāb ad-Dīn as-Suhrawardī (549/1155–587/1191), the father of the school of illumination known as al-Ishrāq, a comprehensive examination of his work is only just beginning.¹

One of the main difficulties for interpreting his work is that as-Suhrawardī's writings often develop deep and innovative thoughts that intertwine studies in logic, epistemology and metaphysics with a sharp criticism of the *Peripateticians* but also with Sufi mysticism.²

- 1 Still, there are now reliable editions, translations and some very recent studies of his work. Among others, Shihāb ad-Dīn as-Suhrawardī, *Œuvres Philosophiques et Mystiques (Tomes I et II)*, ed. Henry Corbin (Tehran: Institut d'Études et des Recherches Culturelles, 1951 and 2001) and *The Philosophy of Illumination: A New Critical Edition of the Text of Hikmat al-ishrāq with English Translation, Notes, Commentary, and Introduction*, ed. by Hossein Ziai and John Walbridge (Provo: Brigham Young University Press, 1999); Hossein Ziai, *Knowledge and Illumination: A Study of Suhrawardī's Hikmat al-Ishrāq* (Atlanta: Scholars Press, 1990); John Walbridge, *The Leaven of the Ancients: Suhrawardī and the Heritage of the Greeks* (Albany: SUNY Press, 1999) and *The Wisdom of the Mystic East: Suhrawardī and Platonic Orientalism* (Albany: SUNY Press, 2001) and Mehdi Amin Razavi, *Suhrawardī and the School of Illumination* (New York: Routledge, 1997/2013). The most recent include: T. Street, "Suhrawardī on Modal Syllogism," in *Islamic Thought in the Middle Ages: Studies in Text, Transmission and Translation, in Honour of Hans Daiber*, ed. by Anna Akasoy and Wim Raven (Leiden and Boston: Brill, 2008), 163–178; Seyed N. Mousavian, "Did Suhrawardī Believe in Innate Ideas as A Priori Concepts? A Note," *Philosophy East and West* 64, no. 2 (2014): 473–480; John Walbridge, "Suhrawardī's *Intimations of the Tablet and the Throne: The Relationship of Illuminationism and the Peripatetic Philosophy*," in *The Oxford Handbook of Islamic Philosophy*, ed. by Khaled El-Rouayhed and Sabine Schmidtke, (Oxford: Oxford University Press, 2017), 255–277; Roxane Marcotte, "Suhrawardī," in *Stanford Encyclopedia of Philosophy*, ed. by Edward N. Zalta (2019), <https://plato.stanford.edu/entries/suhrawardī/>; Jari Kaukua, *Suhrawardī's Illuminationism* (Leiden: Brill, 2022) and Tianyi Zhang, *A Philosophical Enquiry into the Nature of Suhrawardī's Illuminationist Philosophy: Light in the Cave* (Leiden: Brill, 2023).
- 2 It has often been pointed out that it is not clear who the philosophers as-Suhrawardī calls *Peripateticians* are—cf. Robert Wisnovsky, "Essence and Existence in the Eleventh- and Twelfth-

The objective of this paper is to contribute to a more unified interpretation of as-Suhrawardī's thought, although the focus is primarily on the development of the elements of his modal logic initiated by Tony Street.³ In more precise terms, we will do so by examining three crucial points as-Suhrawardī explicitly makes concerning the meaning of modalities. These are:

- (1) Modalities are to be understood as the different ways a predicate temporally relates to its subject.
- (2) Proving that a necessarily contingent relation holds requires relating every presence of the subject term—i.e. every instance of the subject—with a capacity or potentiality (neither necessarily nor impossibly actualised), expressed by the predicate.
- (3) The dependence of presences witnessing the actualisation of the predicate term upon those of the subject term constitutes the foundation of as-Suhrawardī's logic.

With regard to (1), temporality is indeed an essential element of the meaning of as-Suhrawardī's concept of modality. However, the temporalisation of a proposition such as *Humans laugh* should not be understood as the propositional function (*Sometimes*) *Humans-laugh(t)*, defined over the set *T* of moments. According to our interpretation, instances or presences, rather than the propositions they verify, are temporalised. In other words, the proposition *Humans laugh* is made true by temporalised tokens of the type of action expressed by that proposition, namely, the presence of singular acts of laughter.

With regard to points (2) and (3), it is noteworthy that as-Suhrawardī's proof-methods for modalities and the notion of existence as presence, as outlined in Ḥikmat al-Ishrāq, are developed in his discourse on fallacies (*mughālaṭa*). These proof methods are of a semantic nature, or, more accurately, dialectical, rather than syntactical. In fact, they follow the dialectical interpretation of the universal quantifier, whereby the challenger tests the assertion by looking for a counterexample. This brings to mind Griffel's perceptive observation that the union of discursive (*baḥthī*) and taste/intuition (*dhawqī*) philosophy—explicitly mentioned in the introduction of Ḥikmat al-Ishrāq, section 5, 3—yields a novel epistemology that grounds as-Suhrawardī's innovations.⁴

Century Islamic East (*Mašriq*): A Sketch," in *The Arabic, Hebrew and Latin Reception of Ibn Sīnā's Metaphysics*, ed. by Dag Nikolaus Hasse, and Amos Bertolacci (Berlin: Walter de Gruyter, 2011), 27–50.

3 See Tony Street, "Suhrawardī on Modal Syllogism". See also Zia Movahed, "Suhrawardī's Modal Syllogisms," *Sophia Perennis* 2, no. 4 (2012): 5–17; who follows the general lines of Street's interpretation—namely the embedding of a *de re* necessary or contingent modality in a *de dicto* necessary modality.

4 Cf. Griffel, *The Formation of Post-Classical Philosophy in Islam*, (Oxford: Oxford University Press, 2022), 263.

Moreover, it also reminds us of the fact that as-Suhrawardī's work was developed during the period when the *logical turn of dialectic* was taking place, during which the twelfth-century-CE eastern school of Raḍī ad-Dīn an-Nisābūrī (d. 544/1149) students, especially Rukn ad-Dīn al-'Amīdī (d. 615/1218), and others promoted the fusion of logic and dialectic theory.⁵

2 Knowledge is about General Affirmative Laws

The central notion in as-Suhrawardī's Illuminationist Logic and Epistemology concerns what he calls the definitely necessary [*aḍ-ḍarūriyya al-batāta*] propositions:

Since the contingency of the contingent, the impossibility of the impossible, and the necessity of the necessary are all necessary, it is better to make the modes of necessity, contingency, and impossibility parts of the predicate so that the proposition will become necessary in all circumstances. You would thus say, "Necessarily all humans are contingently literate, necessarily animals, or impossibility stones." Such a proposition is called the "definitely necessary." [...]. We can make no definitive and final judgment except concerning that which we know necessarily. Even for that which is only true sometimes, we use the definitely necessary proposition. In the case of "breathing at some time," it would be correct to say, "All men necessarily breathe at some time." That men necessarily breathe at some time is always an attribute of man. That they necessarily do not breathe at some time is also a necessary attribute of a man at all times, even at the time when he is breathing. However, this is different from

5 See Walter Edward Young, "The Formal Evolution of Islamic Juridical Dialectic: A Brief Glimpse," in *New Developments in Legal Reasoning and Logic: From Ancient Law to Modern Legal Systems*, ed. by Shahid Rahman, Matthias Armgardt, and Hans Christian Nordtveit Kvernenes (Cham: Springer, 2021), 83–114, *On the Protocols for Dialectical Inquiry (Ādāb al-Baḥṭh): A Critical Edition and Parallel Translation of the Sharḥ al-Risāla al-Samarqandīyya by Qaṭṭ al-Dīn al-Kilānī (fl. ca. 830/1427), Prefaced by a Critical Edition and Parallel Translation of its Grundtext: the Risāla fī Ādāb al-Baḥṭh by Shams al-Dīn al-Samarqandī (d. 722/1322)*, forthcoming, "On the Logical Machinery of Post-Classical Dialectic: The *Kitāb 'Ayn al-Nazar* of Shams al-Dīn al-Samarqandī (d. 722/1322)," *Methodos* 22 (2022), <https://journals.openedition.org/methodos/8605>. See too Shahid Rahman and Walter Edward Young, "Argumentation and Arabic Philosophy of Language: Introduction," *Methodos* 22 (2022), <https://journals.openedition.org/methodos/8833>.

literacy. While literacy is necessarily contingent, it is not necessary that it be actualised at some time.⁶

More generally, since according to as-Suhrawardī the main aim of science is to achieve certainty, we should prioritise

- the positive over the negative quality of judgments, and
- judgments with a universal quantity over an existential one:⁷

This leads as-Suhrawardī to:

- articulate negatives as affirmative assertions with a negation on the predicate—e.g. *Every Human is not-stone*, instead of *No Human is stone*,⁸ and
- convert particulars and existentials into universals—a proposition with a singular term such as *Zayd is literate* is called a *particular proposition*.⁹

Thus, metathetic (i.e. transposed) negations (*ma'dūla*) count as affirmations. Affirmations attribute a predicate to something, be it mental (like numbers) or extra mental (spatio-temporal entities), whereas *de dicto* negations do not.¹⁰

As-Suhrawardī extends this analysis to some problematic cases such as *Not every human is literate*. This is clearly a *de dicto* negation and is certainly not equivalent to *Every human is not-literate*. As-Suhrawardī's solution is to extract from *Not every human is literate*, the subset of those men that do satisfy the attribute.

If you say, “Not all human is literate,” then you may be able to say, “Some human is literate,” since the negation only applies to the part.¹¹

This reading is quite close to some uses in vernacular language, such as when, in saying *Not all people are literate*, the speaker also wants to convey that some are not, but some are, and perhaps even most of them are literate.¹²

In relation to particular propositions, our author posits that particular propositions, existential propositions, and universal propositions collectively deter-

6 As-Suhrawardī, *The Philosophy of Illumination*, 18.

7 Cf. As-Suhrawardī, *The Philosophy of Illumination*, 14–15. Kaukua, *Suhrawardī's Illuminationism*, 35–45, provides a lucid discussion of these priorities, though with a slightly different focus than ours.

8 Cf. As-Suhrawardī, *The Philosophy of Illumination*, 21–22.

9 Cf. As-Suhrawardī, *The Philosophy of Illumination*, 14.

10 Here As-Suhrawardī follows Ibn Sinā—cf. Yusuf Daşdemir, “The Problem of Existential Import in Metathetic Propositions: Qutb al-Din al-Tahtani contra Fakhr al-Din al-Razi,” *Nazariyat* 5, no. 2 (2019): 84.

11 As-Suhrawardī, *The Philosophy of Illumination*, 16.

12 Grice would identify them as a kind of *implicatures*.

mine a scale of increasing epistemic value. The highest value is attributed to those propositions that form a perfect syllogism in *Barbara*.¹³ So we should always seek to transform particulars into existentials and existentials into universals. The main idea is that given a proposition involving a singular term, we first apply existential generalisation, and then, in order to produce a perfect syllogism, we quantify universally over the separated subset defined by the existential—the latter process can be described as a reduction based on a generalised form of *ecthesis*. Thus,

(a) particulars are to be quantified into existentials:

Zayd is rational

Something is rational

(b) quantify universally over the separated subset defined by the existential—i.e., quantify universally over the disjoint union of the family of sets formed by the existential. In other words, the existential claim *Something is rational* implies that we can specify a set in such a way that all the elements of that set are rational. If we take it that the domain of quantification is animals, the existential claim specifies the set of all those animals that are rational beings:

{All those animals that are rational beings}

Now, as-Suhrawardī suggests, we might call such a set *D*. Moreover, we might substitute *rational* with a co-extensional predicate such as *human*:

$D := \{\text{All those animals that are humans}\}$

This permits us to assert the universal *Every d in D is rational*.

¹³ Recall that Arabic logicians changed the order of premises and placed the subject before the predicate. This, of course, does not change the validity of the moods involved but it does not coincide with the Latin medieval denominations of the valid forms of each figure—cf. Tony Street, “An Outline of Avicenna’s Syllogistic,” *Archiv für Geschichte der Philosophie* 84, no. 2 (2002): 129–160, and “Avicenna on Syllogism,” in *Interpreting Avicenna: Critical Essay*, ed. by Peter Adamson (Cambridge: Cambridge University Press, 2013), 48–70.

Such a way of producing a universal out of an existential provides a method of reduction to *Barbara* when one of the premises is an existential. In fact, take as-Suhrawardī's own example of a syllogism of the first figure in *Darii*:

Some animals are rational (beings)
All rational beings have the capacity of laughing

Whereby *D* is the set of all those animals that are humans. So

Every d in D is rational, becomes
Every (animal that is) human is rational.

Clearly, the capacity of laughing can be predicated of whatever arbitrary presence *d* of human. This verifies the syllogism in *Barbara*

All (those animals that are) humans are rational (beings)
All rational beings have the capacity of laughing

All (those animals that are) humans have the capacity of laughing

and it also verifies by sub-alternation the conclusion of the syllogism in *Darii*

Some animals, namely (all) those that are humans, have the capacity of laughing

The procedure indicates how to specify the subject term in the conclusion of the original *Darii* in order to reduce the *uncertainty* expressed by the existential.

Note that any specification of animals will do the job, provided that the middle term, i.e. being rational, can be predicated of any of the elements of that specification, such as animals that read, or that are musicians, etc. This certainly reduces the "uncertainty" expressed in the inference of the particular.¹⁴

Note also that the main step in this reduction of form can be seen as the application of a generalised form of ecthesis. Indeed, let us recall that ecthesis is a method of proof in which a witness is used to represent a notion. For example, if *A* is some *B*, then there is something, let us call it *D*, of which both *A* and

¹⁴ As indicated by Zoe McConaughy in a personal email to S. Rahman, this is close to Aristotle's method of *inventing a term which applies to all things of a certain kind* in the *Topics*, VIII 2 157a23–26.

B can be predicated. In fact, there are two possible interpretations of ecthesis, one based on identifying *D* with an arbitrary individual, the other based on understanding *D* as a general term—the latter follows from what is known as the *heterodox* reading of the *dictum de omni*.¹⁵ As-Suhrawardī's text seems to combine both: *D* stands for a specification of the set underlying the original existential—the disjoint subset *D* of all those *A* that are *B*—, and it also stands for some element *d* of the disjoint subset (when *D* stands for an element of that subset, as-Suhrawardī speaks of some *particular D*).¹⁶ However, as Jari Kaukua has observed, a particular *D*, represented by the letter *d* in our notation, is always experienced as an arbitrary instance of a universal, despite this not being initially articulated as such.¹⁷ Summing up such a form of ecthesis allows the production of universal propositions such as *All d in D are C*, where *D* is a disjoint subset formed by some given existential.

3 Toward a Logic of Presence

3.1 *Modal Relations, Dispositions and Acquired Capacities*

(19) The relation of the predicate of a categorical proposition to its subject either must exist (in which case it is called “the necessary”) or must not exist (“the impossible”) or may either exist or not exist (“the possible” or “the contingent”). An example of the first is “Man is animal”, of the second, “Man is stone”, and of the third, “Man is literate.” [...]. The contingent is necessary by virtue of that which necessitates it and is impossible on condition of the nonexistence of that which necessitates its existence.

15 Cf. Marko Malink, *Aristotle's Modal Syllogistic* (Cambridge Mass.: Harvard University Press, 2013), chapters 4 and 6.

Tony Street develops a thorough discussion of the uses of ecthesis (*iftirāḍ*) in Ibn Sīnā in his paper “An Outline of Avicenna's Syllogistic”. For a discussion on this ambiguity see Michel Crubellier, Zoé McConaughy, Mathieu Marion, and Shahid Rahman, “Dialectic, The Dictum de Omni and Ecthesis,” *History and Philosophy of Logic* 40, no. 3 (2019): 207–233.

16 [...] for example, “Some animals are rational,” and “All rational beings are capable of laughter.” Let us give a name to the particular without considering the predication of rationality, though rationality accompanies the particular. Let this be *D*. Thus, it can be said, “All *D* are rational, and all rational beings are so-and-so,” according to what we said before. as-Suhrawardī, *The Philosophy of Illumination*, 22.

17 Cf. Jari Kaukua, “Suhrawardī's Knowledge as Presence in Context,” *Studia Orientalia* 114 (2013): 309–324.

When one examines the thing itself in the two states of existence and nonexistence, it is contingent.

[...]

Further, when you say, "All things that move necessarily change," you should know that each and every thing described as moving is not necessarily changing because of its own essence, but because it is moving. Thus, its necessity depends on a condition and *it* is contingent in itself. By "necessary," we mean only that which it has by virtue of its own essence. That which is necessary on condition of a time or state is contingent in itself.¹⁸

(23) Conversion is making the entire subject of the proposition the predicate and the predicate the subject while keeping the quality and the truth or falsity of the proposition the same. You know that when you say, "All men are animals," you cannot say, "and all animals are men." The same is true in every proposition whose subject is more specific than its predicate [...]. Then we say, "Necessarily all men are contingently literate," its converse will be "Necessarily something that is contingently literate is a man." The other modes besides contingency also move with the predicate when it is converted. The converse of the necessary definite affirmative proposition is itself a necessary definite affirmative proposition, whatever the mode may be.

If the contingency is part of the predicate of the definite necessary proposition and the negation is with the predicate, the negation will also be moved in conversion, as in the statement "Necessarily all men are contingently nonliterate." Its converse will be the definite affirmative: "Necessarily something that is contingently nonliterate is a man."¹⁹

Thus,

- a *necessarily necessary relation* attributes *actual instances/presences* of the predicate to every presence of the subject, and this relation either admits **simple conversion**, if there is simple conversion between presences of the subject and presences of the predicate—such as when actual instances of *rational animal* are related to actual instances of *human*, then this corresponds to the notion of *definition* of Peripatetics—whereby the predicate expresses the definition of the subject; or

¹⁸ As-Suhrawardī, *The Philosophy of Illumination*, 16.

¹⁹ As-Suhrawardī, *The Philosophy of Illumination*, 19–20.

does not admit **simple conversion**—such as when actual instances of *animal* are related to actual instances of *human*, then this corresponds to the notion of *genus* of the Peripatetics—whereby the predicate expresses the genus of the subject.

- If indeed each presence of the subject **necessarily** bears the **actualised** attribute, then, and only then, the **relation of necessarily necessary exists**.²⁰ Contingency, however, is subtler. Universally quantified predications of contingency admit both
- **the conversion of the subalternate**, e.g. from *Necessarily all men are contingently literate* obtain the converse subalternate *Necessarily some contingently literate are men*, and
- **and the simple conversion of the universal**, provided *the subject is not more specific than the predicate* or more precisely when it is *co-extensive* with the predicate—e.g. *Necessarily all men are contingently literate* admits the simple conversion *Necessarily all contingently literate are men*, but *Necessarily all men contingently breathe at some time* does not admit simple conversion.

Moreover, as mentioned above, since as-Suhrawardī gives epistemic priority to universal apodictic assertions, he calls them ***definitely necessary propositions***; contingency assertions should be embedded in propositions within a universal (i.e., necessary) modality. It should be noted that as-Suhrawardī's approach excludes purely accidental attributes. According to his view, in order to achieve knowledge, we should focus on each attribute that the subject bears because of its essence, rather than because the subject is momentarily bearing another contingent attribute. Therefore, Ibn Sīnā's form of assertions, such as *Every human writing is moving while writing*, falls outside the scope of the epistemological aims as-Suhrawardī sets for the logic of *Illumination*.²¹

Thus, a *necessarily contingent relation* attributes capacities or potentialities to every presence of the subject. Here again the relation of necessary contin-

20 It might be argued that the second occurrence of the necessity modality has a different meaning from the first: whereas the first occurrence indicates that the subject bears the predicate because of the essence of the subject, the second is about the actualisation of the attributed predicate. Now essential attributes are always actualised, so if the attributed predicate is entailed by the essence of the subject, then that predicate must be actualised. This point, as we shall discuss in the following pages, relates to the embedding of a contingency within the scope of a necessity.

21 This has been already pointed out by Tony Street in his paper "Suhrawardī on Modal Syllogism," 167.

gency **exists** iff each instance of the subject **necessarily** bears the attribute but is **not necessarily actualised**.²² Such potentialities can be grouped as follows:

- (i) Potentialities that are actualised in each instance of the subject, but not in all instances. For example, Zayd laughing at 12 o'clock is a potentiality that is actualised in this instance, but not in the instance of Zayd laughing at 12.30. Similarly, Zayd's breathing is not a potentiality that is actualised in all instances, but rather in some instances. This group can be seen as referring to dispositions, which are natural capacities that are not acquired. While the distinction between dispositions and acquired capacities is not explicitly stated in as-Suhrawardī's texts, the examples presented strongly suggest the existence of such a category.
- (ii) Potentialities that do not necessitate the actualisation of this potentiality in a specific instance of a subject, despite the potentiality being actualised in another instance of that subject, such as literacy, which may never be actualised in Zayd but is actualised in the poet Imru' al-Qays (this distinction is not explicitly stated by as-Suhrawadī either). This form of contingency allows for generic Plenitude. Here, we are dealing with acquired capacities rather than with dispositions.

The way a contingent attribute actualises appears to depend on the category to which it belongs. Indeed,

- Dispositions enjoy *individual Plenitude*—we might also call it *de re* Plenitude, since they must be actualised at least once **for each individual** instantiating the subject.
- Acquired capacities are, in principle, necessarily contingent on humanity as a whole, not on each individual. For instance, literacy is a human capacity

22 Kaukua, *Suhrawardī's Illuminism*, 53, endorses Walbridge's remark that contingency is more about ontological dependence than about realisation of potentialities. Cf. Walbridge, *The Leaven of the Ancients*, 153. We agree with the point that ontological dependence is the main feature of attributions of *bare* or accidental contingency. However, note that the ontological dependence of the predicate on the subject accounts for the distinction between (bare) necessity and (bare) contingency, but it fails to elucidate the notion of necessary contingency and how the latter can be distinguished from a necessarily necessary relation. Necessarily necessary relations are distinguished from necessarily contingent ones since the former, but not the latter, require the attributed predicate to be actualised by each instance of the subject.

because there is at least one person who is literate, and it is also contingent because there is at least one person who is not. So we might speak here of *generic Plenitude*.

- Plenitude involving acquired capacities may also take a weak form of actualisation, either hypothetical or counterfactual, and this may apply both generically and individually.

As stated in the quoted text (in fact one among many other texts), as-Suhrawardī's modalities do not require the development of a logic that appeals to contemporary possible-world frameworks. Syntactically, as-Suhrawardī's modalities are relations between terms in a syllogism, rather than propositional monadic connectives. Semantically, the modality of contingency requires the satisfaction of either a strong form of Plenitude, which involves producing presences that actualise (at least once) the contingent attribute, or a weak form of Plenitude, which involves presences in a possible course of events rather than possible worlds. Furthermore, it is important to note that since no contingent property can ever be an essential one, the possibility involved is a two-sided possibility.

Clearly, as-Suhrawardī's classification of the ways a predicate relates to its subject echoes the Aristotelian theory of four Predicables developed in the *Topics* (Top. A 4 101b15–19)),²³ namely *genus definition*, *proprium* or *accident*. As-Suhrawardī repeats this point in several parts of *Ḥikmat al-Ishrāq*, particularly so when he has to elucidate his view on syllogisms.

However, a word of caution is due: we are not claiming that there is evidence that as-Suhrawardī ever read or had direct access to the *Topics*. Nevertheless, whatever the ways he came to know the theory of Predicables, it definitely influenced his own perspective on modalities.

3.2 *On Iteration and Simple Conversion*

Usually, those who, against the background of the theory of predicables, understand modalities as affecting the copula rather than as monadic propositional operators reject iteration.²⁴

Awkwardly, Ziai claims that as-Suhrawardī's modal logic is essentially a propositional S5 logic without iteration—or with an iteration that only occurs

23 Our references to texts by Aristotle are based on Aristotle, *The Works of Aristotle Translated into English*, ed. by William David Ross (Oxford: Clarendon Press, 1966).

24 Cf. Marko Malink, "A Reconstruction of Aristotle's Modal Syllogistic," *History and Philosophy of Logic* 27, no. 2 (2006): 96–97. See too Marko Malink, *Aristotle's Modal Syllogistic* (Cambridge Mass.: Harvard University Press, 2013), 13–17.

at the level of the surface grammar.²⁵ Street contests Ziai’s claim and rightly so.²⁶ Indeed, as-Suhrawardī explicitly writes

(21) Since the contingency of the contingent, the impossibility of the impossible, and the necessity of the necessary are all necessary, it is better to make the modes of necessity, contingency, and impossibility parts of the predicate so that the proposition will become necessary in all circumstances. You would thus say, “Necessarily all humans are contingently literate, necessarily animals, or impossibily stones.” Such a proposition is called the “definitely necessary”.²⁷

If we distinguish the relations *Necessity by definition*, *Necessity by genus*, *Necessity by proprium*, and *Necessary accidens* as autonomous primitive relations, the following table results:

Not iterated Aristotelian modalities as predicables	as-Suhrawardī’s iterated modalities
L_{δ} (δ , definition)	LL (necessarily necessary relation admitting simple conversion)
L_{γ} (γ , genus)	LL (necessarily necessary relation NOT admitting simple conversion)
M_{π} (π , proprium)	LM (necessarily contingent relation admitting simple conversion)
M_{α} (α , accident)	LM (necessarily contingent relation NOT admitting simple conversion)

The second occurrence of L in LL stands for non-contingent predication—i.e. LL stands for actual presences of the predicate for each actual presence of the subject. No other kinds of iteration seem to be suitable in such a framework.

25 Cf. Ziai, *Knowledge and Illumination*, 70.
26 Street, “Suhrawardī on Modal Syllogism,” (2008), 169. This is corrected by Walbridge and Ziai in Suhrawardī, *The Philosophy of Illumination*, 17, note 20.
27 As-Suhrawardī, *The Philosophy of Illumination*, 18.

3.3 *Dialectical Meaning Explanations*

3.3.1 As-Suhrawardī's Meaning Explanations of Modalities

The meaning explanations of as-Suhrawardī's modal relations are contained in the following short but quite insightful text occurring in the third discourse consecrated to the study of fallacies:

(48) Know that the universality of a rule stating that something is predicated of something else is disproved by a single instance where that second thing is absent. The universality of a law stating the impossibility of something being predicated of something else is proven by the existence of that thing in a single case. Thus, if someone asserts that every C is necessarily B but finds a single C that is not B, then the universality of the rule is disproved. Likewise, if someone asserts that it is impossible for any C to be B but then finds a single C which is B, then the law will be disproved. However, if someone asserts that any C may be B, this is disproved by neither the existence nor the absence of instances. Thus, should someone claim that some universal is contingently true of another universal—for example, asserting the “B-ness” of C—then **he need find** only a single instance that is B and another that is not B in order to show that the universal B is not impossible in the nature C (since otherwise no individual C could be described as being B) and that [B] is not necessary [in C] (since in that case no individual C could fail to be B).²⁸

Saleh Zarepour, in an email to Rahman, rightly pointed out that in the Arabic source of the quoted text it is indicated that for someone who wants to prove a necessary contingency it is **sufficient** (كفاية) *to find one particular [instance of C] that is B and another particular [instance of C] that is not*, rather than that (s)he **needs** to find such instances, as in Ziai and Walbridge's translation above.

Zarepour's point is an Avicennean one: if contingency amounts to **necessarily** finding at least one instance where the potentiality is realised (and one where it is not), then this seems to lead to a strong form of Plenitude: anything possible must be realised once. Ibn Sīnā's take on Plenitude is a weaker one: what is required is that such an instance is *conceivable*.²⁹

Nevertheless, it is difficult to decide if as-Suhrawardī does or does not endorse a weak form of Plenitude: on one hand the insistence on *presence* seems

28 As-Suhrawardī, *The Philosophy of Illumination*, 38.

29 This has been admirably discussed by Griffel in his book *Al-Ghazali's Philosophical Theology* (Oxford: Oxford University Press, 2009), 167–170.

to be more ontologically committed than *mere presence in the mind*, while on the other, there are texts that suggest counterfactual or hypothetical presence, such as in the case of mixed syllogisms.³⁰ The form of Plenitude that a contingent attribute takes appears to depend on the type of potentiality in question—is it a natural or acquired potentiality? We will come back to this issue further on in our text.

As-Suhrawardī's text on the rules for justifying assertions involving modalities adheres to the so-called dialectical no-counterexample interpretation of the quantifiers. This is achieved by means of a set of rules that govern the search for a counterexample. In such a context, to grasp the meaning of a proposition involved in an assertion amounts to knowing two key things:

- (a) what requests or challenges will be granted to the antagonist by that assertion
- (b) what commitments (i.e. defences) the assertion entails

This is the meaning of the expression *dialectical meaning explanation*. The dialectical approach constitutes the background against which we reconstruct as-Suhrawardī's logic and theory of syllogism.

The text also clearly sets out the main features of the dialogical meaning explanations of modalities. In a nutshell

- The dialectical meaning of the two universals, necessity and impossibility, requires the challenger to identify an instance of the subject to which (s)he claims the predicate cannot be attributed (or can be attributed in the case of impossibility). The defender must then assert, to the contrary, that the predicate can (or cannot) be attributed for any arbitrary presence the challenger might produce.
- The dialectical meaning of a contingent attribute requires the challenger to ask the defender to identify a second instance for each subject instance. One member of the pair should actualise the attribute (hypothetically or counterfactually, if we permit cases of weak Plenitude), while the other does not—e.g. Zaynab sometimes reads and Meriem never does. Note that in the case of dispositions, both members of the pair of instances of the subject can be the same. However, in this case, the attribution of the predicate is temporally indexed with different moments—e.g. Zaynab laughs at moment t_i and Zaynab does not laugh at t_k .

As previously stated, as-Suhrawardī's principal contribution to modal logic is the explicit role that presences play in his logic, which is shaped by the logical development of dialectical theory during his time. The notions of modalities

30 Shihāb ad-Dīn as-Suhrawardī, *Manṭiq at-Tabwīḥāt*, ed. by A.A. Fayyāḍī (Tehran: Tehran University Press, 1955), 35–36.

in the aforementioned text demonstrate the fruitfulness of the intertwining of dialectic and logic. However, as-Suhrawardī did not develop this approach to logic into a systematic dialogical framework. This task will be carried out by us. In order to achieve this, we will utilise the dialogical theory known as *Immanent Reasoning*, which incorporates verifiers of propositions into the rules of dialogical/dialectical meaning explanations of logical constants.³¹ On the one hand, the verifiers of a proposition can be interpreted as either presences or instances, as used in the logic of *Hikmat al-Ishrāq*. On the other, as-Suhrawardī's dialectical rules for determining the meaning of modalities suggest a novel approach to developing modal and temporal logic.

In order to develop our reconstruction, we will begin by providing dialogical explanations of the meaning of non-modalised universal and existential quantifiers, with particular emphasis on the role that as-Suhrawardī assigns to presences. We will then proceed to add modalities that satisfy both strong and weak forms of Plenitude, and we will conclude by demonstrating how this closely resembles as-Suhrawardī's view of modal syllogism.

3.3.2 Dialectical Meaning Explanations of Non-Modal Universals and Existentials

In order to elucidate the role of presence in the constitution of dialectical meaning, it is first necessary to focus on non-modal propositions. Despite the fact that the analysis makes use of the formal languages of *Immanent Reasoning* and Aarne Ranta's *Type Theoretical Grammar*,³² a vernacular version will also be provided. Furthermore, instead of burdening the notation from the outset, the logical form will be unfolded during the interaction—a process known as *dynamic encoding*.

3.3.2.1 *Meaning Constitution and the Experience of Presence*

The initial semantic level, upon which all subsequent levels depend, concerns the establishment of links between concepts. This level does not directly render a proposition; rather, it concerns the semantics conditions out of which a proposition is obtained. For example, the conceptual link between the concepts of *Knowing Being* and *Living Being* is to be understood as follows:

31 Cf. Shahid Rahman, Zoé McConaughy, Ansten Klev, and Nicolas Clerbout, *Immanent Reasoning or Equality in Action: A Plaidoyer for the Play Level* (Cham: Springer, 2018). See also Nicolas Clerbout and Zoé McConaughy, "Dialogical Logic," in *Stanford Encyclopedia of Philosophy*, ed. by Edward N. Zalta (2022), <https://plato.stanford.edu/entries/logic-dialogical/>.

32 Cf. Aarne Ranta, *Type Theoretical Grammar* (Oxford: Oxford University Press, 1994).

for any instance (presence) of “Knowing Being,” an instance of “Living Being” can be obtained by a semantic process that renders instances of the latter out of instances of the former.

If we employ Ranta’s *Type Theoretical Grammar*, we obtain the following:

Linear notation	Vertical notation
$Living\ Being[x]:prop\ (x \in Knowing\ Being)$	$(x \in Knowing\ Being)$
	...
	$Living\ Being[x] \in prop$

At a further level of analysis, this can be interpreted as a propositional implication or a universal quantification, such as:

If it is knowing, then it is living, or also
Every knowing being is a living being.

The connective/quantifier level presupposes the semantic level. Only when we understand the dependency between concepts can we render the corresponding logical connective or quantifier. Our analysis indicates that this is one of the most distinctive features of the Epistemology of Illumination. It can be described as follows:

The proposition *Everything knowing is living* presupposes that every presence of a knowing being has been experienced as associated with the presence of a living one.

This association can be expressed formally as a function *b*, which takes as input the presence of the antecedent and yields the presence of the consequent.

Linear notation	Vertical notation
$b(x): Living\ Being[x] \in prop\ (x \in Knowing\ Being)$	$(x \in Knowing\ Being)$
	...
	$b(x) \in Living\ Being[x] \in prop$

If we delineate the various levels of abstraction from the elementary proposition to the universal quantifier as a sequence of inferences, we arrive at the following:

$$\begin{array}{l}
 \text{Living Being}(x) \varepsilon \text{ prop } (x \varepsilon \text{ Knowing Being}) \\
 \hline
 b(x) \varepsilon \text{ Living Being}(x) \ (x \varepsilon \text{ Knowing Being}) \\
 \hline
 (\forall x \varepsilon \text{ Knowing Being}) \text{ Living Being}(x) \varepsilon \text{ prop}
 \end{array}$$

This sequence can also be seen as setting out as-Suhrawradī's critique of what he terms the *peripatetic approach to definitions* (and genus). According to the critique, universals expressing definitions already assume that the underlying process of meaning constitution has been established prior to their use. In other words, universals expressing definitions and genus assume the formulation of meaning formation rules that encode knowledge gathered by grasping the dependence or interdependence of the actual instances (presences) of the terms involved.³³

In essence, as-Suhrawardī's epistemological position can be summarised as follows: the capacity to gain knowledge of the universal through direct experience of its instantiation is an inherent aspect of epistemology. Consequently, this should be reflected in the meaning rules that constitute universal propositions. This suggests that formalised meaning explanations for the forms of statements used in as-Suhrawradī's epistemology and logic should include presences, or witnesses of such presences, in the object language.³⁴

3.3.2.2 *Presences and the Dialectical Meaning of Universals and Existentials*

The dialogical interpretation of the universal quantifier is defined by the following conditions: if player X states a universal quantifier, he must be able to associate a suitable presence of the consequent with any arbitrary presence of the antecedent chosen by the challenger Y.

33 Curiously, this seems to echo Ibn Sinā's notions of implicate (*lāzīm*), containment (*taḍammun*) and implication (*iltizām*). See Riccardo Strobino, "Per Se, Inseparability, Containment and Implication: Bridging the Gap between Avicenna's Theory of Demonstration and Logic of the Predicables," *Oriens* 44, no. 3–4 (2016): 181–266.

34 The term "witness of a presence" is used to describe a logical-linguistic construct that is derived through a process of abstraction from the experiences of presence.

Statement	Challenge	Defence
$X! (\forall x \in A) B(x)$	$Y! a \in A$	$X! B(a)$
X states the universal <i>Every A is B</i>	Y chooses an arbitrary presence a of A	X associates a with a presence of $B(a/x)$

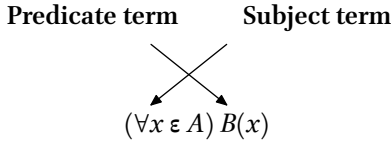
This again presupposes those meaning formation rules encoding the knowledge required for producing universal propositions mentioned above:

Statement	Challenge	Defence
$X! (\forall x \in A) B(x) \in prop$	Challenge1 $Y? \mathcal{L}_F$	Defence1 $X! A \in set/prop$
X states that the uni- versal is a proposition	Y asks for the formation of the left ($\mathcal{L}$) compo- nent of the universal	X responds that it is a set (or proposition not dependent upon another one)
	----- Challenge2 $Y? \mathcal{R}_F$	----- Defence2 $X! B(x) \in prop (x \in A)$
	Y asks for the formation of the right ($\mathcal{R}$) compo- nent of the universal	X responds that $B(x)$ is a proposi- tion dependent upon A

This notation comes close to the analysis of a universal assertion in traditional logic, whereby the predicate term is said to apply to any instance of the subject term:³⁵

35 At the strategic level the Proponent has a winning strategy for a universal iff for *any* presence of the subject the challenger can produce an instance of the predicate for this choice of the Opponent. The way to implement this is to allow the Opponent to always choose a **new** instance. Thus, at the strategic level, the truth of the universal asserted by **P** requires him to be able to associate presences of the subject with presences of the predicate, by means of substituting x in $b(x)$ for any presence of the subject **O** might choose. In other words, the truth of the universal $(\forall x \in A) B(x)$ requires the Proponent

a) to build out of whatever presences of A **O** might choose, a procedure $b(x)$ producing witnesses of $B(a/x)$,



The dialogical meaning explanation for an existential leaves the choice of the presence to the defender:

Statement	Challenge	Defence
$X! (\exists x \in A) B(x)$	Challenge1 $Y? \mathcal{L}^{\exists}$	Defence1 $X! a \in A$
X states the existential <i>Some A is B</i>	Y asks for the left: Which/ Who of the A 's are B ?	X responds that a is one of those A 's
	-----	-----
	Challenge2 $Y?_{a/x: A} \mathcal{R}^{\exists}$	Defence2 $X! B(a)$
	Y asks for the right: Show me that this choice of yours (namely, $a: A$) is indeed a B	X associates the presence of a with a presence of $B(a/x)$

This analysis allows us to conceive the subject term as a restriction of an underlying domain. To illustrate, let us consider the example put forth by Ibn Sīnā:

Some poets are good

This assertion, as Ibn Sīnā has observed, does not support the inference that there is someone, such as Imru' al-Qays, who is both good and a poet.³⁶ What is asserted is that the domain of the subject, namely poets, is restricted by the

b) to build the abstract construct of this procedure, namely $(\lambda x)b(x)$, called the lambda-abstract of $b(x)$. The lambda-abstract indicates that for whatever choice of the Opponent the procedure $b(x)$ can be executed in order to yield an instance of $B(a/x)$ for that choice.

³⁶ Ibn Sīnā, *al-Ishārāt wa-t-Tanbīhāt bi-Sharḥ at-Ṭūsī, al-Manṭiq* [= *Remarks and Admonitions: With Commentary by Tusī*], ed. by S. Dunyā, 3rd ed. (Cairo: Dār al-ma'ārif, 1983 [3rd Ed.]), chapter 10.1, 50. Recall Aristotle's famous example of the *good cobbler* in the *Peri Hermeneias*, x1, 20b35–36 and 21a14–15, and in the *Sophistical Refutations* 20, 177b14–15.

This results in the subject-predicate form of traditional syllogism. Our position is that a rendering of the rules should combine traditional term-notation with explicit use of instances of the quantified expression in the context of the rules that prescribe how to develop the dialectical interaction associated with a quantified assertion. It is only during the development of the argument that instances become apparent. This is particularly relevant in the context of temporality, where temporalised instances only emerge explicitly through the interaction triggered by an assertion of contingency—a process referred to as dynamic encoding.

Reading	Keys
Encoding	
X! ...	agent X claims ...
$_D A$	the set $\{x \in D \mid A(x)\}$

In the first table below, we write three different versions of the initial statements distributed in three columns. The first column expresses the traditional form with a formulation close to natural language. The second column formulates the statement in a more compact (but also vernacular) form. The third column displays explicitly the logical form of the statement. In the second table, we add in each column the challenge of interlocutor Y and the response of defender X.

	Traditional form before interaction	Dynamic encoding before interaction	Explicit dialectical encoding before interaction
Universals	X! Every (<i>D</i> that are) <i>S</i> is <i>P</i>	X! ($\text{Every}_D S$) <i>P</i>	X! ($\forall z \in \{x \in D \mid S(x)\} \ P(\mathcal{L} \ \mathfrak{I}(z)^Y)$)
	X! No (<i>D</i> that are) <i>S</i> is <i>P</i>	X! ($\text{Every}_D S$)no- <i>P</i>	X! ($\forall z \in \{x \in D \mid S(x)\} \ \sim P(\mathcal{L} \ \mathfrak{I}(z)^Y)$)
Particulars	X! Some (<i>D</i> that are) <i>S</i> is <i>P</i>	($\text{Some}_D S$) <i>P</i>	X! ($\exists z \in \{x \in D \mid S(x)\} \ P(\mathcal{L} \ \mathfrak{I}(z)^Y)$)
	X! Some (<i>D</i> that are) <i>S</i> is not <i>P</i>	X! ($\text{Some}_D S$)no- <i>P</i>	X! ($\exists z \in \{x \in D \mid S(x)\} \ \sim P(\mathcal{L} \ \mathfrak{I}(z)^Y)$)

	Traditional form during interaction	Dynamic encoding during interaction	Explicit dialectical encoding during interaction
Universals	A form $X! \text{ Every } (D \text{ that are}) S \text{ is } P$	A form $X! (\text{Every}_D S)P$	A form $X! (\forall z \in \{x \in D \mid S(x)\}) P(\mathcal{L} \mathfrak{I}(z)^Y)$
	Challenge $Y! d_i \text{ (in } D) \text{ is } S,$ is it a P ?	Challenge $Y!_D S(d_i)$ X's response to the challenge must attribute P to the d_i chosen by Y	Challenge $Y!_D S(d_i)$ Given that Y chooses d_i as the left component of z which is one of the D 's that is an S , i.e. given $\mathcal{L} \mathfrak{I}(z)=d_i \in D$
	E form $X! \text{ No } (D \text{ that are}) S \text{ is } P$	E form $X! (\text{Every}_D S)\text{no-}P$	E form $X! (\forall z \in \{x \in D \mid S(x)\}) \sim P(\mathcal{L} \mathfrak{I}(z)^Y)$
	Challenge $Y! d_i \text{ (in } D) \text{ is } S,$ is it a P ?	Challenge $Y!_D S(d_i)$	Challenge $Y!_D S(d_i)$ Given $Y \mathcal{L} \mathfrak{I}(z)=d_i \in D$
Particulars	I form $X! \text{ Some } (D \text{ that are}) S \text{ is } P$	I form $X! (\text{Some}_D S)P$	I form $X! (\exists z \in \{x \in D \mid S(x)\}) P(\mathcal{L} \mathfrak{I}(z)^Y)$
	Challenge $Y \text{ which } D \text{ is } S?$ $Y \text{ is } d_i \text{ (in } D) \text{ a } P?$	Challenge $Y? \mathcal{L} \exists$ $Y? \mathcal{R} \exists$ X's response to the second challenge must attribute P to the d_i he has chosen himself as answer to the first challenge.	Challenge $Y? \mathcal{L} \exists$ $Y? \mathcal{R} \exists$
	O form $X! \text{ Some } (D \text{ that are}) S \text{ is not } P$	O form $X! (\text{Some}_D S)\text{no-}P$	O form $X! (\exists z \in \{x \in D \mid S(x)\}) \sim P(\mathcal{L} \mathfrak{I}(z)^Y)$
	Challenge $Y \text{ which } D \text{ is } S?$ $Y \text{ is } d_i \text{ (in } D) \text{ a } P?$	Challenge $Y? \mathcal{L} \exists$ $Y? \mathcal{R} \exists$	Challenge $Y? \mathcal{L} \exists$ $Y? \mathcal{R} \exists$
	Defence $X! d_i \text{ is } P$	Defence $X! P(d_i)$	Defence $X! P(d_i)$
	Defence $X! d_i \text{ is not } P$	Defence $X! \sim P(d_i)$	Defence $X! \sim P(d_i)$
	Defence $X! d_i \text{ is } S$	Defence $X! S(d_i)$	Defence $X! S(d_i)$
	Defence $X! d_i \text{ is not } P$	Defence $X! \sim P(d_i)$	Defence $X! \sim P(d_i)$

4 The Dialectical Meaning Explanation of as-Suhrawardī's Modal Relations

How to distinguish a modal assertion from a non-modal one? While it is challenging to provide a definitive answer, the following may be applicable:

- Categorical assertions abstract away from the specific modal relationship between the predicate and the subject, however, in mixed syllogisms, where some premises are modal and some are not, the implicit modality must be explicitly stated in accordance with the rules of the figure. We will discuss this further later on. Moreover, quite often, universal categorical assertions are implicitly understood as necessarily necessary ones.

4.1 *The Dialectical Meaning Explanation of the Necessarily Necessary Relation*

With regard to the necessarily necessary relation, let us recall that

	<i>A necessarily necessary relation</i>
	amounts to relating <i>actual instances</i> , i.e. <i>presences/tokens/verifiers</i> of the predicate term to every presence of the subject

1	admits (simple) <i>conversion</i> , if there is simple conversion between presences of the subject and presences of the predicate—this corresponds to the notion of <i>definition</i> of Peripatetics; or
2	does not admit (simple) <i>conversion</i> —this corresponds to the notion of <i>genus</i> of the Peripatetics

If we combine this with our previous considerations, we obtain

$$(\forall z \in \{x \in D \mid A(x)\}) \text{LLB}(\mathcal{L} \mathfrak{B}(z) \text{ true})$$

Assuming

Subject Term	$A[x] \in \text{prop } (x \in D)$
Predicate Term	$B[x] \in \text{prop } (x \in D)$

Notice that, since (i) *it is better to make the modes of necessity, contingency, and impossibility parts of the predicate*,³⁸ and, (ii) as previously discussed, there are

³⁸ as-Suhrawardī, *The Philosophy of Illumination*, 16.

instances where the subject term is also modalised, particularly when it serves as a middle term in a major of a first-figure syllogism, it is desirable to employ a unique encoding system that encompasses both conditions. Our proposed notation does exactly that. Indeed, it allows encodings such as the following, whereby A is related to D by necessary contingency:

$$(\forall z \in \{x \in D \mid \mathbf{LMA}(x)\}) \mathbf{LB}(\mathcal{L} \mathfrak{U}(z))$$

A close examination of as-Suhrawardī's text reveals that the crux of the matter is the manner in which the defender must establish the link between the predicate and the subject, given an instance of the subject that the antagonist claims constitutes a counterexample to the claim of necessity. This leads to the following interpretation of the rules:

Statement	Challenge	Defence
Dynamic encoding	Dynamic encoding	Dynamic encoding
$X! (\text{Every}_D A) \mathbf{LLB}$	$Y! A(d_i)$	$X! B(d_i)$
All D 's that are A are necessarily B by necessity	Y states $A(d_i)$, whereby (s)he chooses d_i as being one of those D 's that are A	X states that d_i witnesses B .
Explicit dialectical encoding	Explicit dialectical encoding	Explicit dialectical encoding
$X! (\forall z \in \{x \in D \mid A(x)\}) \mathbf{LLB}(\mathcal{L} \mathfrak{U}(z)^Y)$	$Y! A(d_i)$ Given: $Y! d_i \in D$	$X b(d_i) \in B(d_i)$
All D 's that are A are necessarily B by necessity—whereby “ $\mathcal{L} \mathfrak{U}(z)^Y$ ” stands for an element of D that is an A and was chosen by the adversary Y .	Y states $A(d_i)$, whereby s(h)e chooses d_i as being one of those components of z in D that are A .	X states that $b(d_i)$ witnesses $B(d_i)$.

We have temporarily set aside two issues for further consideration:

1. The dialogical rules involving the distinction between modalities that admit simple conversion and those that do not.
2. The temporal dimension.

A subsequent section will address the issue of simple conversion in relation to both necessary and necessarily contingent propositions. With regard to the temporal dimension, the explicit occurrence of this concept is of particular relevance in the context of as-Suhrawardī logic, particularly in relation to contingent matters. Indeed, temporality is a condition according to as-Suhrawardī, and thus only concerns the contingent. Necessarily, necessity is always actual in a double sense: it relates actualised presences of the predicate to actualised presences of the subject. Alternatively, as Ibn Sīnā put it, the predicate is true throughout the entirety of the subject's existence. Consequently, if it is assumed that the subject can be instantiated, temporal parameters can be disregarded.

Are there no other iterated modalities that could be considered? In point of fact, this is not the case. Indeed, within the epistemological framework established by as-Suhrawardī, only universals constituted by necessarily necessary relations and universals constituted by necessarily contingent relations can provide certainty. The first group provides necessary actual properties of the subject, while the second group provides necessary potentialities of the subject. Indeed, it seems that when as-Suhrawardī writes a necessity with no second modality under its scope, it is an expression of an implicit second necessity. As he himself states, bare contingency has no scientific value.

4.2 *The Necessarily Contingent Relation*

4.2.1 Time and the Necessarily Contingent

As-Suhrawardī's concept of the contingent is founded upon two principal Aristotelian tenets pertaining to change and time. Firstly, the concept of time is a logical presupposition of the contingent. This implies that if a pair of propositions express two incompatible but contingent attributes of the presence of the same substance—for example, *Zayd walking* and *Zayd sitting*—their truth must be temporally relativised in order to avoid contradiction. Secondly, the experience of the contingent constitutes an epistemological presupposition of time. Time is perceived as a result of observing a substance undergoing a change in one contingent attribute, and subsequently another.

In other words, as-Suhrawardī's notion of contingency is inextricably linked to the temporal dimension. It is evident from an analysis of as-Suhrawardī's texts that temporal conditions are neither understood as propositional connectives nor as arguments of a propositional function defined over time moments. Such an interpretation would render time a substance, a notion that is at odds

with the well-established metaphysical views on time that can be found in ancient and medieval philosophy. Indeed, both approaches appear to regard moments as the bearers of events. It may therefore be posited that events are properties of moments, a view that is arguably contrary to intuition. Furthermore, the utilisation of Priorian operators may present challenges in the expression of anaphoric temporal references in the object language. To illustrate, the following example from as-Suhrawardī's work requires a significant expansion of the object language of standard Priorian temporal logic: "During his life, it happens that Zayd sometimes laughs."

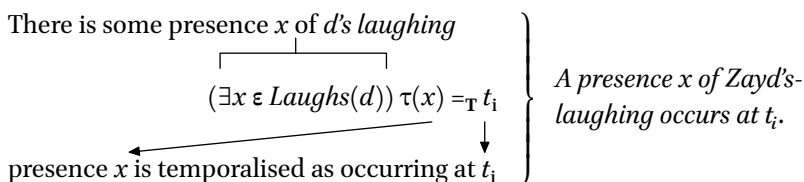
As-Suhrawardī's epistemology of presence offers an alternative approach to temporal conditions contextualising the actualisation of events and actions. This contextualisation can be explicitly stated to enrich the content of an assertion, rather than to complete the meaning of a propositional function.³⁹

One formal way of expressing this is as follows: if " $T(ime)$ " represents a set of moments, and " $@$ " denotes a monadic operator that enriches a proposition with elements of T , we obtain expressions such as $B(d)@t_i$, where " $@t_i$ " functions as an adverb of time. Thus, if " d " stands for "Zayd," " B " stands for "laughs," and " $B(d)$ " stands for "Zayd laughs," then " $B(d)@t_i$ " stands for the temporally enriched statement "Zayd laughs at (moment/period) t_i ."

In fact, $B(d)@t_i$ encodes the outcome of a *timing* function τ which associates presences of $B(d)$ with instants of time: the function τ *temporalises* presences of laughing. More precisely,

$$Laughs(d)@t_i$$

stands as an abbreviation for



In summary, our analysis of as-Suhrawardī's epistemology of presence leads us to suggest that the statement "Zayd laughs" is understood as indicating the presence of Zayd's laughter at a specific time.

39 We owe the expression *enrichment* to François Recanati, "It Is Raining (Somewhere)," *Linguistics and Philosophy* 30, no. 1 (2007): 123–146.

To apply this analysis within as-Suhrawardī's modal framework, it is essential to recognise that temporality is only explicitly invoked when a witness for a contingency claim is required. The tables below adhere to this policy, with the first table displaying the informal formulation and the second displaying the formal one.

It is noteworthy that a logical analysis of the proposition "If there is an instance of the subject which is B , then there must be some instance where its absence is witnessed and vice versa"—i.e., $(\text{Some}_D A) B(d_i) \supset \sim B$ —can be interpreted in two ways. In the first interpretation, the instance of the subject is the same, but the negation of B happens at a different time. In the second interpretation, two distinct instances of the subject are posited: one actualising B and one its negation, both at the same moment. This distinction aligns with the division between dispositions and acquired capacities.

Statement	Challenge	Defence
Dynamic encoding	Dynamic encoding	Dynamic encoding
$X! (\text{Every}_D A) \text{LMB}$	$Y! A(d_i)$	$X! (\text{Some}_D A) B(d_i) \supset \sim B$ X states that d_i witnesses B iff some d (in D which is an A) witnesses its absence.
$X! (\text{Some}_D A) B(d_i) \supset \sim B$	Y Who is that $_D A$?	$X! B(d_i)@t_i \supset \sim B(d_i)@t_j$ Whereby $t_i \neq t_j$ Or $X! B(d_i)@t_i \supset \sim B(d_j)@t_j$ Whereby $d_j \neq d_i \in_D A$

Statement	Challenge	Defence
Explicit dialectical encoding	Explicit dialectical encoding	Explicit dialectical encoding
$X! (\forall z \in \{x \in D \mid A(x)\}) \text{ LMB}(\mathcal{L}^{\exists}(z)^Y)$	$Y! A(d_i)$ $\mathcal{L}^{\exists}(z)=d_i \in D$	$X! b(d_i): (\exists y \in_D A) B(d_i) \supset \sim B(y)$
All D 's that are A are necessarily contingently B —whereby “ $\mathcal{L}^{\exists}(z)^Y$ ” stands for an element of D that is an A and was chosen by the adversary Y .	Y states $A(d_i)$, by choosing a d_i which is one of those left components of z that are A in D .	X states that d_i witnesses B iff some d_j , chosen by X , witnesses its absence.
$X! b \in (\exists y \in_D A) B(d_i) \supset \sim B(y)$	$Y?_{\exists}$	$X! b(d_i) \in B(d_i)@t_i \supset \sim B(d_i)@t_j$ Whereby $\mathcal{L}^{\exists}(y)=d_i \in_D A$ and $t_i \neq_T t_j$
.	Y : who is that y ? -	X states that d_i is the y that also witnesses the absence of B , but, of course, at a time different to the time when it witnesses the presence of B . Or $X! b(d_i) \in B(d_i)@t_i \supset \sim B(d_j)@t_j$ Whereby $d_j \neq d_i \in_D A$ X states that d_j (different to d_i) is the y that witnesses the absence of B . The time of the latter might or not be the same as the time of the former.

4.2.2 On Weak Plenitude

As previously stated, an examination of as-Suhrawardī's examples of the necessary contingent reveals that he believes there are potentialities that may never actualise, and others that actualise at least once. Nevertheless, he does not explicitly differentiate between contingencies that exhibit strong Plenitude and those that exhibit a weaker form of it.

Weak Plenitude seems more applicable to acquired capacities like speaking different languages than to 'natural' ones like laughing. For example, it is unlikely that anyone will never laugh, but it is more likely that no one will ever master 1500 languages.

Furthermore, when considering weak Plenitude in a dialectical context, it can be viewed in two distinct ways: as involving hypothetical Plenitude or as counterfactual Plenitude. Both will be discussed in the following sections.

4.2.2.1 *Hypothetical Plenitude*

In a dialogical setting there is a rule, called *Socratic Rule* by Mathieu Marion and Helge Rückert, which dictates that certain propositions are defined as *unanalysable* constituents of the thesis.⁴⁰ An unanalysable proposition cannot be stated by the proponent unless the opponent has already stated them and cannot be challenged. When **P** states an unanalysable, he will justify it with the indication "you_n", which expresses that the statement is supported by **O**'s own endorsement of the same statement at move *n*. As the proponent states the conclusion and the opponent states the premises, it is the responsibility of **P** to justify the conclusion by supporting each of its components with evidence drawn from **O**'s statements.

This rule is central to the dialectical conception of logic, as seen in Aristotle's *Topics*. It implements the no-counterexample understanding of quantifiers discussed earlier.

In standard dialogues, the unanalysable constituents are the elementary propositions uttered during a play. As-Suhrawardī's logic requires that negations of elementary propositions and expressions for unactualised capacities be included in the category of unanalysable constituents. This is because the former is necessary to treat negated elementary propositions as affirmative, and the latter is integral to his understanding of necessarily contingent propositions when they exhibit weak Plenitude.

⁴⁰ Cf. Mathieu Marion and Helge Rückert, "Aristotle on Universal Quantification: A Study from the Perspective of Game Semantics," *History and Philosophy of Logic* 37, no. 3 (2016): 201–229. See also Crubellier et al. "Dialectic, The Dictum de Omni and Ethesis".

In summary,

- If we assume that the necessarily contingent predicate B , which occurs in a statement such as $P ! (Every_D A)LMB$, is subject to hypothetical weak Plenitude, and the defence of this position amounts to P stating the bi-implication $B(d_i)@t_i \supset \sim B(d_j)@t_j$, then the Socratic Rule when applied to this form of Plenitude states that P may utter the bi-implication only after O has stated it before.

Both interlocutors agree that B may actualise if $\sim B$ does too, without committing to the actualisation of either. This is a purely hypothetical statement on the realisability of B .

4.2.2.2 *Counterfactual Plenitude: The Now and the Flow of Time*

In the preceding sections, we tacitly assumed that the pair witnessing the contingency occurs at moments occurring in an actual or ‘real’ course of events. However, in the case of what we called hypothetical Plenitude we make the main assumption that time is linear.

Conversely, if we posit that Ibn Sīnā’s style of counterfactual Plenitude may also be at work in as-Suhrawardī’s notion of contingency, this entails associating with the meaning of contingency alternative courses of events or histories following the moment of utterance, with one of them materialising. If in the materialised course of events $B(d_i)$ occurs, there is another possible course of events that has not materialised, but in which $B(d_j)$ occurs instead. The same is true in reverse.⁴¹

Furthermore, it seems reasonable to claim that a witness of the subject term has a potentiality or capacity if it is not actualised now, but will be, rather than if it has been actualised in the past. Perhaps it does not matter for as-Suhrawardī’s general epistemological aims whether potentiality has been lost at the time of utterance, so that a past actualisation is sufficient for the attribu-

41 We deliberately avoid speaking of possible worlds, which we think is quite alien to the notion of modality in Aristotle and some influential Arab post-classical Islamic thinkers, critics of Ibn Sīnā such as as-Suhrawardī. In fact, the temporal unbundling of the notion of modality in Aristotle, known as the *frequency* or *statistical* interpretation of modalities, is quite well documented—see Griffel, *Al-Ghazali’s Philosophical Theology* (Oxford: OUP, 2009), 162–172. According to this view, the possibilities represented in a tree of branching histories should be thought of as the real possibilities of our (one and only) world. Our world contains real possibilities for what might be and for what might have been. The basic idea is that the possibilities are of this world rather than other-worldly in the Lewisian sense—cf. Michael Perloff and Nuel Belnap, “Future Contingents and the Battle Tomorrow,” *Review of Metaphysics* 64, no. 3 (2011): 588.

tion of contingency. We will assume, however, that potentiality is open to the future, although, as far as we can see, nothing depends on such an assumption.

Be that as it may, what is important is to consider a time of utterance t_0 , the “now”, in relation to which the direction of the flow of time is defined. In fact, the time of utterance not only shapes the dialectical interaction of contingency claims but is also constitutive of as-Suhrawardī’s view of time, when the present moment of now is introduced as a mental (imaginary) reference point to determine before and after:⁴²

“Before” and “after” are so considered in relation to the instantaneous moment of imagination, and time is that which is around it.⁴³

This yields the following:

- Given histories h_i and h_j crossing t_0 , $B(d_i)$, actualises at some moment $t_i > t_0$ on the **real** history $\boxed{h_i}$, iff $\sim B(d_i)$ occurs at a ‘**twin**’ moment $t_{i^*} > t_0$ in the alternative course of events h_j .

In short, $B(d_i)@t_{i>0}/\boxed{h_i} \supset \sim B(d_i)@t_{i^*>0}/h_j$.

The square in the expression $\boxed{h_i}$ indicates that this history is the *actual course of events*, and ‘ t_0 ’ indicates the reference point *now*. Of course, the setting also admits the variant in which the negative occurs in the real history.

COUNTERFACTUAL PLENITUDE

Statement	Challenge	Defence
$X! B(d_i)@t_{i>0}/\boxed{h_i} \supset \sim B(d_i)@t_{i^*>0}/h_j$	$Y! B(d_i)@t_{i>0}/\boxed{h_i}$	$X! \sim B(d_i)@t_{i^*>0}/h_j$
The setting also admits the variant in which the negative occurs in the real history.	Or	-----
	$Y! \sim B(d_i)@t_{i^*>0}/h_j$	$X! B(d_i)@t_{i>0}/\boxed{h_i}$
	Y challenges the bi-implication by either stating the left or the right of it.	X defends by stating the right if Y states the left and vice versa.

42 Because of the flow of time fixing such a moment (a static reference point) is an abstract product of the mind.

43 As-Suhrawardī, *The Philosophy of Illumination*, sec. 185, 120.

III.3 Simple Convertibility

In order to implement convertibility in the dialectical framework, we will index the notation for modalities in the following way:

	Admits simple conversion	Does not admit simple conversion
Necessity	$L^\leftrightarrow$	$L^{\sim\leftrightarrow}$
Contingency	$M^\leftrightarrow$	$M^{\sim\leftrightarrow}$

The dialectical meaning explanation will thus allow further challenges, namely

- 1 requesting to specify the kind of necessity or contingency involved.
- 2 requesting to show the application or not of simple convertibility

Statement	Challenge 1	Defence 1	Challenge 2	Defence 2
$X!(\forall_D A)LLB$	$Y?L^\leftrightarrow L^{\sim\leftrightarrow}$	$X!(\forall_D A)LL^\leftrightarrow B$	$Y?^\leftrightarrow$	$X!(\forall_D B)LLA$
	Does it admit simple conversion or not?	It admits simple conversion.	Execute the conversion	
		$X!(\forall_D A)LL^{\sim\leftrightarrow} B$	$Y?^{\sim\leftrightarrow}$	$X!(\exists_D B)LL\sim A$
		It doesn't admit simple conversion.	Show the non-convertibility.	There is at least one B for which A is impossible
$X!(\forall_D A)LMB$	$Y?M^\leftrightarrow M^{\sim\leftrightarrow}$	$X!(\forall_D A)LM^\leftrightarrow B$	$Y?^\leftrightarrow$	$X!(\forall LM_D B)LLA$
	Does it admit simple conversion or not?	It admits simple conversion.	Execute the conversion	

(cont.)

Statement	Challenge 1	Defence 1	Challenge 2	Defence 2
		$X!(\forall_D A)LM\sim\leftrightarrow B$	$Y?\sim\leftrightarrow$	$X!(\exists LM_D B)LL\sim A$
		It doesn't admit simple conversion	Show the non-convertibility.	There is at least one necessarily contingently B for which A is impossible

5 **Syllogism: Dialectical Meaning Explanations at Work**

The reconstruction of as-Suhrawardī's dialectic meaning explanations discussed above renders his own ways to present syllogistic proofs (though his proofs are often quite sketchy). Because of space restrictions on an already too long paper, we will restrict our discussion to the first figure.

In *Mantiq at-Talwīḥāt* there is a development that indicates how the meaning explanations are to be deployed in a demonstration. The text involves the controversial *Barbara* mood where the minor premise contains a possibility, the major a categorical universal and the conclusion a possibility (usually notated as **xmm** in the Aristotelian notation and **mxm** in the Arabic one).

Know that the conclusion in first-figure syllogisms follows the major in the mixed-premise syllogisms, except when the minor is possible and the major is existential. If we say 'Possibly every J is B' and 'Actually (*bi'l-wujūd*) every B is A', it is known from the nature of possibility that it may never actually occur; so if the J is never described as B, it does not follow that the A comes to it actually, but only potentially, so it's possible.⁴⁴

In this text the subject and the predicate of the major premise (here premise 11), are **both modalised de facto during the demonstration**. Actually, in as-Suhrawardī's view, the middle and major term of a productive syllogism of the first figure must share the same modality in both premises and conclusion.

44 As-Suhrawardī, *Mantiq at-Talwīḥāt*, 35–36, translated in Street, "Suhrawardī on Modal Syllogism," 170.

As-Suhrawardī explicitly formulates this as a rule in *Ḥikmat al-Ishrāq*,⁴⁵ and provides two examples: when the major term relates to its subject by necessity and when the major term relates to its subject by contingency:

There is no need to multiply the moods of syllogism, rejecting some and accepting others. Further, since the last term leads to the first term by means of the middle, the modes in the definitely necessary proposition are made part of the predicate in one or both of the premises, thus leading to the major. For example, 'All men are necessarily contingently literate, and all contingently literate beings are necessarily animals by necessity (or contingently walkers), therefore, all men are necessarily animals by necessity (or contingently walkers).'⁴⁶

In his first example, the major term is necessarily necessary, while in the second example, the major term is necessarily contingent. In both examples, the middle term is necessarily contingent, but the modalities of the terms are the same wherever they occur.

If we present as-Suhrawardī's argument, sketched in the text of the *Manṭiq at-Talwīḥāt* quoted above, as a dialogue with a proponent P and an opponent O,⁴⁷ and we assume and focus on an instance of the subject that bears a contingency at one moment and not at another,⁴⁸ and we also assume that the contingency enjoys hypothetical Plenitude, we get the following:

- o. P ! I can show that every element of domain of discourse *D* that is a *J* is possibly *A* follows from the premises: 1) Every element of *D* that is *J* is possibly *B* and 11) Every element of *D* that is *B* is *A*.
- 1. O ! Fine, I give you the premises. Show me now that the consequent of the conclusion follows from some *d_i* in the domain of discourse *D* that is *J*. In other words, O challenges the conclusion with the move O ! *J*(*d_i*).
- 2. P ! What I will do is to show you that the endorsement of the premises will force you to assert this consequent. Let us start with the first premise. Since the first premise states that every element of the domain of dis-

45 As-Suhrawardī, *The Philosophy of Illumination*, 22–23.

46 As-Suhrawardī, *The Philosophy of Illumination*, 22–23.

47 The informal presentation below should be sufficient to follow the development of a dialogue. The reader might also consult Clerbout and McConaughy, "Dialogical Logic".

48 Of course, we read the example of *Manṭiq at-Talwīḥāt* through the dialectical meaning explanations of the modalities of *Ḥikmat al-Ishrāq*. This can be seen as highlighting the refinements that as-Suhrawardī's logic has undergone in developing his *Philosophy of Illumination*.

course that is J is possibly B , and you just chose d_i in the domain of discourse with your first move, that B is possible should also hold for d_i , right? In short, **P** challenges the first premise with the move **P** $you_1 \in J(d_i)$; whereby “ you_1 ” stands for the indication “you just stated the same at move 1”.

3. **O** ! Indeed, I have to assume that d_i is one of those in the domain of discourse that are possibly B . However, notice that I neither state herewith that B is actualised in t_i , nor do I state that B is never actualised. Thus, **O** defends the first premise stating the hypothetical $B(d_i)$ actualises at t_i iff at $B(d_i)$ is not actualized at t_j —i.e. **O** ! $B(d_i)@t_i \supset \sim B(d_i)@t_j$.⁴⁹
4. **P** ! Ok, however, premise 11 states that every element of the domain of discourse that is B is A , this must include all those elements in D that are possible instances of B , so let us again take precisely this d_i that you just conceded with your move 3 as being a possible B . This possible B must be a possible A , right? So **P** challenges the second premise with the move **P** ! $you_3 \in B(d_i)@t_i \supset \sim B(d_i)@t_j$.
5. **O** ! Right. This element of the domain D must be possibly A . **O** is forced to defend the second premise with the move **O** ! $A(d_i)@t_i \supset \sim A(d_i)@t_j$.
6. **P** ! But this is exactly what you asked me to show from the start. You just conceded it with your move 5. Indeed, with the previous move **O** has been forced to state what he asked for, namely $A(d_i)@t_i \supset \sim A(d_i)@t_j$. **P** can now defend the conclusion with the move **P** $you_5 \in A(d_i)@t_i \supset \sim A(d_i)@t_j$.

This development results from applying the following rules of the already mentioned framework of *Immanent Reasoning*, adapted to syllogism and presented in a simplified form:⁵⁰

1. Starting rule

The player who states the conclusion move $\circ$ is the proponent **P**. He states the thesis.

In the context of syllogism, the thesis amounts to the proponent committing to the conclusion provided that the opponent commits to the initial premises.

49 We skip the steps leading to this answer. These steps involve the Opponent taking the choice to focus on the same individual when answering to the challenge on **O** ! $(\exists y \in {}_DA)B(d_i) \supset \sim B(y)$.

50 Cf. Zoé McConaughy, *Aristotle, Science and the Dialectician's Activity* (Lille: Ph.D. Thesis, 2021), chapter 4.2, table 4.9. See also Crubellier et al. “Dialectic, The Dictum de Omni and Ecthesis”.

(cont.)

2. Development rule

Once the starting rule has been implemented, each player in turn plays a move according to the dialectical meaning explanations for quantifiers, connective, modalities and the other structural moves.

3. Socratic rule

Some specific propositions, which we call *unanalysable constituents*, may not be stated by **P**, unless **O** stated them before. **O** can state such propositions when required. When **P** states such a proposition, he will justify it with the indication you_n , which indicates that his statement is backed by **O**'s endorsement of it at move n , and that he (**P**) adheres to the knowledge conveyed by **O**'s endorsement.

In the context of Suhrawardī's logic, unanalysable propositions include positive and negative literals (i.e. elementary propositions with and without negation). In order to render *hypothetical Plenitude*, expressions of not actualised capacities such as $B(d_i)@t_i \supset \sim B(d_j)@t_j$ will also be treated as unanalysable.

4. Pragmatic coherence rule (concerns mainly the third figure)

When the conclusion Proponent defends is particular and all the premises Opponent defends are universal, Proponent may request the Opponent to instantiate the subject of a premise with the instance d_i , chosen by **P**, **provided** d_i is **new**: challenge: $P ?_{J(d_i)}$; defence: $O ! J(d_i)$ (for a universal with $\{x \in D \mid J(x)\}$ as subject, and J as subject term); this prevents **O** from stating $J(d_i)$ when he endorsed before some $J^*(d_i)$ whereby J and J^* are incompatible.

5. Ending rule

The player who states $\perp$ give-up, immediately loses. Otherwise, the player who has no available move left at this turn loses.⁵¹

Let us now present as-Suhrawardī's argument in the form of dialogical table, focusing on his own example:

51 Two Comments on the Rules.

- i) The rationale behind the pragmatic coherence rule concerns the way to deal with ontological assumptions such as those required by *Darapti*.
- ii) The prescription on giving up in the ending rule concerns the dialogical interpretation of negation. When challenging a negation such as $\sim A$ stated by player **X**, the challenger **Y** must now overtake the burden of the proof and state A . The defender of the negation has two options, either to counterattack A , or simply give up and concede. The latter is indicated by the move $X ! \perp$ give-up. In the Aristotelian texts the move $\perp$ give-up corresponds to the dialectical use of the term ἀδύνατον.

All humans are necessarily contingently literate
 All literate beings are walkers
 Therefore, all humans are necessarily contingently walkers

If we place a syllogism within a dialogue, then the idea is that the proponent **P** claims that the conclusion holds if the opponent **O** concedes to state the premises. This yields the notations:

Implicit notation	Explicit formal notation
$\mathbf{O} ! (\text{Every}_D J) \mathbf{LMB}$	$\mathbf{O} ! (\forall z \in \{x \in D \mid J(x)\}) \mathbf{LMB}(\mathcal{L} \{z\}^{\mathbf{P}})$
$\mathbf{O} ! (\text{Every}_D B) A$	$\mathbf{O} ! (\forall z \in \{x \in D \mid B(x)\}) A(\mathcal{L} \{z\}^{\mathbf{P}})$
$\mathbf{P} ! (\text{Every}_D J) \mathbf{LMA}$	$\mathbf{P} ! (\forall z \in \{x \in D \mid J(x)\}) \mathbf{LMA}(\mathcal{L} \{z\}^{\mathbf{O}})^{52}$

Remember that explicit dialectical notation also indicates which player is responsible for substituting the variables. As the Opponent states the premises, and they are universals, it is the Proponent who will choose the instance of the subject for which the predicate is to be stated. Dually, since the conclusion is stated by the Proponent, the Opponent will choose the instance of the subject of which the predicate is to be stated. Following the Socratic Rule, a winning strategy for the Proponent results from letting the Opponent choose first and then use that choice for his own moves.

N.B. In order to keep close to the text we skip, in most of the dialogues, the steps $\mathbf{X} ! (\exists y: A_D) B(d_i) @ t_i \supset \sim B(y) @ t_j$, $\mathbf{Y} ?_{\exists}$ —in words, **X** ! There is some y in A such that d_i is B at t_i iff y is not B at t_j , **Y** Who is that y ?

Moreover, we will assume that **X**'s answer to that challenge focuses on individual (hypothetical) Plenitude—i.e., we will take it that the answer of **X** is that it is *the same* d_i that is not a B at t_j . The resulting variant, trig-

⁵² If we deploy the formalisation $\mathbf{L}(\forall x (J(x) \supset \mathbf{MB}(x))), \mathbf{L}(\forall x (B(x) \supset \mathbf{MA}(x))) \vdash \mathbf{L}(\forall x (J(x) \supset \mathbf{MA}(x)))$ and assume contemporary modal logic, then axiom $K: \mathbf{L}(A \supset B) \vdash \mathbf{MA} \supset \mathbf{MB}$ will be required, which assumes one-sided possibility—see Movahed, “Suhrawardī's Modal Syllogisms”. But this contravenes as-Suhrawardī's notion of contingency, whereby a contingency is neither necessary nor impossible.

gered by the option of introducing a different individual, is pretty straightforward.

O		P	
I	$!(\forall z \varepsilon \{x \varepsilon D \mid J(x)\}) \text{LMB}(\mathcal{L} \mathfrak{B}(z))$	$!(\forall z \varepsilon \{x \varepsilon D \mid J(x)\}) \text{LMA}(\mathcal{L} \mathfrak{B}(z))$	o
II	$!(\forall z \varepsilon \{x \varepsilon D \mid B(x)\}) A(\mathcal{L} \mathfrak{B}(z))$		
1	$!J(d_i)$	?O	$!you_5 \varepsilon A(d_i)@t_i \supset \sim A(d_i)@t_j$ 6
	$!\mathcal{L} \mathfrak{B}(z)=d_i \varepsilon D$		
3	$!B(d_i)@t_i \supset \sim B(d_i)@t_i$	?I	$!J(d_i)$ 2
			$!\mathcal{L} \mathfrak{B}(z)=d_i \varepsilon D$
5	$!A(d_i)@t_i \supset \sim A(d_i)@t_j$	?II	$!you_3 \varepsilon B(d_i)@t_i \supset \sim B(d_i)@t_j$ 4
		Proponent wins	

- With move 4 P makes use of the rule that the middle term **must have the same modality in both premises**. That is, *every* B is understood as also including contingent cases of B .
- The dialogue ends since 6 is an unanalysable constituent of the conclusion, namely the not actualised capacity $A(d_i)@t_i \supset \sim A(d_j)@t_j$, that cannot be challenged, since O himself endorsed it with move 5.
- As mentioned above, if we prefer to further analyse the bi-implication the end-result of the dialogue will not change. It will only be a bit longer: as soon as O challenges the bi-implication by committing to one of the sides of the bi-implication, P will do the same.

O		P	
I	$!(\text{Every}_D J) \text{LMB}$	$!(\text{Every}_D J) \text{LMA}$	o
II	$!(\text{Every}_D B) A$		
1	$!J(d_i)$	?O	$!you_5: A(d_i)@t_i \supset \sim A(d_i)@t_j$ 6
3	$!B(d_i)@t_i \supset \sim B(d_i)@t_j$	?I	$!you_1: J(d_i)$ 2
5	$!A(d_i)@t_i \supset \sim A(d_i)@t_j$	?II	$!you_3: B(d_i)@t_i \supset \sim B(d_i)@t_j$ 4
		Proponent wins	

P can repeat the same sequence of moves for any arbitrary element of D that O happens to choose to challenge the universal in the conclusion. In other words,

P has a winning strategy for this syllogism, and therefore it is valid. The strategy can be seen as a “recapitulation” and generalisation that produces an algorithm for winning.⁵³ In our case, informally the winning strategy amounts to the following:

- 1) Let O choose any arbitrary instance of the universal in the conclusion
- 2) P should use exactly this instance, *whichever* this instance chosen by O is, to challenge the first premise, and force O to predicate *B* of it
- 3) O predicates *B* of it, but without committing to its actualisation
- 4) P should use exactly this endorsement of O (that the capacity *B* can be predicated of the instance at stake), to challenge the second premise
- 5) O is forced to predicate *A* of it, but again chooses to endorse it without committing to its actualisation
- 6) P can now use this last endorsement to respond to the challenge to the conclusion

– Apply this sequence for any d_i chosen by O at move 1

A winning strategy can be represented as a sequent calculus, where P's assertions in a dialogical framework are translated as assertions on the right of the turn-style in the sequent calculus, and O's assertions are translated as assertions on the left. In fact, the sequent calculus is generated by the winning strategy produced by the dialogue. The interaction between the players within a winning strategy brings the dialogical meaning explanation of the modalities to bear by fleshing out the meaning of each constituent.

A winning strategy may also be represented as a semantic tree, where a branch is closed if both an O and a P copy of the same elementary assertion or of the same unanalysable bi-implication occur in that branch. In fact, semantic trees are the simplest way to make explicit the winning strategy generated by dialogue games. The semantic tree corresponding to the winning strategy for our example takes the following form (skipping some straightforward steps):

O ! $(\forall z \in \{x \in D \mid J(x)\}) \text{ LMB}(\mathcal{L} \text{ } \mathfrak{b}(z))$

O ! $(\forall z \in \{x \in D \mid \text{LMB}(x)\}) \mathcal{A}(\mathcal{L} \text{ } \mathfrak{b}(z))$

53 For the notion of recapitulation in the context of syllogism see Ernest Kapp, *Greek Foundations of Traditional Logic* (New York: Columbia University Press, 1942), 14–16 and 71; Michel Crubellier, “Du sullogismos au syllogisme,” *Revue philosophique* 1 (2011) 17–36; and McConaughy, *Aristotle, Science and the Dialectician's Activity* (Lille: Ph.D. Thesis, 2021).

$P! (\forall z \in \{x \in D \mid J(x)\}) \text{LMA}(\mathcal{L} \text{ } \mathfrak{I}(z))$		
$O! J(d_i) \text{---} \text{granted } d_i \in D$		
$P! A(d_i)@t_i \supset \sim A(d_i)@t_j$		
$P! J(d_i) \text{---} \text{granted } d_i \in D$	$O! B(d_i)@t_i \supset \sim B(d_i)@t$	
closed	$P! B(d_i)@t_i \supset \sim B(d_i)@t_j$	$O! A(d_i)@t_i \supset \sim A(d_i)@t_j$
(because of line 4)	closed	closed
	(because of the precedent line)	(because of line 5)

6 Conclusion

Is as-Suhrawardī's logic compatible with essentialism as claimed by Street? It appears to be so.

However, the logic of Illumination exhibits certain distinctive characteristics resulting from the intertwining of the *baḥthī* and *dhawqī*, which serve as the foundation for all of his innovations. These include:

- The logic of Illumination postulates that knowledge is primarily derived from the experience of presence. In particular, it is the experience of self-awareness that leads to the mental construction of the present moment, or the “now.”
- As-Suhrawardī's modal logic is based on a meaning theory that distinguishes various dependent relations between predicate and subject terms. Dependency relations are implemented by functions from presences of the subject to presences of those instances of the subject bearing the attributed predicate. This theory is shaped by dialectical meaning explanations, which provide rules for constructing counterexamples.

The proposed dialectical framework for reconstructing as-Suhrawardī's logic distinguishes between three temporal aspects:

- (i) The time involved in constructing knowledge refers to the succession of moves leading to the justification of the thesis.
- (ii) The ‘now’ during which a presence is grasped by an immediate act of knowledge.
- (iii) The timing function from presences to moments encoded by the modality at work.

Standard temporal quantifiers and Priorian temporal operators do not capture either the first or the latter forms of temporality.

It must be acknowledged, however, that there is no explicit and systematic development of a complete dialectical framework for his logic in the texts. The formal dialogical framework for the logic of Illumination presented in this paper is, of course, a reconstruction of our own. In fact, our reconstruction is

the result of combining the textual sources in which as-Suhrawardī presents the aforementioned meaning explanations, which he sets out alongside his logical proofs and his general aim of developing a philosophy that draws upon both discursive and taste/intuition-based knowledge.

In conclusion, the primary argument presented in this paper is that as-Suhrawardī's logic of modalities is shaped by a dialectical perspective on the justification of assertions involving modalities, which aligns with his philosophy of presence in a straightforward manner.

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References

Sources

- Suhrawardī, Shihāb ad-Dīn as-. *Manṭiq at-Talwīḥāt [Logic of the Intimations]*. Ed. by A.A. Fayyāḍī. Tehran: Tehran University Press, 1955.
- Suhrawardī, Shihāb ad-Dīn as-. *Œuvres Philosophiques et Mystiques (Tome 1)*. Ed. by Henry Corbin. Tehran: Institut d'Etudes et des Recherches Culturelles, (ed.) 1951.
- Suhrawardī, Shihāb ad-Dīn as-. *Œuvres Philosophiques et Mystiques (Tome II)*. Ed. by Henry Corbin. Tehran: Institut d'Etudes et des Recherches Culturelles, (ed.) 2001.
- Suhrawardī, Shihāb ad-Dīn as-. *The Philosophy of Illumination: A New Critical Edition of*

the Text of Hikmat al-ishrāq with English Translation, Notes, Commentary, and Introduction. Ed. by John Walbridge and Hossein Ziai. Provo: Brigham Young University Press, 1999.

Literature

- Ardeshir, Mohammad. "Brouwer's Notion of Intuition and Theory of Knowledge by Presence." In *One Hundred Years of Intuitionism, 1907–2007*. Ed. by Mark van Atten, Pascal Boldini, Michel Bourdeau and Gerhard Heinzmann. Basel/Boston/Berlin: Birkhauser, 2008, 115–130.
- Aristotle. *The Works of Aristotle Translated into English*. Ed. by W.D. Ross. Oxford: Clarendon Press, 1966.
- Clerbout, Nicolas, and McConaughy, Zoé. "Dialogical Logic." In *The Stanford Encyclopedia of Philosophy*. Ed. by Edward N. Zalta. 2022. <https://plato.stanford.edu/entries/logic-dialogical/>.
- Corbin, Henry. *Œuvres Philosophiques et Mystiques (Tome 1)*. Tehran: Institut d'Etudes et des Recherches Culturelles, 1951.
- Corbin, Henry. *Œuvres Philosophiques et Mystiques (Tome 11)*. Tehran: Institut d'Etudes et des Recherches Culturelles, 2001.
- Crubellier, Michel. "Du sullogismos au syllogisme." *Revue philosophique* 1 (2011): 17–36.
- Crubellier, Michel. McConaughy, Zoé. Marion, Mathieu. and Rahman, Shahid. "Dialectic, The Dictum de Omni and Ecthesis." *History and Philosophy of Logic* 40, no. 3, (2019): 207–233.
- Daşdemir, Yusuf. "The Problem of Existential Import in Metathetic Propositions: Qutb al-Din at-Tahtani contra Fakhr al-Din al-Razi." *Nazariyat* 5, no. 2 (2019): 81–118.
- Griffel, Frank. *Al-Ghazālī's Philosophical Theology*. New York: Oxford University Press, 2009.
- Griffel, Frank. *The Formation of Post-Classical Philosophy in Islam*. Oxford: Oxford University Press, 2022.
- Ibn Sīnā. *Al-Ishārāt wa-t-Tanbihāt bi-sharḥ aṭ-Ṭūsī, al-Manṭiq* [= *Remarks and Admonitions: With Commentary by Tusi*]. Ed. by S. Dunyā (3rd ed.). Cairo: Dār al-ma'ārif, 1983.
- Kapp, Ernest. *Greek Foundations of Traditional Logic*. New York: Columbia University Press, 1942.
- Kaukua, Jari. "Suhrawardī's Knowledge as Presence in Context." *Studia Orientalia* 114 (2013): 309–324.
- Kaukua, Jari. *Suhrawardī's Illuminism*. Leiden: Brill, 2022.
- Lorenz, Kuno and Mittelstrass, Jürgen. "On Rational Philosophy of Language: The Programme in Plato's *Cratylus* Reconsidered." *Mind* 76, no. 301 (1967): 1–20.
- Malink, Marko. *Aristotle's Modal Syllogistic*. Cambridge Mass: Harvard University Press, 2013.

- Malink, Marko. "A Reconstruction of Aristotle's Modal Syllogistic." *History and Philosophy of Logic* 27, no. 2 (2006): 95–141.
- Marcotte, Roxane. "Suhrawardī." In *The Stanford Encyclopedia of Philosophy*. Ed. by Edward N. Zalta. 2019. <https://plato.stanford.edu/entries/suhrawardi/>.
- Marion, Mathieu and Rückert, Helge. "Aristotle on Universal Quantification: A Study from the Perspective of Game Semantics." *History and Philosophy of Logic* 37, no. 3 (2016): 201–229.
- McConaughy, Zoé. *Aristotle, Science and the Dialectician's Activity*, Lille: Ph.D. Thesis, 2021.
- Mousavian, Seyed N. "Did Suhrawardī Believe in Innate Ideas as A Priori Concepts? A Note." *Philosophy East and West* 64, no. 2 (2014): 473–480.
- Movahed, Zia. "Suhrawardī's Modal Syllogisms." *Sophia Perennis* 2, no. 4, 2012, Serial Number 21, (2012): 5–17.
- Perloff, Michael and Belnap, Nuel. "Future Contingents and the Battle Tomorrow." *Review of Metaphysics* 64, no. 3 (2011): 581–602.
- Rahman, Shahid. and Young, Walter Edward. "Argumentation and Arabic Philosophy of Language: Introduction." *Methodos* 22, 2022, <https://journals.openedition.org/methodos/8833>.
- Rahman, Shahid. McConaughy, Zoé. Klev, Ansten. and Clerbout, Nicolas. *Immanent Reasoning or Equality in Action: A Plaidoyer for the Play Level*. Cham: Springer, 2018.
- Ranta, Aarne. *Type Theoretical Grammar*. Oxford: Oxford University Press, 1994.
- Razavi, Mehdi Amin. *Suhrawardī and the School of Illumination*. New York: Routledge, 1997.
- Recanati, Francois. "It Is Raining (Somewhere)." In *Linguistics and Philosophy* 30, no. 1 (2007): 123–146.
- Street, Tony. "An Outline of Ibn Sinā's Syllogistic." *Archiv für Geschichte der Philosophie* 84, no. 2 (2002): 129–160.
- Street, Tony. "Suhrawardī on Modal Syllogism." In *Islamic Thought in the Middle Ages: Studies in Text, Transmission and Translation, in Honour of Hans Daiber*. Ed. by A. Akasoy and W. Raven. Leiden and Boston: Brill, 2008, 163–78.
- Street, Tony. "Avicenna on Syllogism." In *Interpreting Avicenna: Critical Essays*. Ed. by Peter Adamson. Cambridge: Cambridge University Press, 2013, 48–70.
- Strobino, Riccardo. "Per Se, Inseparability, Containment and Implication: Bridging the Gap between Avicenna's Theory of Demonstration and Logic of the Predicables." *Oriens* 44, no. 3–4, (2016): 181–266.
- Thom, Paul. "Necessity- and Possibility-Syllogisms in Avicenna and Ṭūsī." In *Insolubles and Consequences: Essays in Honour of S. Read*. Ed. by C. Dutilh Novaes and O. Thomassen Hjortland and M. Keynes. London: College Publications, 2012, 239–248.

- Walbridge, John. "Suhrawardī's Intimations of the Tablet and the Throne: The Relationship of Illuminationism and the Peripatetic Philosophy." In *The Oxford Handbook of Islamic Philosophy*. Ed. by Khaled El-Rouayheb and Sabine Schmidtke. Oxford: Oxford University Press, 2017, 255–277.
- Walbridge, John. *The Leaven of the Ancients: Suhrawardī and the Heritage of the Greeks*. Albany: SUNY Press, 1999.
- Walbridge, John. *The Wisdom of the Mystic East: Suhrawardī and Platonic Orientalism*. Albany: SUNY Press, 2001.
- Wisnovsky, Robert. "Essence and Existence in the Eleventh- and Twelfth-Century Islamic East (*Maṣriq*): A Sketch." In *The Arabic, Hebrew and Latin Reception of Ibn Sīnā's Metaphysics*. Ed. by Dag Nikolaus Hasse and Amos Bertolacci. Berlin: Walter de Gruyter, 2011, 27–50.
- Young, Walter Edward. "On the Logical Machinery of Post-Classical Dialectic: The Kitāb 'Ayn al-Nazar of Shams al-Dīn al-Samarqandī (d. 722/1322)." *Methodos*. 2021. <https://journals.openedition.org/methodos/8605>
- Young, Walter Edward. "The Formal Evolution of Islamic Juridical Dialectic: A Brief Glimpse." In *New Developments in Legal Reasoning and Logic: From Ancient Law to Modern Legal Systems*. Ed. by Shahid Rahman, Matthias Armgardt, Hans Christian Nordtveit Kvernenes. Dordrecht; New York; Cham: Springer, 2021, 83–114.
- Young, Walter Edward. *On the Protocols for Dialectical Inquiry (Ādāb al-Baḥth): A Critical Edition and Parallel Translation of the Sharḥ al-Risāla al-Samarqandīyya by Qūṭb al-Dīn al-Kīlānī (fl. ca. 830/1427), Prefaced by a Critical Edition and Parallel Translation of its Grundtext: The Risāla fī Ādāb al-Baḥth by Shams al-Dīn al-Samarqandī (d. 722/1322)*. Forthcoming.
- Zhang, Tianyi. *A Philosophical Enquiry into the Nature of Suhrawardī's Illuminationism. Light in the Caven*. Leiden: Brill, 2023.
- Ziai, Hossein. *Knowledge and Illumination: A Study of Suhrawardī's Ḥikmat al-Ishrāq*. Atlanta: Scholars Press, 1990.

The Logic of Divine Discourse: Fakhr ad-Dīn ar-Rāzī's Application of Logic to Qur'ānic Interpretation

Tareq Moqbel

1 Introduction¹

The ancient Greek commentarial tradition attests to the use of logic in the reconstruction of arguments.² Logic has also been functional in the interpretation of the Bible,³ and in theology more generally.⁴ With respect to the Qur'ān,

1 Among the research areas to which Dr. Tony Street has contributed is that of Fakhr ad-Dīn ar-Rāzī (d. 606/1209) and his logical programme; for example, Tony Street, "Concerning the Life and Works of Fakhr al-Dīn al-Rāzī," in *Islam: Essays on Scripture, Thought and Society. A Festschrift in Honour of Anthony H. Johns*, ed. by Peter G. Riddell and Tony Street (Leiden: Brill, 1997), 135–146; Tony Street, "Faḥraddīn ar-Rāzī's critique of Avicennan logic," in *Logik und Theologie. Das Organon im arabischen und im lateinischen Mittelalter*, ed. by U. Rudolph and D. Perler (Leiden: Brill, 2005), 99–116. It is a pleasure, therefore, to dedicate this article as a modest tribute to my *Doktorvater*, Dr. Street, whose brilliant scholarship was what first motivated me to study ar-Rāzī and his Qur'ānic hermeneutics. I further hope that dedicating an article on ar-Rāzī to Dr. Street is all the more fitting given that he was confirmed by Father Georges Anawati "as a follower of ar-Rāzī"; see Tony Street, *Najm al-Dīn al-Kātibī's al-Risālah al-Shamsīyah: An Edition and Translation with Commentary* (New York: New York University Press, 2024), x. Unless stated otherwise, all translations in this article are my own.

2 See, for example, Marije Martijn, "If, then, therefore? Neoplatonic Exegetical Logic between the Categorical and the Hypothetical," *History of Philosophy & Logical Analysis* 24, no. 1 (2021): 3–43; Bernd Hene, "Aristotelian and Stoic Syllogistic in the Anonymous Commentary on Plato's Theaetetus," *History of Philosophy & Logical Analysis* 24, no. 1 (2021): 44–70; Orna Harari, "Logic and Interpretation: Syllogistic Reconstructions in Simplicius' Commentary on Aristotle's Physics," *History of Philosophy & Logical Analysis* 24, no. 1 (2021): 122–139.

3 For examples, see Aviram Ravitsky, "Aristotelian Logic and Talmudic Methodology: The Commentaries on the 13 Hermeneutic Principles and their Application of Logic," in *Judaic Logic*, ed. by Andrew Schumann (Piscataway, NJ: Gorgias Press, 2010), 117–144; Sara Klein-Braslavy, *Without Any Doubt: Gersonides on Method and Knowledge* (Leiden: Brill, 2011); Charles H. Manekin, "Fallacies and Biblical Exegesis—The Case of Joseph ibn Kaspi," in *Fallacies in the Arabic, Byzantine, Hebrew and Latin Traditions*, ed. by Laurent Cesalli, Leone Gazziero, Charles H. Manekin, Shahid Rahman, Tony Street, and Michele Trizio (Turnhout: Brepols Publishers, 2023), 209–230; Mark Randall James, *Learning the Language of Scripture: Origen, Wisdom, and the Logic of Interpretation* (Leiden: Brill, 2021).

4 See Jc Beall, "Christ—A Contradiction: A Defense of a Contradictory Christology," *Journal of*

Abū Ḥāmid al-Ghazālī (d. 505/1111) has provided some hints in *al-Qistās al-Mustaqīm*.⁵ But it is with ar-Rāzī that we find logic—possibly for the first time—purposely used in a work of *tafsīr* to interpret the Qurʾān.⁶ Yet, it does not seem that much attention has been given to this aspect of ar-Rāzī's exegesis; that is, how logic shapes his reading of the Qurʾān.⁷ This is all the more surprising given ar-Rāzī's standing in the science of logic.⁸

This article proposes to show in what way ar-Rāzī made use in *Mafātīḥ al-Ghayb* of views stated in the works of logic—in other words, how the theory of logic finds its way into his *tafsīr*. On the one hand this article shows us, through ar-Rāzī, what help logic can offer the exegete of the Qurʾān. On the other hand, it offers some hints for assessing the practical implications of ar-Rāzī's logical project and, by extension, the reach of his philosophic oeuvre. I will proceed by briefly cataloguing the ways by which ar-Rāzī incorporates logic in his *tafsīr*. The main part of the article will then illustrate this application by way of concrete cases. I should also add that the aim of this article is not purely to show

Analytic Theology 7 (2019): 400–443, at 403–407; Thomas H. McCall, *Analytic Christology and the Theological Interpretation of the New Testament* (Oxford: Oxford University Press, 2021), 182–184.

5 Rosalind Ward Gwynne, *Logic, Rhetoric, and Legal Reasoning in the Qurʾān: God's Arguments* (London and New York: Routledge, 2004), 152–169; Martin Whittingham, *Al-Ghazālī and the Qurʾān: One Book, Many Meanings* (London: Routledge, 2007), 81–101; Avital Wohlman, *Al-Ghazali, Averroes and the Interpretation of the Qurʾān: Common Sense and Philosophy in Islam*, transl. by David Burrell (London: Taylor & Francis Group, 2009), 22–35.

6 Logic is one of the sciences deployed by ar-Rāzī to interpret the Qurʾān. For other sciences—namely, Islamic legal theory—see Ahmed Oulddali, “Lorsqu'un *uṣūlī* interprète le Coran: aspects de la réception de la théorie légale dans l'exégèse de Faḥr al-Dīn al-Rāzī,” *Arabica* 71, no. 1–2 (2024): 141–180.

7 As a starting point, Michel Lagarde, *Index du Grand Commentaire de Faḥr al-Dīn al-Rāzī* (Leiden: Brill, 1996), 50–51, has conveniently provided a list of references to the logical principles in ar-Rāzī's *tafsīr*. On ar-Rāzī's *tafsīr* in general, see Tariq Jaffer, *Rāzī: Master of Qurʾānic Interpretation and Theological Reasoning* (New York: Oxford University Press, 2014); Ahmed Oulddali, *Raison et révélation en Islam: Les voies de la connaissance dans le commentaire coranique de Faḥr al-Dīn al-Rāzī* (m. 606/1210) (Leiden: Brill, 2006). On the topic of logic and *tafsīr*, see Asad Q. Ahmed, “The Logic of God's Knowledge,” in *Tradition and Reception in Arabic Literature: Essays Dedicated to Andras Hamori*, ed. by Margaret Larkin and Jocelyn Sharlet (Wiesbaden: Harrassowitz, 2019), 153–160; Cornelia Schöck, *Koranexegese, Grammatik und Logik: Zum Verhältnis von arabischer und aristotelischer Urteils-, Konsequenz, und Schlusslehre* (Leiden: Brill, 2006). On an intriguing attempt to understand some Qurʾānic verses beyond classical logic, see Bakinaz Abdalla, “Evil and Responsibility in the Quran,” *Religious Studies* 61 (2025): 55–77.

8 For instance, Street, “Faḥraddīn ar-Rāzī's critique of Avicennan logic,” 2–3, notes that Ibn Khaldūn (d. 808/1406) “clearly thinks Rāzī is uniquely important in the history of logic.” See also Khaled El-Rouayheb, *Relational Syllogisms and the History of Arabic Logic, 900–1900* (Leiden: Brill, 2010), 39–69.

how logic *was used* in Qur'ānic interpretation, but it also has a forward-looking dimension: by taking ar-Rāzī as a model, it envisions how fresh and contemporary interpretations of the Qur'ān can be modelled after ar-Rāzī through incorporating logical modes into the interpretation of the Qur'ān. More generally, ar-Rāzī's daring hermeneutical manoeuvres—within the knowledge of his day and age—can inspire readers today to think about novel ways for reading the Qur'ān including, but not limited to, logic.

2 Modes of Incorporating Logic in *Mafātīḥ al-Ghayb*

Although *Mafātīḥ al-Ghayb* does not contain programmatic remarks characterising logic as necessary for the interpretation of the Qur'ān, it is clear that ar-Rāzī's *exegetical practice* identifies logic as a useful tool for understanding the Qur'ān. To this end, logic appears in the course of ar-Rāzī's exegetical discussions in at least one of three ways. The first mode involves three things. Ar-Rāzī will first state clearly that he is referring to *'ilm al-manṭiq*. Next, he will provide logical theory. Third, he will apply the theory to the passage in question.⁹ The second way is that wherein ar-Rāzī will not mention *'ilm al-manṭiq* explicitly; rather, he will directly provide logical theory and then apply it to the passage in question.¹⁰ Third, and presupposing a knowledge of logic on the part of his reader, ar-Rāzī will neither refer to *'ilm al-manṭiq* nor will he provide any logical theory. Rather, he will *apply* logic directly to the verse. In doing so, he may invoke logical terminology, perhaps to hint at what he is doing. For example, he may provide an argument based on the first-figure (*ash-shakl al-awwal*) of the connective categorical syllogistic, without describing it as such. He may, however, provide one word to indicate that he is invoking logic; for example, he will point to productivity, "it produces" (*yuntijū*).¹¹ My contention, therefore, and as I hope to demonstrate below, is that logic had a practical role and a real impact on ar-Rāzī's reading of the Qur'ān. This is reminiscent of Avicenna (d. 428/1037) who, according to Strobino, explicitly acknowledged that logic has practical applications.¹²

9 Fakhr ad-Dīn ar-Rāzī, *Mafātīḥ al-Ghayb (at-Taḥsīn al-Kabīr)*, 32 vols. (Beirut: Dār al-Fikr, 1981), III: 63–64.

10 Ar-Rāzī, *Mafātīḥ al-Ghayb*, III: 69.

11 Ar-Rāzī, *Mafātīḥ al-Ghayb*, XIV: 199.

12 Riccardo Strobino, *Avicenna's Theory of Science: Logic, Metaphysics, Epistemology* (Oakland: University of California Press, 2021), 351–355. Cf. Gilles Emery, "Central Aristotelian Themes in Aquinas's Trinitarian Theology," in *Aristotle in Aquinas's Theology*, ed. by Gilles

It is also worth mentioning, giving this article's focus on logic and the Qur'ān, that ar-Rāzī seems to be alluding that the rationale for the use of logic is found in the Qur'ān itself. I take my cue from a discussion in *al-Maṭālib al-Āliyah*. As part of a long argument concerning the idea that the heart is the main organ, ar-Rāzī comments on Q. 50:37, "there truly is a reminder in this for whoever has a heart, or whoever listens attentively." He says that the verse uses the particle *aw*, "or," to indicate two options—that the "reminder" applies to those who have a heart *or* to those who listen attentively. This allows ar-Rāzī to argue that rational powers are of two types. The first type includes those powers, at the highest level of illumination (*fī ghāyati l-kamāli wa-sh-sharāfi wa-l-ishrāq*), which are able to access the realities of things without learning and without the aid of others. Then comes the second (and most common) type of rational power; namely, that which is contingent upon the theoretical sciences and learning processes. Ar-Rāzī then avers that the first part of the verse, "there truly is a reminder in this for whoever has a heart," alludes to the first type, while the latter part of the verse, "or whoever listens attentively," signifies the second type. Next, ar-Rāzī comments on the second type by saying: "and this is one of the secrets upon which the science of logic is founded" (*wa-hādha min-a l-asrāri llatī 'alayhā binā'u 'ilmi l-manṭiq*).¹³ On my reading, this verse provides for ar-Rāzī an admission that logic is necessary for the *majority* of people.

3 Applying Logic to the Qur'ān: Case Studies

The Aristotelian *Organon* in the Arabic tradition is divided broadly into *formal* and *material* aspects.¹⁴ The cases I will present focus on the formal aspects—

Emery, O.P. and Matthew Levering (Oxford: Oxford University Press, 2015), 21–28; and briefly, Edward Synan, "The Four 'Senses' and Four Exegetes," in *With Reverence for the Word: Medieval Scriptural Exegesis in Judaism, Christianity, and Islam*, ed. by Jane Dammen McAuliffe, Barry D. Walfish, and Joseph W. Goering (New York: Oxford University Press, 2003), 225–236, at 229.

13 Fakhr ad-Dīn ar-Rāzī, *al-Maṭālib al-Āliyah min al-ʿIlm al-Ilāhī*, ed. by Aḥmad Ḥijāzī as-Saqqā. 9 vols. (Beirut: Dār al-Kitāb al-ʿArabī, 1987), VII: 168–170.

14 I take this division from Riccardo Strobino, "Ibn Sina's Logic," in *The Stanford Encyclopedia of Philosophy* (Fall 2018 Edition), ed. by Edward N. Zalta, <https://plato.stanford.edu/archives/fall2018/entries/ibn-sina-logic>, accessed February 27, 2024. On Aristotle and Arabic logic, see Tony Street, "Arabic Logic," in *Handbook of the History and Philosophy of Logic, Volume 1 Greek, Arabic and Indian Logic*, ed. by Dov M. Gabbay and John Woods (Dordrecht: New-Holland, 2004), 523–596; Ahmad Hasnawi and Wilfrid Hodges, "Arabic Logic up to Avicenna," in *The Cambridge Companion to Medieval Logic*, ed. by Catarina Dutilh Novaes and Stephen Read (Cambridge: Cambridge University Press, 2016), 45–66.

they will cover propositions; the connective syllogistic; the repetitive syllogistic; and the *reductio ad absurdum*. It will be seen that each application of logic takes its impetus from a question or a difficulty suggested by the Qur'ānic text.

3.1 *The Categorical Proposition*

Knowledge concerns truth-claims, so I open with propositions. In the course of a lengthy discussion of the notion of intercession (*ash-shafā'ah*), as prompted by Q. 2:48, "Guard yourselves against a Day when no soul will stand in place of another, no intercession will be accepted for it, nor any ransom; nor will they be helped,"¹⁵ ar-Rāzī comments on *another* related verse, Q. 21:28, "and they intercede not save for him with whom He is well-pleased." Ar-Rāzī adduces the latter verse as evidence for the Ashā'irah that intercession is applicable *even* to those who have committed grave sins and who are deserving of punishment. As we know, this runs counter to Mu'tazilite theology which rejects intercession for those who have committed grave sins—for them, God's justice must be done.

Even though the verse says, "and they intercede not save for him with whom He is well-pleased," the Ashā'irah understand it as inclusive of grave sinners on the basis that a grave sinner is pleasing to God vis-à-vis his belief in God (*murtaḍan 'inda Llāhi bi-ḥasabi ḥimānih*). That is to say that belief, *īmān*, trumps all other considerations—*īmān* is a sufficient condition for the entitlement to intercession. In the course of his commentary, ar-Rāzī provides a possible objection and then responds to it. The objection is grounded in the literal sense of the verse: a sinner (*fāsiq*) is not pleasing to God and is, thereby, not eligible to intercession. Ar-Rāzī is at his most vivid in his employment of logic as he responds:

And the response [to this objection] is that it has been established in the logical sciences that two [categorical] indefinite [propositions] do not contradict each other (*thabata fī l-'ulūmi l-manṭiqiyyati anna l-muhmalatayni lā yatanāqaḍān*).

Having invoked this theoretical construct, and after further elaborations, ar-Rāzī goes on to use it as an interpretive tool. He says:

More generally, see Dimitri Gutas, *Avicenna and the Aristotelian Tradition* (Leiden: Brill, 2014); Ahmed Alwishah and Josh Hayes, eds., *Aristotle and the Arabic Tradition* (Cambridge: Cambridge University Press, 2015).

15 For Qur'ānic translations I rely, more or less freely, on M.A.S. Abdel Haleem, *The Qur'an: A New Translation* (New York: Oxford University Press, 2005).

And if this is established (*wa-idhā thabata hādhā*), then our statement, “the bearer of a grave sin is pleasing [to God],” [and our statement], “the bearer of a grave sin is *not* pleasing [to God],” do not contradict each other (*ṣāhibu l-kabīrati murtaḍan ṣāhibu l-kabīrati laysa bi-murtaḍan lā yatanāqaḍān*). [This is so] because it is possible to say that he is pleasing [to God] in relation to his religion, and not pleasing [to God] in relation to his transgression (*murtaḍan bi-ḥasabi dīnihi laysa bi-murtaḍan bi-ḥasabi fisqih*).¹⁶

In this passage, ar-Rāzī responds to the objection levelled at the Ash‘arī view by engaging some of the basics of logic: the topic of indefinite categorical propositions (*al-qadāyā al-ḥamlīyyah al-muhmalah*) and that of contradiction (*at-tanāquḍ*). By employing a logical maxim—namely, that contradiction is not realized between two indefinite/indeterminate propositions (i.e., those which have no marks for quality or quantity)—ar-Rāzī is able to reconcile and uphold both propositions (i.e., *ṣāhibu l-kabīrati murtaḍan*, *ṣāhibu l-kabīrati laysa bi-murtaḍan*), in order to compartmentalize them after that. This application of logic in the *tafsīr* is consistent with what ar-Rāzī pens down in his works of logic. For instance, in the logic section of *The Compendium in Philosophy and Logic* (*al-Mulakḥkhaṣ fī al-Ḥikmah wa-l-Manṭiq*), one of his major works in the field of logic, ar-Rāzī writes: “as for the indefinite (*al-muhmalah*), you have known that it is potentially a particular (*fī quwwati l-juz‘iyyah*), and you shall know (*wa-sata‘rifū*) that two particulars are not contradictory (*anna l-juz‘iyyatayni lā tatanāqaḍān*).”¹⁷ Notably, logic-based interpretations of this verse are missing from some major works of *tafsīr* before ar-Rāzī.¹⁸

16 Ar-Rāzī, *Maḥfūṭ al-Ghayb*, III: 63–64.

17 Fakhr ad-Dīn ar-Rāzī, *Manṭiq al-Mulakḥkhaṣ*, ed. by Aḥad Farāmarz Qarāmalekī and Ādīne Aṣgharīneżād (Tehran: Dāneshgāh-e Emām Ṣādeq, 2002), 179.

18 See, for example, Muqātil, *Tafsīr Muqātil b. Sulaymān*, ed. by ‘Abd Allāh Shihātah, 5 vols. (Beirut: Mu‘assasat at-Tārikh al-‘Arabī, 2002), III: 76; Ibn Jarīr at-Ṭabarī, *Jāmi‘ al-Bayān ‘an Ta’wīl Āy al-Qur‘ān*, ed. by ‘Abd Allāh b. ‘Abd al-Muḥsin at-Turkī et al., 26 vols. (Riyadh: Dār ‘Ālam al-Kutub li-ṭ-Ṭibā‘ah wa-n-Nashr wa-t-Tawzī‘, 2003), XVI: 251–253; Abū Manṣūr Muḥammad al-Māturīdī, *Ta’wīlāt Ahl as-Sunnah*, ed. by Majdī Bā-Sallūm, 10 vols. (Beirut: Dār al-Kutub al-‘Ilmiyyah, 2005), VII: 338; Jār Allāh Maḥmūd b. ‘Umar az-Zamakhsharī, *al-Kashshāf ‘an Ḥaqā’iq at-Tanzīl wa-‘Uyūn al-Aqāwīl fī Wujūh at-Ta’wīl*, ed. by Khalīl Shihā (Beirut: Dār al-Ma‘rifah, 2009), 677; Abū Muḥammad Ibn ‘Aṭīyyah, *al-Muḥarrar al-Wajīz fī Tafsīr al-Kitāb al-‘Azīz (Tafsīr Ibn ‘Aṭīyyah)*, ed. by ar-Raḥḥālāh al-Fārūq et al., 8 vols. (Doha: Wizārat al-Awqāf wa-sh-Shu‘ūn al-Islāmiyyah, 2007), VI: 161; ‘Abd ar-Raḥmān Ibn al-Jawzī, *Zād al-Masīr fī ‘Ilm at-Tafsīr*, ed. by Zuhayr ash-Shāwīsh, 9 vols. (Beirut: al-Maktab al-Islāmī and Dār Ibn Ḥazm, 2002), V: 347.

3.2 *The Hypothetical Proposition and Truth-Conditions*

Q. 43:81, “Say [O Prophet], ‘If the Lord of Mercy had a son I would be the first of the ones worshipping [him],’” has troubled some exegetes as it seems to raise the *hypothetical possibility* of God’s having offspring. As ar-Rāzī formulates the problem: “people have thought that His words ... if taken at face value (*law ajraynāhu ‘alā zāhirih*), imply uncertainty with respect to affirming offspring to God (*yaqtaḍī wuqū‘a sh-shakki fī ithbāti waladin li-Llāhi ta‘ālā*).” And given that this is impossible, continues ar-Rāzī, those people resorted to interpreting the verse (*wa-dhālika muḥālun fa-lā jarama ftaqarū ilā ta’wīli l-āyah*). Ar-Rāzī disagrees. He believes that the literal sense (*zāhir al-laḥẓ*) of this particular verse should not be abandoned as there is no need for interpretation.¹⁹ On this basis, ar-Rāzī proceeds to provide a detailed exposition of this verse, one that is both anchored in the science of logic and which upholds the literal sense of the Qur’ān. Ar-Rāzī starts with some basic logical principles:

“If the Lord of Mercy had a son I would be the first of the ones worshipping [him],” is a proposition composed of two propositions; one of which [is] His saying, “If the Lord of Mercy had a son,” and the other [is] His saying, “I would be the first of the ones worshipping [him].” The protasis particle—which is the word *in* (if)—was then inserted into the first proposition, and the apodosis particle—which is the [conjunction] *-fa*—was inserted into the second proposition. Thus, a single proposition resulted from their combination, which is the hypothetical proposition. If you know this, we say that a hypothetical proposition only entails that the antecedent implies the consequent (*lā tufidu illā kawna sh-shartī mustalziman li-l-jazā’*). It contains no indication as to whether the antecedent is true or false, or whether the consequent is true or false. In fact, we say [that] a true hypothetical proposition *may* be composed of two true propositions [i.e., the antecedent and the consequent are both true], or of two false propositions [i.e., the antecedent and the consequent are both false], or of a false antecedent and a true consequent, or of a true antecedent and a false consequent. As for the fourth configuration, which is [where] the true hypothetical proposition is composed of a true antecedent and a false consequent, it is impossible (*fa-hādhā muḥāl*).²⁰

19 Ar-Rāzī, *Mafātīḥ al-Ghayb*, XXVII: 230.

20 For this example *only* I have relied on the Būlāq edition; Fakhr ad-Dīn ar-Rāzī, *Mafātīḥ al-Ghayb* (*at-Tafsīr al-Kabīr*), 6 vols. (Cairo: Būlāq, 1862), v: 570. This is because I believe there is an error in the passage as it is printed in the edition I am using throughout this chapter; see ar-Rāzī, *Mafātīḥ al-Ghayb*, XXVII: 230.

In this passage, ar-Rāzī highlights that hypothetical propositions are true (i.e., the inference is correct) *if* there is a relation of implication between the antecedent and the consequent.²¹ In particular, ar-Rāzī discusses the truth conditions of implicative conditionals, asserting that only the fourth configuration renders hypothetical propositions impossible. The reasoning he gives for the latter point (a couple of lines later) is that it is impossible for truth to entail falsehood (*li-anna hādhā t-tarkība yalzamu minhu kawnu l-ḥaqqi mustalziman li-l-bāṭili wa-dhālika muḥāl*).²² When this theory is in place, ar-Rāzī applies it to the verse in question:

If you know this principle, let us return to the verse, and say [the following]. His words, “If the Lord of Mercy had a son I would be the first of the ones worshipping [him],” [amount to] a true hypothetical proposition [composed] of a false antecedent and a false consequent. [This is so] because our saying, “the Lord of Mercy had a son,” is false, and our saying, “I am the first worshipper of that son,” is false too. Yet, we have clarified that the fact that each one of them is false does not prevent the co-implication from being true (*lā yamna’u min an yakūna stilzāmu aḥadihimā li-l-ākharī ḥaqqan*) ... and we have explained that this construction does not indicate whether or not there is an acknowledgement of the existence of a son.²³

For ar-Rāzī, then, the statement is a hypothesis which is neither affirmed nor denied by the verse. After elaborating on a similar problem with Q. 21:22, ar-Rāzī concludes that it is possible to take Q. 43:81 at face value, and that there is no need at all for interpretation (*wa-annahū lā ḥājata fihi l-battata ilā t-ta’wīl*). Ar-Rāzī moves on to explain that the thrust of this verse is that the Prophet, in the verse, does not deny the existence of a son *just* for the sake of opposition and dispute. Rather, the Prophet—on ar-Rāzī’s reading of the verse—would have assented to the existence of a son if there was evidence to that effect. Next, ar-Rāzī notes that as-Suddī (d. 128/745) used to say that it is possible to read this verse according to its literal sense, and comments that his [ar-Rāzī’s] exposition is a testimony to what as-Suddī said (*yadullu ‘alā anna lladhī qālahū*

21 This is in line with what ar-Rāzī says on the formation of hypothetical propositions and on their truth conditions in *Manṭiq al-Mulakkhḥaṣ*, 214–217, 222. Also see Fakhr ad-Dīn ar-Rāzī, *Sharḥ al-Ishārāt wa-t-Tanbīhāt*, ed. by ‘Alī Reẓā Najafzāde, 2 vols. (Tehran: Anjoman-e Āthār va-Mofākher-e Farhangī, 1964), I: 149–150.

22 Ar-Rāzī, *Mafātīḥ al-Ghayb*, XXVII: 230–231.

23 Ar-Rāzī, *Mafātīḥ al-Ghayb*, XXVII: 231.

huwa l-ḥaqq).²⁴ This is a remarkable comment as it shows how ar-Rāzī is able to support early *tafsīr* authorities through the employment of *mantīq*. It is also possible that ar-Rāzī is trying to signal that his approach—that is, reading the verse at face value—is not novel. Another point that deserves to be noted is that although ar-Rāzī provides three further ways for interpreting the verse, he says that maintaining these far-fetched opinions is only admissible in cases of necessity (*innamā yakūnu li-ḍ-ḍarūrah*). And because his logic-based reading has already shown that there is no requirement for *taʿwīl*, he surmises that these views should be abandoned.²⁵ Finally, and as with the previous case, ar-Rāzī seems to be one of the earliest exegetes to introduce logic into the *tafsīr* of this verse.²⁶

Hypothetical propositions also provide the foundation for understanding another similar problem in Q. 3:144, “Muḥammad is only a messenger before whom many messengers have been and gone. If he died or was killed, would you revert to your old ways? If anyone did so, he would not harm God in the least. God will reward the grateful.” According to ar-Rāzī, the exegetical query activated by the verse is the following: God has explained in more than one verse—for example, Q. 39:30, “You [O Prophet] will certainly die, and so will they”—that the Prophet will not be killed but will rather die. So why does He say in this verse, “If he died or was killed”? That is, why does He entertain the possibility that the Prophet may be killed? Ar-Rāzī offers three responses. What concerns us most is the first response:

The truth of a hypothetical proposition does not require the truth of both its parts (*ṣidqu l-qadīyyati sh-sharṭiyyati lā yaqtaḍī ṣidqa juzʾayhā*). For you say: “If five was even, then it is divisible by two equal numbers.” Thus, the hypothetical is true and [i.e., even if] its two components are false. And God says, “If there had been in the heavens or earth any gods but Him, both heavens and earth would be in ruins” (Q. 21:22), and this is [a] true [proposition] even though they [i.e., the heavens and earth] do not contain gods, nor are they in ruins. The same applies here.²⁷

24 Ar-Rāzī, *Mafātīḥ al-Ghayb*, XXVII: 231–232.

25 Ar-Rāzī, *Mafātīḥ al-Ghayb*, XXVII: 232.

26 See Muqātil, *Tafsīr Muqātil*, III: 805; aṭ-Ṭabarī, *Jāmiʿ al-Bayān*, XX: 653–658; al-Māturīdī, *Taʿwīlāt Ahl as-Sunnah*, IX: 189; az-Zamakhsharī, *al-Kashshāf*, 996–997; Ibn ʿAṭīyyah, *al-Muḥarrar al-Wajīz*, VII: 564–565; Ibn al-Jawzī, *Zād al-Masīr*, VII: 331–332.

27 Ar-Rāzī, *Mafātīḥ al-Ghayb*, IX: 22–23.

The claim being made by ar-Rāzī is this: “If he died or was killed” is a true hypothetical proposition even though its constituents are false—it does *not* indicate that the Prophet will be killed. Thus understood, the verse does not stand in conflict with the Qur’ānic affirmation that the Prophet will die. The fact that ar-Rāzī adds two additional responses *after* this logic-based response highlights an integral aspect of ar-Rāzī’s own conception of the role of logic—either that logic has priority, for ar-Rāzī, over other interpretive arguments *in general*, or that the logical argument, *in this case only*, is much stronger than the other two. It is remarkable that some major works of *tafsīr* preceding ar-Rāzī do not even raise this question.²⁸ Even those who raise the question do not attempt to tackle it from a logical framework.²⁹

In the same vein, the logic of hypothetical propositions is summoned by ar-Rāzī to navigate a seemingly difficult verse which has bearings on the infallibility of the Prophet Muḥammad, Q. 10:94, “So if you are in doubt about what We have revealed to you, ask those who have been reading the scriptures before you. The Truth has come to you from your Lord, so be in no doubt and do not deny God’s signs.” On the face of it, the verse entertains the hypothetical possibility that the Prophet Muḥammad was doubting the truth of revelation. Thus, the verse troubled the *tafsīr* authorities preceding ar-Rāzī. Aṭ-Ṭabarī (d. 310/923), for instance, was of the opinion that the Prophet was in no doubt, and that the statement is a common Arabic mode of speech which does not imply any doubt. He also allowed the interpretation maintaining that, although the verse was addressed to the Prophet, the intended audience were those who did not yet believe in his prophethood.³⁰ Given his commitment to the doctrine of prophetic infallibility,³¹ ar-Rāzī sets out to defend the Prophet. He starts his commentary by classifying the exegetical approaches concerning this verse into two: the first understands the second-person singular masculine perfect verb, *kunta*, as an address to the Prophet, while the second treats the verse as directed to an implicit noun, *al-insān*, describing

28 See Muqātil, *Tafsīr Muqātil*, I: 305; aṭ-Ṭabarī, *Jāmi’ al-Bayān*, VI: 96–106; al-Māturīdī, *Ta’wīlāt Ahl as-Sunnah*, II: 497–500; Ibn ‘Aṭīyah, *al-Muḥarrar al-Wajīz*, II: 371–374; Ibn al-Jawzī, *Zād al-Masīr*, I: 469.

29 For instance, az-Zamakhsharī, *al-Kashshāf*, 198.

30 Aṭ-Ṭabarī, *Jāmi’ al-Bayān*, XII: 288–289. See also Muqātil, *Tafsīr Muqātil*, II: 248; az-Zamakhsharī, *al-Kashshāf*, 473–474; Abū Ishāq Aḥmad ath-Tha’labī, *al-Kashf wa-l-Bayān ‘an Tafsīr al-Qur’ān*, ed. by Ṣalāḥ Bā-’Uthmān et al., 33 vols. (Jeddah: Dār at-Tafsīr, 2015), XIV: 285–289.

31 On ar-Rāzī’s treatment of prophetic infallibility, see Fakhr ad-Dīn Muḥammad ar-Rāzī, *Iṣmat al-Anbiyā’*, ed. by Muḥammad Ḥijāzī (Cairo: Maktabat ath-Thaqāfah ad-Diniyyah, 1986).

“humankind” collectively. Clearly, the second approach prevents the problem from arising in the first place, and so ar-Rāzī’s discussion centers on the first approach which encompasses seven different interpretations.³² I shall concentrate here on the third of these, for it is based on logic. Ar-Rāzī presents it as follows:

And I say that the complete exposition on this matter (*tamāmu t-taqrīri fī hādhā l-bāb*) is that His saying, “So if you are in doubt then do this and this,” is a hypothetical proposition. And a hypothetical proposition neither contains an indication whatsoever that the antecedent occurred or not, nor does it indicate that the consequent occurred or not. Rather, it only contains a clarification that the essence of that antecedent implies the essence of that consequent (*bal laysa fihā illā bayānu anna māhiyyata dhālika sh-sharṭi mustalzimatun li-māhiyyati dhālika l-jazā’i faqaṭ*) ... The same applies here, [for] the verse indicates that if this doubt occurred, then it is incumbent to do this and this. But there is no indication in the verse whether or not the doubt occurred.³³

A remarkable feature of this discussion, which makes use of the basics of hypothetical propositions, is that ar-Rāzī describes it as the “complete exposition.” In other words, logic, for ar-Rāzī, is the most effective hermeneutical device *in this case*.

To sum up, the core thread underlying these three cases is that they seem to pose an exegetical problem for ar-Rāzī. In turn, he engages logic as the primary tool for challenging the apparent textual difficulty.³⁴

3.3 *The Categorical Connective Syllogistic (al-qiyās al-iqtirānī al-ḥamlī)*

The categorical connective syllogistic appears in ar-Rāzī’s *tafsīr* not infrequently. In particular, the first-figure appears the most, relative to the other figures. This is not surprising given the logical priority of the first-figure, for the following reasons: other figures are reduced to the first-figure, it is more nat-

32 Ar-Rāzī, *Mafātīḥ al-Ghayb*, xvii: 167–169.

33 Ar-Rāzī, *Mafātīḥ al-Ghayb*, xvii: 168.

34 Compare this with Averroes’ prioritizing of philosophical discourse, as stated by Richard C. Taylor, “‘Truth Does Not Contradict Truth’: Averroes and the Unity of Truth,” *Topoi* 19, no. 1 (2000): 3–16, at 10: “what Averroes is asserting here is that the primary approach to the understanding of reality and interpreting Religious Law is to be found with the Aristotelian method of philosophical demonstration and that all other methodologies are secondary to this.”

ural than the others, and its productivity is apparent.³⁵ In what follows, I will attend to three cases of the first-figure followed by an example illustrating the second-figure. Each case will reveal different aspects of ar-Rāzī's employment of the categorical connective syllogistic to interpret the Qur'ān.

I open with Q. 7:105 where Moses reportedly says to Pharaoh: "Proper it is for me that I say nothing about God but the truth, and I have brought you a clear sign from your Lord. Let the Children of Israel go with me." Ar-Rāzī begins by providing the overall interpretation of the verse: "the meaning [of the verse] is that the Prophet does not say but the truth." He then elaborates on how he arrives at his interpretation:

As if he said (*ka-annahū qāla*): "I am the prophet of God, and the prophet of God does not say but the truth." This produces, "I do not say but the truth." And given that the first premise is not apparent [i.e., in this case], while the second premise is apparent and manifest, he [i.e., Moses] mentioned what signifies the veracity of the first premise, and it is: "and I have brought you a clear sign from your Lord," which is the clear, compelling, miracle.³⁶

Here, ar-Rāzī reformulates Moses' words in terms of a first-figure categorical connective syllogistic. It can be expressed as follows:

I (*minor term*) am the Prophet of God (*middle term*)
 The Prophet of God (*middle term*) does not say but the truth (*major term*)

I (*minor term*) do not say but the truth (*major term*)

Rāzī takes it for granted that his reader will understand the basic logic applied to this verse, and this explains why he does not see it necessary to include the *complete* standard logical vocabulary (save for the verb indicating productivity, and the discussion on premises). In any case, it is a straightforward first-figure, and the two conditions of its productivity—that the minor be affirmative, and the major be universal—are fulfilled.³⁷ What is more, ar-Rāzī not only reads the verse syllogistically, but additionally claims that the verse contains support

35 Abū Ḥamid al-Ghazālī, *Maqāṣid al-Falāsifah*, ed. by Maḥmūd Bijū (Damascus: Maṭba'at aṣ-Ṣabāḥ, 2000), 30; ar-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 250; ar-Rāzī, *Sharḥ al-Ishārāt wa-t-Tanbīhāt*, 289.

36 Ar-Rāzī, *Mafātīḥ al-Ghayb*, xiv: 199.

37 Ar-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 253.

for the (suppressed) minor premise. This means that the verse, according to ar-Rāzī, has bearings on the truth of the minor premise—the fact that Moses brought his people a miracle attests to the first premise. Moreover, ar-Rāzī appears to be trying to portray Moses as one who is versed in logic—in addition to the previous quote, ar-Rāzī goes on to say that Moses' argument was founded on premises (*muqaddimāt*).³⁸

A second illustration of the first-figure categorical connective syllogistic is found in ar-Rāzī's comments on Q. 16:53, part of which reads: "Whatsoever blessing you possess comes from God." Ar-Rāzī's treatment of this verse entails four questions. Concerning the second one, ar-Rāzī says:

The scholars of our school (*aṣḥābunā*) have argued, on the basis of this verse, that faith is created by God (*anna l-īmāna innamā ḥaṣala bi-khalqi Llāh*). They said faith is a blessing, and every blessing is from God, on the basis of, "Whatsoever blessing you possess come from God." This produces that faith is from God.³⁹

It can be seen here that ar-Rāzī uses the verse as a proof for a minor premise in a first-figure syllogism, in order to support a particular theological position.⁴⁰

In the foregoing two cases, the first-figure syllogism was productive. I now move on to showcase an interpretation wherein ar-Rāzī attempts to refute an argument, based on the first-figure, through proving its falsity; namely, that it is *not* productive. The verse under investigation is Q. 21:2, "Whenever any fresh remembrance (*dhikr*) comes to them from their Lord, they listen to it playfully." The Mu'tazilah capitalize on the verse—in particular, the word *muḥdath*—as evidence for their theology of Divine speech; namely, that it is an utterance created in time. This is alluded to by az-Zamakhsharī (d. 538/1144) in *al-Kashshāf*,⁴¹

38 Ar-Rāzī, *Mafātīḥ al-Ghayb*, xiv, 199. In this regard, Philo of Alexandria claimed that Moses learned parts of the school curriculum from Greek teachers who were summoned from Greece to Egypt. This, I think, may have included logic. See F.H. Colson, *Philo Volume VI* (Cambridge, MA: Harvard University Press, 1935), 286–289. For some treatments of this verse before ar-Rāzī, see Muqātil, *Tafsīr Muqātil*, 11: 52; aṭ-Ṭabarī, *Jāmi' al-Bayān*, x: 342–343; al-Māturīdī, *Ta'wīlāt Ahl as-Sunnah*, iv: 517–519; Ibn 'Aṭīyyah, *al-Muḥarrar al-Wajīz*, iv: 13–14; Ibn al-Jawzī, *Zād al-Masīr*, 111: 237.

39 Ar-Rāzī, *Mafātīḥ al-Ghayb*, xx: 52.

40 For an insight into the preceding *tafsīr* literature, see Muqātil, *Tafsīr Muqātil*, 11: 472–473; aṭ-Ṭabarī, *Jāmi' al-Bayān*, xiv: 250–252; al-Māturīdī, *Ta'wīlāt Ahl as-Sunnah*, vi: 515–516; Ibn 'Aṭīyyah, *al-Muḥarrar al-Wajīz*, v: 368–370; Ibn al-Jawzī, *Zād al-Masīr*, iv: 456–457.

41 Az-Zamakhsharī, *al-Kashshāf*, 672.

and expressed more explicitly, before him, by ‘Abd al-Jabbār (d. 415/1024) in *Mutashābih al-Qur’ān* and al-Jushamī (d. 494/1101) in his Qur’ān commentary.⁴² This contrasts with the Ash‘arī conception of Divine speech as uncreated and eternal.⁴³

Ar-Rāzī explicitly states that the Mu‘tazilah have taken this verse as a proof-text for their doctrine and constructs their argument in the form a first-figure syllogism: “they said: ‘The Qur’ān is a remembrance, and the remembrance exists newly, so the Qur’ān exists newly’” (*al-Qur’ānu dhikrun wa-dh-dhikru muḥdathun fa-l-Qur’ānu muḥdath*). This syllogistic is then supplemented with the proofs for the premises. That is, ar-Rāzī substantiates, for the benefit of the Mu‘tazilah, the minor premise by a number of verses (Q. 12:104; 15:9; 36:69; 38:1; and 43:44), and supports the major premise with the present verse, Q. 21:2, in addition to Q. 26:5.⁴⁴

Having expounded the Mu‘tazilī position and provided its underlying proof-texts, ar-Rāzī—in defending the Ash‘arī position—suggests a novel solution.⁴⁵ His procedure involves questioning the Mu‘tazilī syllogistic from two different perspectives (*wa-l-jawābu ‘alayhi min wajhayn*). The first is to attack the minor premise, whereas the other move is to refute the major premise. The minor premise cannot be conceded, ar-Rāzī argues, because the term “remembrance” (*dhikr*) does not refer to the Qur’ān as Divine speech. Rather, it refers to the physical speech constituted of letters and sounds (*ishāratun ilā l-murakkabi min-a l-ḥurūfi wa-l-aṣwāt*). Understood in this way, the addition of the major premise (that remembrance exists newly) results in the conclusion that the physical speech occurs in time and this, ar-Rāzī continues, is not a point of contention; in fact, it is known by necessity (*wa-dhālīka mimmā lā nizā‘a fīhi bal ḥudūthuhū ma‘lūmun bi-ḍ-ḍarūrah*). What ar-Rāzī is saying is that it is correct to say that the *spoken words* are God’s creation. Put differently, the physical

42 ‘Abd al-Jabbār, *Mutashābih al-Qur’ān*, ed. by ‘Adnān Muḥammad Zarzūr, 2 vols. (Cairo: Dār at-Turāth, 1969), II: 496–497; Abū Sa’d al-Muḥassin al-Jushamī, *at-Tahdhīb fī at-Tafsīr*, ed. by ‘Abd ar-Raḥmān as-Sālimī, 10 vols. (Cairo: Dār al-Kitāb al-Miṣrī; Beirut: Dār al-Kitāb al-Lubnānī, 2018–2019), VII: 4784.

43 See Omar Farahat, *The Foundation of Norms in Islamic Jurisprudence and Theology* (Cambridge: Cambridge University Press, 2019), 96–127; Richard C. Martin, “Createdness of the Qur’ān,” in *Encyclopaedia of the Qur’ān*, ed. by Jane Dammen McAuliffe, http://dx.doi.org/10.1163/1875-3922_q3_EQCOM_00044, accessed May 25, 2022.

44 Ar-Rāzī, *Mafātīḥ al-Ghayb*, XXII: 140.

45 That is, when compared to the previous treatments in the *tafsīr* literature; see Muqātil, *Tafsīr Muqātil*, III: 70; aṭ-Ṭabarī, *Jāmi‘ al-Bayān*, XVI: 222; al-Māturīdī, *Ta’wīlāt Ahl as-Sunnah*, VII: 326; Ibn ‘Aṭīyyah, *al-Muḥarrar al-Wajīz*, VI: 151–152; Ibn al-Jawzī, *Zād al-Masīr*, V: 339.

words, like everything else, are God's creation. Thus, interpreting the *dhikr* as signifying the physical words demolishes the minor premise.

Having clarified how the minor premise can be impugned, ar-Rāzī turns his attention to the major premise. I quote him in full:

His words, "Whenever any fresh remembrance comes to them from their Lord, they listen to it playfully," do not signify that *all* [types of] remembrance occur in time, but rather signify [that] some remembrance occurs in time (*bal 'alā dhikrin mā muḥdath*). This is akin to one saying: "No honourable man enters this town but they hate him" (*lā yadkhulu hādhihi l-qaryata rajulun fādīlun illā yubghidūnah*). This does not mean that every man has to be honourable [i.e., *is* honorable], but [rather means] that among men are those who are honorable. On this reckoning, the verse *only* indicates that *some* remembrance occurs in time (*anna ba'da dh-dhikri muḥdath*). Thus, the structure of the statement (*naẓmu l-kalām*) becomes as follows: "The Qur'ān is a remembrance, and *some* remembrance occurs in time." This does not produce anything (*lā yuntiju shay'an*), just as the statement, "The human is an animal, and some animals are horses," is not productive. From this it becomes clear that what they [i.e., the Mu'tazilah] had thought was decisive does not produce a weak presumption, let alone decisiveness (*fa-ẓahara anna lladhī ẓannūhu qāṭi'an lā yufidu ẓannan ḍa'ifan faḍlan 'an-i l-qat'*).⁴⁶

Ar-Rāzī's main move here is to reconfigure the major premise rather than to challenge the minor premise. He now grants—if I understood him correctly—that the minor premise refers to the Qur'ān as Divine speech, and he accepts that Q. 21:2 underlies the major premise, but interprets it in a different way. He says that, linguistically, the verse does not mean that all forms of remembrance are created in time, but rather that some forms of remembrance occur in time. The result of this is that the major premise becomes: "*some* remembrance occurs in time." The syllogistic can now be presented as follows:

The Qur'ān is a remembrance
Some forms of remembrance occur in time

Not productive

⁴⁶ Ar-Rāzī, *Mafātīḥ al-Ghayb*, XXII: 140–141.

Assuming that his reader is aware of the conditions of productivity in the first-figure—namely, that the minor premise be affirmative and that the major premise be universal—ar-Rāzī declares this first-figure syllogism as not productive on the grounds that the major premise is particular. In other words, there is a violation of one of the conditions of productivity.⁴⁷ The upshot is that the verse does not *necessarily* indicate that the Qurʾān was created in time. All it says is that some types of *dhikr* occur in time—and this need not include the Qurʾān. In this way the Muʿtazilī evidence falls apart (in ar-Rāzī’s opinion).⁴⁸

I now proceed to the second-figure syllogism. Q. 41:33 reads: “Who speaks better than someone who calls people to God, does what is right, and says, ‘I am one of those devoted to God.’” The verse makes it clear that calling to God, in general, is the most beautiful of speech. Ar-Rāzī’s treatment of this verse constitutes five questions (*masā’il*). In the third one, ar-Rāzī swiftly launches into a series of categorical connective syllogisms; in fact, a compound syllogism (*qiyās murakkab*) in which the conclusion of a syllogism serves as the premise for the next one. He arrives at the conclusion that the call to prayer (*adhān*) is obligatory (*wājib*) and that it is subsumed within the signification of the verse. However, he immediately notes that the majority of jurists claimed that the call to prayer is *not* covered by this verse and is, therefore, not obligatory. Ar-Rāzī seems to be maintaining this latter opinion. This prompts him to try to exclude the *adhān* from the verse. Which is to say that he is trying to challenge

47 For the conditions of productivity in the first-figure, see ar-Rāzī, *Mantiq al-Mulakhkhaṣ*, 253.

48 An alternative way of countering the Muʿtazilī interpretation, and thereby refuting the major premise, is to understand the term *muḥdath* as indicating the “action/process of revelation,” *not* as describing the nature of Divine speech. In other words, the discussion of the Qurʾān’s eternity or otherwise is irrelevant to the verse. This is argued, for instance, by Maḥmūd al-Ālūsī, *Rūḥ al-Maʿānī fī Tafsīr al-Qurʾān al-Aẓīm wa-s-Sabʿ al-Mathānī*, 30 vols. (Beirut: Dār Iḥyāʾ at-Turāth al-ʿArabī, n.d.), xvii: 7–8, as he says: “the remembrance was described in this way [i.e., that it is *muḥdath*] with regard to its revelation, not vis-à-vis its essence” (*bi-ʿtibārī tanzīlīhī lā bi-ʿtibārī naḥṣīh*). This interpretation, he adds, is what the context requires. Thus, the verse means: “although they hear the Qurʾān, and even though it is revealed to them repeatedly, they are heedless.” Ibn ʿAshūr, *at-Taḥrīr wa-t-Tamwīr*, xvii: 11, shares the same opinion, explaining that *muḥdath* in the verse is that which “is newly revealed in a repeated manner” (*al-jadīdu nuzūluḥū mutakarriran*). He adds: “by *muḥdath* is not intended that which stands in opposition to ‘eternal’ in the terminology of Islamic theology, for this [interpretation] is not fitting with the context” (*wa-laysa l-murādu bi-muḥdathīn mā qābala l-qadīma fī ṣṭilāḥi ʿilmi l-kalāmi li-ʿadami munāsabatihī li-sīyāqi n-naẓm*). Note here that although these two authors share ar-Rāzī’s ultimate conclusion, their presentation of the arguments is free from logical vocabulary.

the conclusion which was generated, in the first place, through the compound syllogism. In a way, he will be employing logic *against* logic. Ar-Rāzī writes:

And the decisive evidence (*wa-d-dalīlu l-qāṭiʿ*) [i.e., that the *adhān* is not included in the verse] is that the calling which is intended by this verse (*anna d-daʿwata l-murādāta bi-hādhihi l-āyah*) has to be the best of speech, and it has been established that the call to prayer (*al-adhān*) is not the best of speech ... [therefore,] it follows from the second-figure (*min-a sh-shakli th-thānī*) that what enters under this verse is *not* the call to prayer.⁴⁹

According to this passage, the logical structure of the argument can be schematized as follows:

The calling intended by the verse (*minor term*) is the best of speech (*middle term*)

The call to prayer (*major term*) is not the best of speech (*middle term*)

The calling intended by the verse (*minor term*) is *not* the call to prayer (*major term*)

As ar-Rāzī states clearly, this is a second-figure categorical connective syllogistic. The argument is consistent with his stipulations in *Manṭiq al-Mulakkhkhaṣ* on the second-figure. That is to say that the middle term (*al-hadd al-awsaṭ*) is predicate in both propositions and the figure does not produce an affirmative; rather the product (the judgement) is a negative. Furthermore, the two conditions for the productivity of this figure, which ar-Rāzī lays down in *Manṭiq al-Mulakkhkhaṣ*, are fulfilled: that the two premises differ in quality (here, the minor premise is affirmative and the major premise is negative) and that the major premise be universal (on my reading, it is a universal proposition even though it is not expressed with a quantifier—a *sūr*—because the definite article (*al-*) seems to be standing in the place of the quantifier).⁵⁰ Key to understanding ar-Rāzī's use of logic is to note that he describes his second-figure inference as the decisive evidence (*ad-dalīl al-qāṭiʿ*)—it supersedes any

49 Ar-Rāzī, *Mafātīḥ al-Ghayb*, xxvii: 126–127.

50 Ar-Rāzī, *Manṭiq al-Mulakkhkhaṣ*, 259–261. On substituting the quantifier with the definite article, see al-Anṣārī, *al-Maṭlaʿ Sharḥ Ṭisāghūjī* (Cairo: Būlāq, 1282 [1865]), 13. For a brief, yet useful, example of how the conditions for productivity can be applied to test the validity of a “claimed” second-figure syllogistic, see the comments on Q. 28:26 in al-Ālūsī, *Rūḥ al-Maʿānī*, xx: 66.

other method for interpreting *this* Qur'ānic verse. In other words, the answer is only found in logic. Tentatively speaking, it seems that nobody before ar-Rāzī applied logical theory to this verse.⁵¹

3.4 *The Exceptive Syllogistic (al-qiyās al-istithnā'ī)*

I now move on to illustrate how ar-Rāzī applies the exceptive syllogistic to resolve textual difficulties and theological questions. The case in point is Q. 11:106–107, “The wretched ones will be in the Fire, sighing and groaning, there to remain for as long as the heavens and earth endure, unless your Lord wills otherwise: your Lord carries out whatever He wills.” The specific concern is with the phrase *khālidīna fihā mā-dāmat-i s-samāwātu wa-l-arḍu illā mā shā'a Rabbuk*. In particular, the question is whether the punishment in the Fire is everlasting. The doctrinal commitment against which ar-Rāzī perceived the verse to generate this problem is the opinion of the overwhelming majority of Muslim scholars that the punishment of disbelievers is everlasting. Ar-Rāzī states that some people—the Mu'tazilah, apparently—said that the punishment is not eternal (*qāla qawmun inna 'adhāba l-kuffāri munqaṭi'un wa-lahā nihāyah*), basing their opinion on rational inference and Qur'ānic verses, one of which is Q. 11:107. Ar-Rāzī explicates two ways through which those scholars invoke this verse. One of them, as ar-Rāzī formulates it, is a first-figure categorical connective syllogistic.⁵² It could be formalized as follows:

The duration of the punishment (*minor term*) is equivalent to the duration of the existence of the heavens and earth (*middle term*)

The duration existence of the heavens and earth (*middle term*) is finite (*major term*)

The duration of the punishment (*minor term*) is finite (*major term*).

This configuration is a first-figure as the middle term is subject in the major premise and predicate in the minor premise. Having set his adversaries' argument, ar-Rāzī proceeds to lay down two ways through which scholars have responded to the Mu'tazilī interpretation of the verse. Next, and after recording a further objection, ar-Rāzī provides his unique, logic-centric, interpretation

51 For exegetical treatments of this verse in the *tafsīr* tradition before Rāzī, see Muqātil, *Tafsīr Muqātil*, 111: 742–743; aṭ-Ṭabarī, *Jāmi' al-Bayān*, xx: 429–431; al-Māturīdī, *Ta'wīlāt Ahl as-Sunnah*, ix: 80–81; Ibn 'Aṭīyyah, *al-Muḥarrar al-Wajīz*, vii: 483; Ibn al-Jawzī, *Zād al-Masīr*, vii: 255–257.

52 Ar-Rāzī, *Mafātīḥ al-Ghayb*, xviii: 64.

that upholds the majority view concerning the duration of hell-fire and which, in his opinion, serves to neutralize the Mu'tazilī interpretation.⁵³ Ar-Rāzī says:

Know that the true answer in my opinion (*al-jawābu l-ḥaqqu 'indī*), regarding this matter, is something else. That is, it is known from the verse that so long as the heavens and earth are enduring, their [i.e., the ones being punished] remaining in the Fire continues. This implies that whenever the stipulation obtains the stipulated obtains (*kulla-mā ḥaṣala sh-sharṭu ḥaṣala l-mashrūṭ*), but does not imply that in the absence of the stipulation, the stipulated does not exist (*wa-lā yaqtaḍī annahū idhā 'udima sh-sharṭu yu'damu l-mashrūṭ*). Contemplate [lit., "don't you see"] that we say, "If this is a man, then he is an animal." If [then] we say, "but he is a man," the product is that he is an animal. If, however, we say, "but this is not a man," it does not follow that he is not an animal. [This is so] because it has been established in the science of logic (*ṭhabata fī 'ilmi l-manṭiq*) that excepting the contradictory of the antecedent is not productive (*anna stithnā'a naqḍi l-muqaddami lā yuntiju shay'an*).

After this academic explanation, as it were, ar-Rāzī proceeds to apply the theory to the Qur'ānic verse under discussion:

So is the case here. If we say, "If the heavens endure, their punishment endures," and [then] we say, "but the heavens endure," it follows that their punishment exists. But if we say, "but the heavens do not endure anymore," it does not follow that their punishment does not endure (*lam yalzam 'adamu dawāmi 'iqābihim*).⁵⁴

Here, ar-Rāzī is making an argument based on a conditional exceptive syllogism (*qiyās istithnā'ī sharṭī mutṭaṣil*). The key logical principle—that excepting the contradictory of the antecedent is not productive—is found in *Manṭiq al-Mulakhkhaṣ* where the rationale behind this maxim is given too.⁵⁵ The argument, as applied to the verse, could be unpacked as follows. First, there

53 It is unique when compared to the treatments of this passage in the *tafsīr* works before Rāzī. See, for instance, Muqātil, *Tafsīr Muqātil*, II: 298–299; aṭ-Ṭabarī, *Jāmi' al-Bayān*, XII: 578–584; al-Māturīdī, *Ta'wīlāt Ahl as-Sunnah*, VI: 185–187; Ibn 'Aṭīyyah, *al-Muḥarrar al-Wajīz*, V: 19–21; Ibn al-Jawzī, *Zād al-Masīr*, IV: 159–161.

54 Ar-Rāzī, *Mafātīḥ al-Ghayb*, XVIII: 66.

55 Ar-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 421. However, in his commentary on Q. 2:251—and drawing, as he says, on Avicenna—al-Ālūsī, *Rūḥ al-Ma'ānī*, II: 174, argues that excepting the contradictory of the antecedent can be productive in some cases.

is a conditional hypothetical premise containing the conclusion: “If the heavens and earth endure (*antecedent*), then the punishment endures (*consequent*).” Next, we have a *premise denying—hence, repeating—part of the hypothetical premise*: “But (*exceptive*) the heavens and earth do not endure (*contradictory of the antecedent*).” This combination is not productive—neither the consequent (that the punishment endures), nor its contradictory (that the punishment does not endure) follow. The upshot is that, through a logical argument, the verse no longer poses a threat to Ash‘arī theology—it does not indicate that the Fire punishment is finite. In other words, ar-Rāzī reconciles between the verses implying that the heavens and earth cease to exist and between his theology on infinite punishment.

The exceptive syllogistic also features in the commentary on Q. 4:23, on the prohibitions concerning marriage partners. The unit to be discussed is: “[You are forbidden to take as wives] two sisters simultaneously.” In his discussion, ar-Rāzī digresses into a legal question—whether it is permissible for one to marry his divorcee’s sister while his divorcee is still in her waiting period following the cessation of marriage (*nikāḥu l-ukhti fī ‘iddati l-ukhti l-bā’in*). Pace some other schools of law, the Shāfi‘ī opinion deems this permissible, and ar-Rāzī endorses this. One objection levelled at the Shāfi‘ī opinion—and is thereby taken as evidence in favor of the opposing view—is that a waiting period is obligatory and that the one divorcing is required to provide maintenance. In this light, the marriage is still effective from some aspects (*an-nikāḥu bāqin min ba‘ḍi l-wujūh*). Ar-Rāzī attempts to dispel this objection by applying logic:

Know that if the marriage is realized, then so is the ability to retain her [i.e., the wife] (*in ḥasala n-nikāḥu ḥasalat-i l-qudratu ‘alā ḥabsihā*). And this does not produce that the ability to retain her happened *by virtue of* the marriage. [This is so] because excepting the consequent is not productive (*li-anna stithnā’a ‘ayni t-tālī lā yuntij*).⁵⁶

The ultimate objective of ar-Rāzī is to conclude that the existence of a waiting period need not necessitate the validity of the marriage. He does so by invoking a conditional exceptive syllogism. Unlike the above example, here ar-Rāzī provides a condensed formulation of the syllogism and leaves it for the reader to figure out the full logical structure. Thus, it may be instructive to re-construct the syllogism as follows:

⁵⁶ Ar-Rāzī, *Mafātīḥ al-Ghayb*, x: 38–39.

If the marriage exists (*antecedent*), the ability to retain the wife exists (*consequent*)
 But (*exceptive*) the ability to retain the wife exists (*consequent*)

Not productive

The key principle is that excepting the consequent is not productive.⁵⁷ Therefore, it does not follow that, in this case, the marriage subsists, nor that it has ceased to exist. In fact, ar-Rāzī enforces his syllogism by saying that the ability to retain the wife—effectively, the waiting period—could be by virtue of something else (*bi-ṭarīqin ākhar*), not the marriage.⁵⁸

3.5 *The Reductio Ad Absurdum—Qiyās al-Khulf*

The argument per impossible, or *reductio ad absurdum*, is essentially affirming an argument by showing that its contradictory is false. In other words, it involves setting aside the position that one wishes to prove and establishing instead that its contrary is invalid. Proving that one of the opposites is invalid—that it contains irresolvable contradictions—entails that the other opposite is valid. That is done by adding to the contradictory of one's claim a true premise with which the contradictory produces a false conclusion. And since a false conclusion comes about through false premises, and since one of them is plainly true, the falsity of the disputed premise is identified.⁵⁹ The *reductio ad absurdum* essentially reverts to the demonstrative method known as *as-sabr wa-t-taqṣīm* which is applied by ar-Rāzī as a method of argument in various works.⁶⁰

One place in which this indirect demonstration appears is ar-Rāzī's commentary on Q. 6:91, part of which reads:

They have no grasp of God's true measure when they say, "God has sent nothing down to a human." Say, "Who was it who sent down the Scrip-

57 Ar-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 421.

58 Ar-Rāzī, *Mafātīḥ al-Ghayb*, x: 39. For other treatments, see Muqātil, *Tafsīr Muqātil*, 1: 366; Abū Bakr Muḥammad Ibn al-'Arabī, *Aḥkām al-Qur'ān*, ed. by Muḥammad 'Abd al-Qādir 'Aṭā, 4 vols. (Beirut: Dār al-Kutub al-Ilmiyyah, 2003), 1: 488; Muḥammad al-Qurṭubī, *al-Jāmi' li-Aḥkām al-Qur'ān*, ed. by 'Abd al-Muḥsin at-Turkī et al., 24 vols. (Beirut: Mu'assasat ar-Risālah, 2006), vi: 197.

59 For the *reductio ad absurdum*, see al-Ghazālī, *Maqāṣid al-Falāsifah*, 40; ar-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 332–333.

60 Frank Griffel, *The Formation of Post-classical Philosophy in Islam* (New York: Oxford University Press, 2021), 506–517.

ture, which Moses brought as a light and a guide to people, which you made into separate sheets, showing some but hiding many?”

Ar-Rāzī attempted to show how this verse counters the claim of those saying that God sent nothing down to any human. His discussion draws on al-Ghazālī:

Al-Ghazālī philosophized and claimed that this verse is based on the second of the logical figures. And that is because its gist is that, “Moses, God sent down to him something” (*anna mūsā anzala Llāhu ta‘ālā ‘alayhi shay’an*), and “any human, God *did not* send down anything to him” (*wa-aḥadun min-a l-bashari mā anzala Llāhu ‘alayhi shay’an*). It is [thus] produced from the second-figure that, “Moses is not a human.” And this is a *per impossible* (*wa-hādhā khulfun muḥāl*). This impossibility is neither because of the configuration of the syllogistic, nor does it relate to the truth of the first premise. Therefore, the only remaining possibility is that the impossibility is generated from assuming the truth of the second premise, which is their saying: “any human, God *did not* send down anything to him.” So, it is incumbent to declare it [i.e., the second premise] false. Thus, it is established that this verse’s testimony for the sought-out result (*fa-thabata anna dalāta hādhihi l-āyati ‘alā l-maṭlūb*) only obtains (*innamā taṣiḥḥu*) when admitting the soundness of the second-figure and the *reductio ad absurdum*.⁶¹

In this passage the ultimate conclusion—that God indeed sent down revelation upon some humans—is arrived at by invoking the second-figure categorical connective syllogistic and the *reductio ad absurdum*. The following is a reformulation of ar-Rāzī’s discussion:

Moses (*minor term*), God sent down to him something (*middle term*)
 Any human (*major term*), God *did not* send down anything to him (*middle term*)

Moses (*minor term*) is not a human (*major term*)

Here, the *reductio* is essentially a second-figure syllogistic. Ar-Rāzī constructs it by supplying the *true* minor premise—that God revealed to Moses something

⁶¹ Ar-Rāzī, *Mafātīḥ al-Ghayb*, xiii: 82.

—which seems to be accepted by his adversaries. This premise is also mentioned in the verse itself, “Who was it who sent down the Scripture, which Moses brought as a light and a guide to people.” Next, ar-Rāzī sets aside his own argument and instead provides its contradictory—“God has sent nothing down to a human”—in the form of the major premise. He also rearranges the wording of the verse, “God has sent nothing down to a human,” to fit the requirements of the second-figure; that is, to ensure that the middle term is predicate in both propositions. Having set the second-figure in place and fulfilled its conditions, the conclusion that follows is: “Moses is not a human.” Clearly, this conclusion is false, and its falsity will be acknowledged by the adversaries. Now, the source for this false conclusion, ar-Rāzī asserts, can only be the major premise. Thus, if this premise is false, then its contradictory, namely, that “God sent down something to a human,” must be true.⁶² It is also pertinent to note the concluding comment made by ar-Rāzī: that the verse *only* indicates its intended meaning *if* one accedes to the second-figure and the *reductio*. This passing comment is of significance for it highlights that, for ar-Rāzī, logic can at times be the *only way* to arrive at the true meanings of the Qurʾān. From a different angle, it seems as if ar-Rāzī is saying that the verse *implicitly* provides proof for the soundness of two logical notions—the second-figure and the *reductio ad absurdum*. In other words, the Qurʾān is *authenticating* logical theory.

A further point is in order. We have seen that at the beginning of the passage ar-Rāzī ascribes this interpretation, based on the second-figure, to al-Ghazālī. This may very well be true. However, in *al-Qiṣṭās al-Mustaqīm* al-Ghazālī argues that God taught the Prophet the third-figure syllogism—precisely, al-Ghazālī describes it as the “minor-balance” (*al-mīzān al-aṣghar*)—through the Qurʾān, citing this same verse. His argument can be represented in the following manner:

Moses (*middle term*) is a human (*minor term*)

Moses (*middle term*), the Scripture was revealed to him (*major term*)

Some humans (*minor term*), a Scripture was revealed to them (*major term*)

After providing the third-figure syllogistic, al-Ghazālī proceeds to say that the first premise is known by sense-perception (*maʿlūmun bi-l-ḥiss*), and that the

62 For the exegesis before ar-Rāzī, see Muqātil, *Tafsīr Muqātil*, I: 574–575; aṭ-Ṭabarī, *Jāmiʿ al-Bayān*, IX: 393–401; al-Māturīdī, *Taʾwīlāt Ahl as-Sunnah*, IV: 165–170; Ibn ʿAṭīyyah, *al-Muḥarrar al-Wajīz*, III: 415–417; Ibn al-Jawzī, *Zād al-Masīr*, III: 82–84.

second premise is derived from the self-confession of those mentioned in the verse. Moreover, he describes the conclusion as a particular proposition (*qadīyyah khāṣṣah*) that abolishes the general claim (*wa-tubṭilu d-daʿwā l-ʾammah*).⁶³

Likewise, in another book, *Asās al-Qiyās*, al-Ghazālī quotes the same verse, formulating it as a third-figure (even if not describing it so) in a manner consistent with *al-Qisṭās al-Mustaqīm*.⁶⁴ From this one may conclude, with a degree of confidence, that al-Ghazālī ascribed the third-figure to this verse (Q. 6:91), at least in two of his books. In view of this, how can we explain ar-Rāzī's depiction of al-Ghazālī; namely, his saying that al-Ghazālī attributed the second-figure to the present verse? It is possible that he is referring to another source wherein al-Ghazālī framed the verse as a second-figure. Alternatively, though I am hesitant to suggest this, ar-Rāzī may have been writing *from memory*—perhaps he recalled that al-Ghazālī derived a syllogism from this verse but did not identify it correctly because he was not, at the time of writing this commentary, copying from *al-Qisṭās al-Mustaqīm*. Rather, he imposed his *own interpretation* of the verse on al-Ghazālī.

Interestingly, in his *Rūḥ al-Maʿānī*, al-Ālūsī records both interpretations—the one based on the third-figure, and the one founded on the second-figure. As for the former, he writes: “some people have claimed that the verse contains an argument from the third-figure” (*wa-min-a n-nāsi man-i ddaʿā anna fī l-āyati hujjatan min-a sh-shakli th-thālith*). After explaining the syllogism, he says that the conclusion is a particular affirmative that falsifies the universal negative (*wa-n-natījatu mūjabatun juzʾiyyatun tukadhdhibu s-sālibata l-kullīyyah*). Al-Ālūsī further explicates that both premises of this syllogism are productive even though they are singular—and it is known that the third-figure requires one of the premises to be a universal—because the singular is potentially a universal (*li-anna sh-shakhṣiyyata ʾindahum fī ḥukmi l-kullīyyah*). One of the “people” mentioned by al-Ālūsī is certainly al-Ghazālī, though it is surprising that al-Ālūsī does not identify him. Al-Ālūsī then moves on to quote ar-Rāzī on the second-figure interpretation of this verse; likewise, attributing it to al-Ghazālī.⁶⁵ If I am correct in my previous claim on ar-Rāzī's oversight, then this same misattribution by al-Ālūsī was possibly because he was reliant on ar-Rāzī.

63 Abū Ḥamid al-Ghazālī, *al-Qisṭās al-Mustaqīm*, ed. by Maḥmūd Bijū (Damascus: al-Maṭbaʿah al-ʾIlmiyyah, 1993), 32–33.

64 Abū Ḥamid al-Ghazālī, *Asās al-Qiyās*, ed. by Fahd b. Muḥammad as-Sadḥān (Riyadh: Maktabat al-ʿUbaykān, 1413 [1993]), 30.

65 Al-Ālūsī, *Rūḥ al-Maʿānī*, VII: 219.

In all cases, it is significant that this verse, Q. 6:91, is a fertile site for the application of logic, and that it can be taken as a model for not one but in fact two syllogistic figures.

4 Conclusion

Although this article is only a preliminary exploration into the role of logic in ar-Rāzī's *tafsīr*, I think at this stage that some conclusions may be made, even if tentatively.

First of all, ar-Rāzī's understanding of the art of logic informs his understanding of the Qur'ān; that is, he applies logical concepts to elaborate on the Qur'ān and to solve exegetical problems. Since in the *tafsīr* ar-Rāzī is concerned about the correct meaning (or meanings) of the Qur'ān, his incorporation of logic demonstrates the high premium he places on logic for a sound understanding of the Qur'ān. Furthermore, I think it is not an overestimation to suggest that in ar-Rāzī's system of Qur'ānic exegesis, logic is an indispensable interpretive tool. Even more, it could be inferred from ar-Rāzī's exegetical practice that *tafsīr* based on logic is, at least sometimes, superior to *tafsīr* based on other interpretive tools.

Secondly, ar-Rāzī assumes his readers' familiarity with logic. In other words, we need to have some control over ar-Rāzī's logic if we are to understand his logic-embedded exegesis. However, the logic ar-Rāzī applies to the Qur'ān does not seem to be advanced—it is usually the basics of logic. More generally, this consideration sheds light on the extent to which competence in logic is required to understand the Qur'ān.

Third, the investigation leads us to ask the following question: does the procedural method of ar-Rāzī, vis-à-vis logic, distinguish his work from Qur'ān commentaries that have preceded him? According to Jaffer, who was speaking more generally of ar-Rāzī's exegetical approach, ar-Rāzī's systematic procedure of Qur'ān commentary is "unprecedented in the *tafsīr* tradition."⁶⁶ Sinai was not persuaded by Jaffer's conclusion, writing: "On numerous occasions, Jaffer extols the revolutionary and radical novelty of al-Rāzī's exegetical approach ... and describes him as 'redesigning', 'recasting', or 'transforming' Sunni *tafsīr* ... Such statements appear hyperbolic and not always fully warranted."⁶⁷ Notwithstanding the point made by Sinai, my approach, as indicated in the article, was

66 Jaffer, *Rāzī: Master of Qur'ānic Interpretation*, 32.

67 Nicolai Sinai, "Rāzī: Master of Qur'ānic Interpretation and Theological Reasoning," *Journal of Islamic Studies* 28, no. 3 (2017): 369–374, at 371.

to cross-examine the case studies from ar-Rāzī's *tafsīr* against the commentaries that preceded him. Although the relevant material that was analysed in this article is limited and does not, therefore, permit categorical generalizations, the results of this examination give more weight to the conclusion that ar-Rāzī might have been the first *mufasssīr* to explicitly incorporate logic into a work devoted to Qur'ānic exegesis. I grant that al-Ghazālī (in *al-Qisṭās al-Mustaqīm* and other works) opened the doors for the logical interpretation of the Qur'ān, but it is ar-Rāzī who effectively and practically established the genre of logical Qur'ānic exegesis.

Finally, ar-Rāzī's approach to logic and the Qur'ān leads its reader to the conviction that—in ar-Rāzī's project—the Qur'ān and the logical sciences neither are, nor need be, in conflict. There seems to be an assumption that formal reasoning underlies the Qur'ān. In a sense, ar-Rāzī's reading of the Qur'ān through logic provides, to borrow from Boyarin (who was writing on the Talmud), a “double legitimization.”⁶⁸ That is, a legitimization for the Qur'ān in the sense that it is not foreign to other branches of human knowledge, and a legitimization for logic itself as a tool for comprehending the Qur'ān. For ar-Rāzī, the truths of the Qur'ān can indeed be reconciled with logic.

Bibliography

- ‘Abd al-Jabbār. *Mutashābih al-Qur’ān*. Ed. by ‘Adnān Muḥammad Zarzūr. 2 vols. Cairo: Dār at-Turāth, 1969.
- Abdalla, Bakinaz. “Evil and Responsibility in the Quran.” *Religious Studies* 61 (2025): 55–77.
- Abdel Haleem, M.A.S. *The Qur’an: A New Translation*. New York: Oxford University Press, 2005.
- Ahmed, Asad Q. “The Logic of God’s Knowledge.” In *Tradition and Reception in Arabic Literature: Essays Dedicated to Andras Hamori*. Ed. by Margaret Larkin and Jocelyn Sharlet. Wiesbaden: Harrassowitz, 2019, 153–160.
- al-Ālūsī, Maḥmūd. *Rūḥ al-Ma’ānī fī Tafsīr al-Qur’ān al-‘Azīm wa-s-Sab’ al-Mathānī*. 30 vols. Beirut: Dār Iḥyā’ at-Turāth al-‘Arabī, n.d.
- Alwishah, Ahmed and Hayes, Josh, eds. *Aristotle and the Arabic Tradition*. Cambridge: Cambridge University Press, 2015.
- al-Anṣārī, Zakariyyā. *Al-Maṭla’ Sharḥ Ṭāghūjī*. Cairo: Būlāq, 1282 [1865].
- Beall, Jc. “Christ—A Contradiction: A Defense of a Contradictory Christology.” *Journal of Analytic Theology* 7 (2019): 400–433.

68 Taken from Sergey Dolgopolski, *What Is Talmud? The Art of Disagreement* (New York: Fordham University Press, 2009), 74.

- Dolgopolski, Sergey. *What Is Talmud? The Art of Disagreement*. New York: Fordham University Press, 2009.
- El-Rouayheb, Khaled. *Relational Syllogisms and the History of Arabic Logic, 900–1900*. Leiden: Brill, 2010.
- Emery, Gilles. “Central Aristotelian Themes in Aquinas’s Trinitarian Theology.” In *Aristotle in Aquinas’s Theology*. Ed. by Gilles Emery, O.P. and Matthew Levering. Oxford: Oxford University Press, 2015, 21–28.
- Farahat, Omar. *The Foundation of Norms in Islamic Jurisprudence and Theology*. Cambridge: Cambridge University Press, 2019.
- al-Ghazālī, Abū Ḥāmid. *Al-Qiṣṭās al-Mustaqīm*. Ed. by Maḥmūd Bijū. Damascus: al-Maṭba‘ah al-‘Ilmiyyah, 1993.
- al-Ghazālī, Abū Ḥāmid. *Asās al-Qiyās*. Ed. by Fahd b. Muḥammad as-Sadhān. Riyadh: Maktabat al-‘Ubaykān, 1413 [1993].
- al-Ghazālī, Abū Ḥāmid. *Maqāṣid al-Falāsifah*. Ed. by Maḥmūd Bijū. Damascus: Maṭba‘at as-Ṣabāḥ, 2000.
- Griffel, Frank. *The Formation of Post-classical Philosophy in Islam*. New York: Oxford University Press, 2021.
- Gutas, Dimitri. *Avicenna and the Aristotelian Tradition*. Leiden: Brill, 2014.
- Gwynne, Rosalind Ward. *Logic, Rhetoric, and Legal Reasoning in the Qur’ān: God’s Arguments*. London and New York: Routledge, 2004.
- Harari, Orna. “Logic and Interpretation: Syllogistic Reconstructions in Simplicius’ Commentary on Aristotle’s Physics.” *History of Philosophy & Logical Analysis* 24, no. 1 (2021): 122–139.
- Hasnawi, Ahmad and Hodges, Wilfrid. “Arabic Logic up to Avicenna.” In *The Cambridge Companion to Medieval Logic*. Ed. by Catarina Dutilh Novaes and Stephen Read. Cambridge: Cambridge University Press, 2016, 45–66.
- Hene, Bernd. “Aristotelian and Stoic Syllogistic in the Anonymous Commentary on Plato’s Theaetetus.” *History of Philosophy & Logical Analysis* 24, no. 1 (2021): 44–70.
- Ibn al-‘Arabī, Abū Bakr Muḥammad. *Aḥkām al-Qur’ān*. Ed. by Muḥammad ‘Abd al-Qādir ‘Aṭā. 4 vols. Beirut: Dār al-Kutub al-‘Ilmiyyah, 2003.
- Ibn al-Jawzī, ‘Abd ar-Raḥmān. *Zād al-Masīr fī ‘Ilm at-Tafsīr*. Ed. by Zuhayr ash-Shāwīsh. 9 vols. Beirut: al-Maktab al-Islāmī and Dār Ibn Ḥazm, 2002.
- Ibn ‘Aṭīyyah, Abū Muḥammad. *Al-Muḥarrar al-Wajīz fī Tafsīr al-Kitāb al-‘Azīz (Tafsīr Ibn ‘Aṭīyyah)*. Ed. by ar-Raḥḥālāh al-Fārūq et al. 8 vols. Doha: Wizārat al-Awqāf wa-sh-Shu‘ūn al-Islāmiyyah, 2007.
- Jaffer, Tariq. *Rāzī: Master of Qur’ānic Interpretation and Theological Reasoning*. New York: Oxford University Press, 2014.
- James, Mark Randall. *Learning the Language of Scripture: Origen, Wisdom, and the Logic of Interpretation*. Leiden: Brill, 2021.
- al-Jushamī, Abū Sa’d al-Muḥassin. *At-Tahdhīb fī at-Tafsīr*. Ed. by ‘Abd ar-Raḥmān as-

- Sālimī. 10 vols. Cairo: Dār al-Kitāb al-Miṣrī; Beirut: Dār al-Kitāb al-Lubnānī, 2018–2019.
- Klein-Braslavy, Sara. *Without Any Doubt: Gersonides on Method and Knowledge*. Leiden: Brill, 2011.
- Lagarde, Michel. *Index du Grand Commentaire de Faḥr al-Dīn al-Rāzī*. Leiden: Brill, 1996.
- Manekin, Charles H. "Fallacies and Biblical Exegesis—The Case of Joseph ibn Kaspi." In *Fallacies in the Arabic, Byzantine, Hebrew and Latin Traditions*. Ed. by Laurent Cesalli, Leone Gazziero, Charles H. Manekin, Shahid Rahman, Tony Street, and Michele Trizio. Turnhout: Brepols Publishers, 2023, 209–230.
- Martijn, Marije. "If, then, therefore? Neoplatonic Exegetical Logic between the Categorical and the Hypothetical." *History of Philosophy & Logical Analysis* 24, no. 1 (2021): 3–43.
- Martin, Richard C. "Createdness of the Qurʾān." In *Encyclopaedia of the Qurʾān*. Ed. by Jane Dammen McAuliffe. http://dx.doi.org/10.1163/1875-3922_q3_EQCOM_00044. Accessed May 25, 2022.
- al-Māturīdī, Abū Maṣṣūr Muḥammad. *Taʾwīlāt Ahl as-Sunnah*. Ed. by Majdī Bā-Sallūm. 10 vols. Beirut: Dār al-Kutub al-ʿIlmiyyah, 2005.
- McCall, Thomas H. *Analytic Christology and the Theological Interpretation of the New Testament*. Oxford: Oxford University Press, 2021.
- Muqātil. *Tafsīr Muqātil b. Sulaymān*. Ed. by ʿAbd Allāh Shihātah. 5 vols. Beirut: Muʾassasat at-Tārīkh al-ʿArabī, 2002.
- Oulddali, Ahmed. "Lorsqu'un uṣūlī interprète le Coran: aspects de la réception de la théorie légale dans l'exégèse de Faḥr al-Dīn al-Rāzī." *Arabica* 71, no. 1–2 (2024): 141–180.
- Oulddali, Ahmed. *Raison et révélation en Islam: Les voies de la connaissance dans le commentaire coranique de Faḥr al-Dīn al-Rāzī (m. 606/1210)*. Leiden: Brill, 2006.
- Colson, F.H. *Philo Volume VI*. Cambridge, MA: Harvard University Press, 1935.
- al-Qurṭubī, Muḥammad. *Al-Jāmiʿ li-Aḥkām al-Qurʾān*. Ed. by ʿAbd al-Muḥsin at-Turkī et al. 24 vols. Beirut: Muʾassasat ar-Risālah, 2006.
- Ravitsky, Aviram. "Aristotelian Logic and Talmudic Methodology: The Commentaries on the 13 Hermeneutic Principles and their Application of Logic." In *Judaic Logic*. Ed. by Andrew Schumann. Piscataway, NJ: Gorgias Press, 2010, 117–144.
- ar-Rāzī, Fakhr ad-Dīn. *Al-Maṭālib al-ʿĀliyah min al-ʿIlm al-Ilāhī*. Ed. by Aḥmad Ḥijāzī as-Saqqa. 9 vols. Beirut: Dār al-Kitāb al-ʿArabī, 1987.
- ar-Rāzī, Fakhr ad-Dīn. *ʿIṣmat al-Anbiyāʾ*. Ed. by Muḥammad Ḥijāzī. Cairo: Maktabat ath-Thaqāfah ad-Dīniyyah, 1986.
- ar-Rāzī, Fakhr ad-Dīn. *Mafātiḥ al-Ghayb (at-Tafsīr al-Kabīr)*. 6 vols. Cairo: Būlāq, 1862.
- ar-Rāzī, Fakhr ad-Dīn. *Mafātiḥ al-Ghayb (at-Tafsīr al-Kabīr)*. 32 vols. Beirut: Dār al-Fikr, 1981.
- ar-Rāzī, Fakhr ad-Dīn. *Manṭiq al-Mulakhkhaṣ*. Ed. by Aḥad Farāmarz Qarāmalekī and Ādine Aṣgharīnezhād. Tehran: Dāneshgāh-e Emām Ṣādeq, 2002.

- ar-Rāzī, Fakhr ad-Dīn. *Sharḥ al-Ishārāt wa-t-Tanbīhāt*. Ed. by 'Alī Reżā Najafzāde. 2 vols. Tehran: Anjoman-e Āthār va-Mofākher-e Farhangī, 1964.
- Schöck, Cornelia. *Koranexegese, Grammatik und Logik: Zum Verhältnis von arabischer und aristotelischer Urteils-, Konsequenz, und Schlusslehre*. Leiden: Brill, 2006.
- Sinai, Nicolai. "Rāzī: Master of Qur'ānic Interpretation and Theological Reasoning," *Journal of Islamic Studies* 28, no. 3 (2017): 369–374.
- Street, Tony. "Arabic Logic." In *Handbook of the History and Philosophy of Logic, Volume 1 Greek, Arabic and Indian Logic*. Ed. by Dov M. Gabbay and John Woods. Dordrecht: New-Holland, 2004, 523–596.
- Street, Tony. "Concerning the Life and Works of Fakhr al-Dīn al-Rāzī." In *Islam: Essays on Scripture, Thought and Society. A Festschrift in Honour of Anthony H. Johns*. Ed. by Peter G. Riddell and Tony Street. Leiden: Brill, 1997, 135–146.
- Street, Tony. "Fahṛaddīn ar-Rāzī's critique of Avicennan logic." In *Logik und Theologie. Das Organon im arabischen und im lateinischen Mittelalter*. Ed. by U. Rudolph and D. Perler. Leiden: Brill, 2005, 99–116.
- Street, Tony. *Najm al-Dīn al-Kātib's al-Risālah al-Shamsiyyah: An Edition and Translation with Commentary*. New York: New York University Press, 2024.
- Strobino, Riccardo. "Ibn Sina's Logic." In *The Stanford Encyclopedia of Philosophy* (Fall 2018 Edition). Ed. by Edward N. Zalta. <https://plato.stanford.edu/archives/fall2018/entries/ibn-sina-logic/>. Accessed February 27, 2024.
- Strobino, Riccardo. *Avicenna's Theory of Science: Logic, Metaphysics, Epistemology*. Oakland: University of California Press, 2021.
- Synan, Edward. "The Four 'Senses' and Four Exegetes." In *With Reverence for the Word: Medieval Scriptural Exegesis in Judaism, Christianity, and Islam*. Ed. by Jane Dammen McAuliffe, Barry D. Walfish, and Joseph W. Goering. New York: Oxford University Press, 2003, 225–236.
- aṭ-Ṭabarī, Ibn Jarīr. *Jāmi' al-Bayān 'an Ta'wīl Āy al-Qur'ān*. Ed. by 'Abd Allāh b. 'Abd al-Muḥsin at-Turkī et al. 26 vols. Riyadh: Dār 'Ālam al-Kutub li-ṭibā'ah wa-n-Nashr wa-t-Tawzī', 2003.
- Taylor, Richard C. "'Truth Does Not Contradict Truth': Averroes and the Unity of Truth," *Topoi* 19, no. 1 (2000): 3–16.
- ath-Tha'labī, Abū Ishāq Aḥmad. *Al-Kashf wa-l-Bayān 'an Tafsīr al-Qur'ān*. Ed. by Ṣalāḥ Bā-'Uthmān et al. 33 vols. Jeddah: Dār at-Tafsīr, 2015.
- Whittingham, Martin. *Al-Ghazālī and the Qur'ān: One Book, Many Meanings*. London: Routledge, 2007.
- Wohlman, Avital. *Al-Ghazali, Averroes and the Interpretation of the Qur'an: Common Sense and Philosophy in Islam*. Transl. by David Burrell. London: Taylor and Francis Group, 2009.
- az-Zamaksharī, Jār Allāh Maḥmūd b. 'Umar. *Al-Kashshāf 'an Ḥaqā'iq at-Tanzīl wa-Uyūn al-Aqāwīl fī Wujūh at-Ta'wīl*. Ed. by Khalīl Shīḥā. Beirut: Dār al-Ma'rifah, 2009.

A Problem with the Wholly Hypothetical Syllogism: Some 13th-Century Arabic Discussions

Khaled El-Rouayheb

Until the time of Avicenna, it was standard in the Arabic logical tradition to divide syllogisms into categorical (*ḥamlī*) and hypothetical (*shartī*). The latter included the following three argument schemes:

(i) modus ponens:

If p then q.
p.
∴ q.

(ii) modus tollens:

If p then q.
Not-q.
∴ Not-p.

(iii) disjunctive syllogism:

p or q.
Not-p.
∴ q.

Avicenna and the post-Avicennan logical tradition accepted these inference-schemes, but also recognized what they termed the “connective-hypothetical syllogisms,” including what in the European logical tradition is called “wholly” or “purely” hypothetical syllogisms:¹

1 Tony Street, “Arabic Logic,” in D.M. Gabbay & J. Woods (eds.), *Handbook of the History of Logic, Vol. 1: Greek, Indian and Arabic Logic* (Amsterdam: Elsevier, 2004): 523–596, at 543–547. Street’s article is a landmark in the modern study of the history of Arabic logic and remains the indispensable starting point for later research.

If p then q.
 If q then r.
 ∴ If p then r.

The present paper will present some of the worries about this syllogism, expressed already by Avicenna and discussed intensely in the thirteenth century.

1 Avicenna

Unlike earlier logicians writing in Arabic, Avicenna quantified conditionals, thus recognizing the following four quantified propositions:²

Universal-affirmative: Always, if p then q.
 Particular-affirmative: It may be, if p then q.
 Universal-negative: Never, if p then q.
 Particular-negative: It may not be, if p then q.

A universal-affirmative conditional is true if the consequent follows in all situations (*awḍāʿ*) and circumstances (*aḥwāl*) in which the antecedent is supposed (*furiḍa*) to be true. A particular-affirmative conditional is true if the consequent follows in some situations in which the antecedent is supposed to be true.

In discussing such propositions, a host of modern interpretive issues arise, and it is not possible to discuss these exhaustively here. In what follows, I will stay close to the language of the sources and remain neutral towards how best to formalize Avicennan quantified conditionals.

In the seminal discussion of wholly hypothetical syllogisms in the *Shifāʾ*, Avicenna mentioned an apparent counterexample to the productivity of such syllogisms:³

2 Saloua Chatti, *Arabic Logic from al-Farabi to Averroes: A Study of the Early Arabic Categorical, Modal, and Hypothetical Syllogistics* (Cham: Springer International Publishing, Birkhäuser, 2019), 286–289; Riccardo Strobino, “Ibn Sina’s Logic,” in E.N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy* (Fall 2018 Edition), sec. 3.2 <https://plato.stanford.edu/archives/fall2018/entries/ibn-sina-logic/>; Riccardo Strobino, *Avicenna’s Theory of Science: Logic, Metaphysics, Epistemology* (Oakland, California: University of California Press, 2021), 198–202.

3 Ibn Sīnā, *ash-Shifāʾ: al-Qiyās*, edited by Saʿīd Zāyid & Ibrāhīm Madkour (Cairo: Wizārat ath-Thaqāfa, 1964), 296–297.

Always, if two is odd then two is a number.
 Always, if two is a number then two is even.
 ∴ Always, if two is odd then two is even.

Here, the premises seem true and yet the conclusion seems false. Avicenna's solution was to invoke a distinction between a conditional being true "in fact" (*fī nafs al-amr*) and true "by way of forcing a conclusion" (*bi-l-ilzām*).⁴ It is not clear how to understand the distinction here. Two interpretations suggest themselves:⁵

- (1) A conditional that is true "in actual fact" must have a true antecedent, for it must be equipollent to (*fī quwwati*) an affirmative categorical proposition, and affirmative categorical propositions have existential import, i.e., their subject-term cannot be empty. A conditional with a false antecedent is false "in fact" but can be useful dialectically because the false antecedent, together with agreed-upon propositions, may syllogistically entail further propositions that an opponent would then be held to in debate.
- (2) A conditional that is true in "actual fact" must have a *possibly* true antecedent, for it must be equipollent to (*fī quwwati*) an affirmative categorical proposition, and affirmative categorical propositions must have possible existential import, i.e., their subject-terms cannot be necessarily empty. A conditional with an impossible antecedent is strictly speaking false but can be useful dialectically because the impossible antecedent, together with agreed-upon propositions, may syllogistically entail further propositions that an opponent would then be held to in debate.

It is difficult to judge between the two interpretations solely on the basis of what Avicenna wrote when he introduced the distinction. On either interpretation, however, both the first premise and the conclusion of the putative counterexample are false "in fact" and both true "by way of forcing a conclusion." So there is no real counterexample to the productivity of the wholly hypothetical syllogism.

Before moving to later discussions of Avicenna's purported counterexample and diagnosis, I briefly note two striking consequences of Avicenna's view. (1) On the one hand, he conceded that the conclusion of the wholly hypothetical syllogism does indeed follow from the premises. On the other hand, he held a conditional with an impossible—perhaps even a false—antecedent to be strictly false. This combination of views entails a rejection of what is now called

4 Avicenna introduces the distinction in *as-Shifā'*, *Qiyās*, 239–241.

5 For a fuller discussion, see Khaled El-Rouayheb, "Mixed Conditional-Categorical Syllogisms from Avicenna to Urmawī," *History and Philosophy of Logic* 43(2022): 232–250, at 234.

“conditionalization,” the principle that if an argument sequence is valid then a conditional consisting of the premises as antecedent and the conclusion as consequent is true. For, according to Avicenna, premises that are impossible or false, either singly or in conjunction, may entail a conclusion even though the conditional with these impossible or false premises as antecedent is false “in actual fact.” This, in turn, means that one may not use conditional proof, i.e., a proof in which one shows that a conditional follows from a set of premises by adding the antecedent of the desired conditional to the premises and then deriving the consequent. (2) Contraposition for conditionals fails. The conditional “If humans are mammals then humans are animals” is true “in fact” but “If humans are not animals then humans are not mammals” is, on Avicenna’s account, false “in fact.”⁶ Both conditional proof and the contraposition of conditionals were widely accepted in the post-Avicennan tradition.

2 Al-Khūnajī

Many later post-Avicennan logicians did not follow Avicenna in believing that any conditional with a false or impossible antecedent is false “in fact.” A different solution to the counterexample, one that makes no reference to Avicenna’s distinction between a conditional being true “in fact” and being true “by way of forcing a conclusion,” was offered by Afdal ad-Dīn al-Khūnajī (d. 646/1248). To repeat, the counterexample is:

Always, if two is odd then it is a number.
 Always, if two is a number then it is even.
 ∴ Always, if two is odd then it is even.

Al-Khūnajī believed that it is not the first premise of the counterexample but the second that is problematic. A universally quantified conditional is true if the consequent follows from the antecedent in all situations and circumstances

⁶ I do not mean to suggest that Avicenna saw this consequence and explicitly rejected contraposition, nor do I deny that for Avicenna conditionals that are true *bi-l-ilzām* play an important role in indirect proofs. But if a conditional with an impossible (or false) antecedent is not true *fī naḥs al-amr*, then it is false *fī naḥs al-amr*. Exactly how to translate *fī naḥs al-amr* is tricky, but it seems clear to me that it means something like “in fact” or “in itself”. I therefore think it is legitimate to take this to mean that, for Avicenna, a conditional that has an impossible (or false) antecedent is not strictly true. Therefore, “If humans are mammals then humans are animals” is true “in fact,” but “If humans are not animals then humans are not mammals” is false “in fact”.

in which the antecedent is supposed to be true. But this is not the case, al-Khūnājī wrote, in the second premise of the counterexample: “Always, if two is a number then two is even.” “Two is even” does not follow in all situations in which “two is a number” is supposed true, for some of these situations include two being an odd number.⁷

Al-Khūnājī’s solution was historically as influential than Avicenna’s, if not more so. It trades on the intuitive sense that being even does not really follow from being a number, for there are numbers that are not even. But it is difficult to flesh out this intuition in a logically rigorous way. To be sure, it would be false to say, “Always, if something is a number then it is even.” But this is not what the second premise says. It says, “Always, if two is a number then two is even.” And there is a strong case for saying that this is a true conditional, given that there are no situations compatible with the truth of the antecedent “two is a number” in which the consequent “two is even” is false.⁸

At this point, a complication is relevant for a full understanding of Khūnājī’s position. He invoked a standard distinction—also accepted by Avicenna—between “implicative” (*luzūmī*) and “coincidental” (*ittifāqī*) conditionals. In the former type, there is a conceptual or causal connection between antecedent and consequent. In the latter type, there is none, for example “If horses neigh then cats meow.” Khūnājī’s claim is that the second premise of the counterexample is not true as an “implicative” conditional. For such a conditional to be true, it is not sufficient that there are no situations in which the antecedent is true and the consequent false. For the conditional “Always, if two is even then a triangle has three sides” meets this requirement and yet is not true as an implicative.

The distinction between “implicative” and “coincidental” conditionals is, at least from a modern perspective, problematic. It is not clear how to adjudicate the claim that “Always, if two is a number then it is even” is not true as an implicative. And to that extent, al-Khūnājī’s solution—like Avicenna’s—is arguably based on a problematic distinction.

7 Afḍal ad-Dīn al-Khūnājī, *Kaṣḥf al-Asrār ‘an Ghawāmiḍ al-Afkār*, edited by Khaled El-Rouayheb (Berlin: Institute for Islamic Studies & Tehran: Iranian Institute for Philosophy, 2010), 319.

8 The proposition “two is odd” is necessarily false and hence not compatible with the necessarily true antecedent “two is a number.” If one were to hold that a universal-affirmative conditional is not true because there is a situation that is incompatible with the antecedent in which the consequent is false, then this undermines all universal-affirmative conditionals. For example, one could then say: It is false that “Always, if Zayd is a human then he is an animal” because there is a situation in which Zayd is a stone and, in that situation, it is false that Zayd is an animal. More on this below.

Furthermore, there is a tension between al-Khūnajī's denial that the major premise of the counterexample is true and his own position on conditionals with impossible antecedents. When discussing the immediate implications (*lawāzīm*) of conditionals, he had denied that the following entailment holds:

Always, if p then $q \Rightarrow$ Never: If p then not- q .

Al-Khūnajī's denial was based on the claim that an impossible antecedent may imply two contradictories. For example, "This is a horse and a stone" implies both "This is an animal" and "This is not an animal." On this account, it is not clear why one should deny that the major premise of Avicenna's counterexample—"Always, if two is a number then two is even"—is true. Arguably, "two is even" follows in all situations in which "two is a number" is supposed to be true. If we strengthen the antecedent with the additional supposition that "two is odd," then the original consequent would still follow; it is simply that the contradictory of the original consequent would follow as well.⁹

3 Al-Urmawī and Ibn Wāṣil

A younger associate of al-Khūnajī, Sirāj ad-Dīn al-Urmawī (d. 682/1283), in his influential handbook *Maṭālī' al-Anwār*, gave the same solution to the counterexample as al-Khūnajī. He wrote:

The Shaykh [Avicenna] gave as reason to doubt the first figure consisting of two implicative conditionals that it is true that "Always, if two is odd then it is a number and Always, if it is a number then it is even," though it is false that "Always, if two is odd then it is even." The answer to this is that the major premise, if it is considered to be coincidental, then it is not conceded to be productive, and if it is considered implicative then it is not conceded to be true, for it does not follow that it is even on all suppositions of its being a number.¹⁰

9 For more on this topic, see Khaled El-Rouayheb, "Impossible antecedents and their consequences," *History and Philosophy of Logic* (2009): 209–225.

10 Sirāj ad-Dīn al-Urmawī, *Maṭālī' al-anwār*, printed with Qūṭb ad-Dīn ar-Rāzī, *Lawāmi' al-Asrār bi-Sharḥ Maṭālī' al-Anwār*. Edited by 'Alī Aṣghar Ja'fari Valanī (Tehran: Dānishgāh-i Tihārān, 2014), 601–602.

However, in his *Lawāmi' al-Maṭālī'*, a later, expanded version of the *Maṭālī'* written at the request of an unnamed acquaintance or patron who thought the *Maṭālī'* too compactly written, Urmawī adopted a different solution. He wrote:

The correct solution is to concede the truth of the two premises and deny the falsity of the conclusion. For two's being odd is impossible, and so it could imply what is impossible, and so our statement "Always, if two is odd it is even" could be true.¹¹

In other words, the proper response to Avicenna's counterexample is that the purported conclusion "Always, if two is odd then two is even" is true. As argued above, such a stance is more in line with the position—advocated by both Khūnajī and Urmawī—that a conditional with an impossible antecedent can imply both a proposition and its contradictory. On this account, if "two is odd" is supposed true, it follows both that "two is odd" and that "two is even."

A similar solution was advocated by Khūnajī's student Ibn Wāṣil (d. 697/1298), who was active in Cairo and then Hama in Syria. In his summa of logic, *Nukhbat al-Fikar*, he wrote:

I say: Even though I concede the two premises, I do not concede the falsity of the conclusion. It does not follow from the falsity of the antecedent and the consequent that it [i.e. the conditional] is false. It is possible that the oddness of two is false and implies divisibility by two. There is therefore nothing to prevent the truth of the conclusion, even though its antecedent is false, for there is nothing that prevents the false from implying the true.¹²

In his commentary on al-Khūnajī's short handbook *al-Jumal*, Ibn Wāṣil presented the solution more briefly. "Two's being odd is impossible," he wrote, "and it may be that the impossible imply the impossible."¹³

11 Sirāj ad-Dīn al-Urmawī, *Lawāmi' al-Maṭālī'* (Süleymaniye Library, Istanbul: MS Ayasofya 2569), fol. 46a.

12 Ibn Wāṣil al-Ḥamawī, *Nukhbat al-Fikar fī Tathqīf al-Nazar* (Yale University Library: MS Landberg 103), fol. 73a.

13 Ibn Wāṣil al-Ḥamawī, *Sharḥ al-Jumal*, edited by Khaled El-Rouayheb (Leiden: Brill, 2022), 157.

It is not clear if al-Urmawī's *Lawāmi'* predates or postdates Ibn Wāṣil's *Nukhbat al-Fikar* and *Sharḥ al-Jumal*. So the question whether al-Urmawī derived the solution from Ibn Wāṣil or Ibn Wāṣil derived it from al-Urmawī must, for the time being, be left open. Later North African logicians, such as Ibn 'Arafa (d. 803/1401) and Muḥammad b. Yūsuf as-Sanūsī (d. 895/1490), attributed the solution to Ibn Wāṣil.¹⁴ By contrast, the eastern Islamic logician Shams ad-Dīn as-Samarqandī (d. 722/1322), in his extensive commentary on his own handbook of logic *Qisṭās al-Afkār*, attributed the solution to al-Urmawī. As-Samarqandī did not think much of the solution, however. He wrote:

This is weak, for there is opposition in actual fact between even and odd. If there were implication in actual fact, then it would follow that opposites come together in actual fact. [This is absurd,] for implication is opposed to opposition.¹⁵

Samarqandī's position that there cannot be implication between propositions of opposing truth-values was common in the later tradition. But there was no consensus on this either, and discussion continued in subsequent centuries. For example, the following conditional was often considered true:

Always, if p & not- p then p .

There is opposition between " p " and " p & not- p ," and yet the antecedent " p & not- p " arguably implies the consequent " p ." A second example is a statement such as "All statements are false" whose truth arguably implies its falsity. A third example would be a statement whose falsity implies its truth (what in the Latin tradition is called the *consequentia mirabilis*), an example of which is found in some medieval Islamic arguments for a Necessary Existent: Assume that there is no Necessary Existent; then all existents are contingent; then they are, considered as a totality, in need of a cause; the cause must be existent, but *ex hypothesi* the cause must be outside the totality of contingent existents; so, the cause must be a Necessary Existent. In sum, the existence of a Necessary Existent follows from supposing it not to exist (*fa-yalzamu wujūdu wājibi l-wujūdi*

14 Muḥammad b. Yūsuf as-Sanūsī, *Sharḥ Mukhtaṣar Ibn 'Arafa* (Süleymaniye Library, Istanbul: ms Ragıp Paşa 904), fol. 184b.

15 Shams ad-Dīn as-Samarqandī, *Sharḥ al-Qisṭās* (Yale University Library, ms Arabic 11), fol. 65a.

'*ala taqdīri 'adamihi*').¹⁶ An important later work that adopted the solution proposed by Ibn Wāṣil or al-Urmawī, though without attributing it to anyone in particular, is *Sullam al-'Ulūm*, a widely studied handbook by the Indo-Muslim scholar Muḥibbullāh al-Bihārī (d. 1119/1707).¹⁷

4 Al-Abharī

Another logician who challenged the productivity of the wholly hypothetical syllogism was Athīr ad-Dīn al-Abharī (d. 663/1265). In his seminal *Kashf al-Ḥaqā'iq*, he wrote:

If we say “Always, if Every A is B then J is D, and Always, if J is D then H is Z,” then the major premise indicates that, in actual fact, the major is implied by the middle, and the minor indicates that the middle is true on the supposition that the minor is true. If that is so, then we do not concede that it follows from the truth of the two premises that the major is implied by the minor. This only follows if the implication between the middle and the major remains on that supposition.¹⁸

We may consider the following syllogism:

Always, if p then q.
 Always, if q then r.
 ∴ Always, if p then r.

16 This is the argument in Athīr ad-Dīn al-Abharī's (d. 663/1265) widely studied primer on philosophy *Hidāyat al-Ḥikma* (Karachi: Maktabat al-Bushrā, 2011), 96.

17 Qāzī Mubārak Gūpāmawī, *Sharḥ Sullam al-'ulūm* (Kazan: al-Maṭba'a al-Malakiyya, 1887), 292; Baḥr al-'Ulūm al-Lakḥnawī. *Sharḥ Sullam al-'ulūm*, edited by 'Abd al-Naṣīr al-Malībārī (Kuwait: Dār aḍ-Ḍiyā' 2012), 536.

18 Athīr ad-Dīn al-Abharī, *Kashf al-Ḥaqā'iq fī Taḥrīr ad-Daqā'iq*, edited by Hüseyin Sarioğlu (Istanbul: no publisher indicated, 1998), 155–156. Abharī's objection to the wholly hypothetical syllogism is not present in his early works, such as *Hidāyat al-Ḥikma* (logic part edited by Muḥammad Taqī Dānishpazhūh in *Majalla-yi Dānishkāda-yi Adabīyyāt va 'Ulūm-i Insānī* 17 [1340/1961], 484–494, at 492) or the first recension of his *Muntahā l-Afkār fī Ibānat al-Asrār*, edited by M. 'Azīmī & H. Qurbānī (Tehran: Intishārāt-i ḥikmat, 1395/2016), 151–152. It is present in the second recension of *Muntahā l-Afkār* (254–255), in *Kashf al-Ḥaqā'iq*, in *Khulāṣat al-Afkār* (see al-Abharī, *Khulāṣat al-Afkār wa-Naqāwat al-Asrār*, edited by M. 'Azīmī & H. Qurbānī [Tehran: Iranian Institute of Philosophy, 2018], 323), and in *Tanzīl al-Afkār* (see Ṭūsī, *Ta'dīl al-Mi'yār fī Naqd Tanzīl al-Afkār*, in *Collected Papers on Logic and Language*, ed. M. Mohaghegh and T. Izutsu [Tehran: Institute of Islamic Studies, 1974], 139–248, at 213–214).

Abhari's point is that *p* may be impossible. If we suppose it to be true, then this may undermine the truth of the second premise. An example given in a slightly later source may help make the argument clearer:¹⁹

Always, if a body is black all over and white all over then it is black all over.

Always, if a body is black all over then it is not white all over.

Here, the first premise seems at first sight to undermine the second. If we suppose a body to be black all over and white all over, then the ground for asserting the second premise has arguably been removed. Another way to put this point is that, in assessing the first premise, it is natural to consider the counterfactual situation in which a body is all black and all white and then ascertain that in such a situation the body would indeed be all black. However, in assessing the truth of the second premise, it is natural to consider a situation in which a body is all black, not all white as well. If, in evaluating the second premise, we were to retain the original counterfactual situation in which a body is all black and all white, then our confidence in the truth of the consequent "the body is not all white" would arguably be undermined.

It is tempting to compare al-Abhari's point here with modern discussions of the context-sensitivity of conditionals and the problem this poses for hypothetical syllogisms. A classic example is:²⁰

If Independents gain control of the House then the Democrats will lose control.

If the Democrats lose control of the House then the Republicans will be in control.

∴ If Independents gain control of the House then the Republicans will be in control.

The premises may strike us as true, for it is natural to evaluate the truth of a conditional by assuming the antecedent to be true and all other things to remain

19 The example comes from Naṣīr ad-Dīn aṭ-Ṭūsī, *Tajrīd al-Manṭiq*, printed with Ibn Muṭāhar al-Ḥillī, *al-Jawhar al-Naḍīd fī Sharḥ Manṭiq at-Tajrīd*, edited by Muḥsin Bidārfar (Qum: Intishārāt-i Bidār, 1423/2002–2003), 144 and Samarqandī, *Qisṭās al-Afkār*, 469. In both cases, it is meant to illustrate al-Abhari's doubt.

20 Christopher Gauker, *Conditionals in Context* (Cambridge MA & London: The MIT Press, 2005), 117. I have amended the example slightly.

equal, and then see if the consequent follows.²¹ Each premise, considered on its own, arguably passes the test. But when conjoined, the antecedent of the first premise changes the context of evaluation so radically that the second premise—which sounds plausible enough on its own—is undermined. Interesting as it is, the parallel with modern discussions will not be pursued further here.

Abhari's objection was often treated by later logicians as an independent objection, to be dealt with after dealing with Avicenna's counterargument. But this seems doubtful. Avicenna's counterexample is:

Always, if two is odd then two is a number.
 Always, if two is a number then two is even.
 ∴ Always, if two is odd then two is even.

One may compare this with the example that was standardly given to illustrate al-Abhari's objection:

Always, if something is black and white all over then it is black all over.
 Always, if something is black all over then it is not white all over.
 ∴ Always, if something is black and white all over then it is not white all over.

The two cases seem to be similar in all relevant respects. In both, the premises seem true when considered in isolation, but when they are conjoined, the first premise seems to undermine the second because the impossible antecedent of the first premise changes the context of evaluation, thus casting doubt on the truth of the second premise. Abhari should be seen, not as giving a separate objection, but as generalizing Avicenna's counterexample.²² In other words, Abhari, instead of merely giving a counterexample, tried to pinpoint the underlying problem with wholly hypothetical syllogisms.

21 In a classic article from 1968, Robert Stalnaker offered the following criteria for the acceptability of a conditional: "First, add the antecedent (hypothetically) to your stock of beliefs; second, make whatever adjustments are required to maintain consistency (without modifying the hypothetical belief in the antecedent); finally, consider whether or not the consequent is then true." R. Stalnaker, "A Theory of Conditionals," reprinted in Robert Stalnaker, *Knowledge and Conditionals* (Oxford: Oxford University Press, 2019), 151–162, at 154.

22 This was the view of Naṣīr ad-Dīn aṭ-Ṭūsī in his *Ta'dīl al-Mi'yār*, 215.

5 Ibn al-Badī' al-Bandahī and Najm ad-Dīn al-Kātibī

An answer to al-Abhari's objection was given by Fakhr ad-Dīn Ibn al-Badī' al-Bandahī (d. 657/1259), who was active in Baghdad in the 1240s and 1250s. In his commentary on al-Khūnajī's intermediate-length handbook *al-Mūjaz*, Ibn al-Badī' first gave the form of the first-figure wholly hypothetical syllogism:

Always, if A is B then J is D.
 Always, if J is D then H is Z.
 ∴ Always, if A is B then H is Z.

He then presented al-Abhari's objection:

The major premise indicates that "H is Z" is implied by "J is D" in actual fact, and it may be that it does not remain true on the supposition of the antecedent of the minor premise "A is B." It would not follow that "H is Z" is true on that supposition. All that one can say is that "J is D" is true on the supposition that "A is B." But the truth of "H is Z" only follows if the implication [in the major premise] remains on that supposition.

He then rejected this worry, as follows:

The major premise indicates that the major [i.e., "H is Z"] is implied by the middle ["J is D"] on every supposition that is not incompatible with it [i.e., with "J is D"], and among these is the antecedent of the minor [i.e., "A is B"] for it is among the suppositions that are not incompatible with the middle ["J is D"] for what implies is not incompatible with what is implied.²³

To clarify the argument, it may be helpful to present the hypothetical syllogism again:

Always, if A is B then J is D.
 Always, if J is D then H is Z.
 ∴ Always, if A is B then H is Z.

²³ Ibn al-Badī' al-Bandahī, *Sharḥ al-Mūjaz* (Manisa İl Halk Kütüphanesi, Manisa: MS 2212), fol. 58b.

The second premise asserts that “H is Z” is always true whenever “J is D” is true, and the quantifier “always” is understood to range over all situations that are compatible with the truth of “J is D.” The crucial step is now to argue that the truth of “A is B” must be part of all situations that are compatible with the truth of “J is D.” For in the first premise, “A is B” is said to imply “J is D,” and if “A is B” implies “J is D” then “A is B” and “J is D” must be compatible. In other words, supposing the truth of the antecedent of the first premise cannot undermine the truth of the second premise.

A basic assumption in Ibn al-Badī’s reply—an assumption encountered above in as-Samarqandī’s reply to al-Urmawī—is that what implies (*al-malzūm*) must be compatible with what is implied (*al-lāzīm*) or, to put it differently, that the antecedent of a true, affirmative conditional must be compatible with the consequent. It was already mentioned above that this assumption, though widely shared, was not universally accepted. Abharī’s student Najm ad-Dīn al-Kātibī (d. 675/1276) rejected it in his reply to the kind of argument presented by Ibn al-Badī. Al-Kātibī wrote:

We do not concede that what is implied (*al-lāzīm*) must be compatible with what implies (*al-malzūm*). This would be the case if the implication between two items entailed the negation—of similar quantity—of the opposition between them, and we do not concede this. For the extremes [of the conditional] may be impossible or false in actual fact, or the antecedent alone may be impossible or false, and if so, then it would be impossible for the two [i.e., the antecedent and the consequent] to come together in actual fact. Therefore, its truth [i.e., the truth of the implicative conditional] does not entail the negation of universal opposition between the extremes.²⁴

Kātibī’s point is that the following entailment does not hold:

Always, if p then q $\Rightarrow$ Not: Never p & q.

If the conditional “If p then q” is true and if p and q are impossible, or if p alone is impossible, then “Never p & q” would be true and “Not: Never p & q” false.

²⁴ Najm ad-Dīn al-Kātibī, *Sharḥ al-Mulakhkhaṣ* (Leiden University Library: MS Or. 36), fol. 68b (ll. 32–34).

Al-Kātibī, in one of his last works—his commentary on the *Mulakhkhaṣ* of Fakhr ad-Dīn ar-Rāzī (d. 606/1210)—went on to give his own solution to Abharī's doubt. He wrote:

There is no doubt that the truth of implication between two items entails that what is implied (*al-lāzim*) is compatible with each situation in which what implies (*al-malzūm*) implies ... For on that supposition there would be a reiterative syllogism with the conditional premise and the affirmation of the antecedent on that supposition, necessitating the truth of the consequent on that supposition. This extent is sufficient for the subsumption of suppositions and situations and times of the minor [i.e. the antecedent of the minor premise] under the situations and suppositions and times of the middle [i.e. the antecedent of the major premise]. And if subsumption is established then the syllogism is certainly productive.²⁵

Al-Kātibī's argument merits some unpacking. A universally-quantified, implicative conditional is true if any situation in which the antecedent is supposed to be true—including counterfactual situations—is also a situation in which the consequent is true. If "Always, if *p* then *q*" is true, then *q* must be compatible with any situation in which *p* is supposed true. This can be driven home by the following consideration: If it is true that "Always, if *p* then *q*," then—by modus ponens—any situation in which *p* is true is a situation in which *q* is true.

The relevance of this for the point at issue is clear if this conditional is conjoined to a second premise in a wholly hypothetical syllogism in the first figure:

Always, if *p* then *q*.

Always, if *q* then *r*.

The situations in which *q* is true *with p* must be a subset of—or subsumed under—the situations in which *q* is true. This, in turn, means that if we judge that *r* is true in all situations—factual or counterfactual—in which *q* is true, then it also follows that it is true in all situations—factual or counterfactual—in which *p* and *q* are true.

25 Najm ad-Dīn al-Kātibī, *Sharḥ al-Mulakhkhaṣ*, fol. 68b (ll. 34–37). Kātibī also discussed first-figure wholly hypothetical syllogisms in his other logical works. But the discussion in his commentary on Fakhr ad-Dīn ar-Rāzī's *Mulakhkhaṣ* is the most detailed and distinctive.

It may be helpful to return to the purported counterexample:

Always, if two is odd then two is a number.

Always, if two is a number then two is even.

Kātibī's point is that "two is a number" is more general (*a'amm*) and the conjunction of "two is odd & two is a number" is more "specific" (*akhaṣṣ*). And if a proposition—in this case "two is even"—is implied by the more general, then it is implied by the more specific. Though al-Kātibī did not say so, it is reasonable to interpret him as adopting—at least in this late work—the solution of al-Urmawī and Ibn Wāṣil but painstakingly explaining exactly why first-figure wholly hypothetical syllogisms are productive.

Al-Kātibī's proposed solution is linked to another controversy. This can be brought out by considering a later argument in terms of "subsumption" that reaches a conclusion opposed to Kātibī's. Qutb ad-Dīn ar-Rāzī (d. 766/1365), in his commentary on al-Urmawī's *Maṭāli'*, gave the following argument *against* the productivity of the wholly hypothetical syllogism:

If we allow that the two extremes of an implication can be incompatible, then it is clear that two implicative conditionals are not productive. This is because the judgment in the major premise is that the major is implied by the middle in situations that are compatible with it [i.e., with the middle]. Given that the minor may be incompatible with the middle, it is not subsumed under the middle. If so, the syllogism is not productive, for productivity depends on the subsumption of the situations of the minor under the situations of the middle.²⁶

To clarify the point here, it will be helpful to consider the standard counterexample given by both al-Urmawī and Qutb ad-Dīn in this discussion:

Always, if two is odd then two is a number.

Always, if two is a number then two is even.

Qutb ad-Dīn's argument is that the situations relevant to the truth of the second premise are only those that are compatible with the antecedent "two is a number." The situation in which two is odd is incompatible with the truth of "two is a number" and therefore not included. This means that the situations relevant

²⁶ Qutb ad-Dīn ar-Rāzī, *Lawāmi' al-Asrār*, 603.

to the truth of the first premise are **not** subsumed under the situations that are relevant for the truth of the second premise. The situation in which “two is odd” is part of the relevant situations in the first premise but **not** part of the relevant situations in the second premise.

To put the point differently, al-Kātibī held that the situation in which “two is odd & two is a number” is “more specific” and therefore subsumed under the “more general” situation “two is a number.” Qutb ad-Dīn, by contrast, argued that the situations in which “two is a number” are not “more general” than the situations in which “two is odd and a number,” for there are situations included in the latter, namely that two is odd, that are not included in the former.

The key to the difference between al-Kātibī and Qutb ad-Dīn ar-Rāzī is that the latter insisted that only situations compatible with the antecedent are relevant for assessing the truth of a conditional. This insistence was linked to a broader issue that had Qutb ad-Dīn ar-Rāzī (and Avicenna) in one camp and al-Kātibī (and al-Khūnajī) in another. The former camp held that unless we restrict the relevant situations to those compatible with the antecedent, no universally quantified conditional would be true. Consider the conditional, “Always, if two is a number then it is even.” This means that any situation **compatible with the antecedent** is a situation in which the consequent follows. Without the stated condition, the conditional would be false, for in the situation in which two is a number **and two is odd**, it would not follow that “two is even.” The other camp, including Khūnajī and Kātibī, denied the need for the bold-faced condition. They held that an impossible situation in which two is a number **and odd** remains a situation in which it follows that two is even, though it would also follow that two is odd. The complex, impossible antecedent (“two is a number & two is odd”) thus implies both one proposition (“two is even”) and its contradictory (“two is odd”). Al-Kātibī’s defense of the wholly hypothetical syllogism presupposes the position that, in a true conditional, the consequent follows in **all** situations in which the antecedent is supposed to be true, not only in all situations **compatible with the antecedent**.

Al-Kātibī’s careful defense does, however, raise some serious concerns. As mentioned above, Avicenna and post-Avicennan logicians quantified conditionals, thus recognizing the following four quantified propositions:

Universal-affirmative: Always, if p then q.

Particular-affirmative: It may be, if p then q.

Universal-negative: Never, if p then q.

Particular-negative: It may not be, if p then q.

Avicenna and the post-Avicennan logicians also overwhelmingly agreed that a-conditionals convert to i-conditionals, i.e., that the following implication holds:

Always, if p then $q \Rightarrow$ Sometimes, if q then p .

Now, according to al-Kātibī, the following conditional is true:

Always, if two is even and two is odd then two is even.

This means that the following conditional is true:

Sometimes, if two is even then two is even and two is odd.

If such a particular-affirmative conditional is true, even though its antecedent is necessarily true and its consequent necessarily false, then it is difficult to see how any particular-affirmative conditional could be false. And this, in turn, implies that no universal-negative conditional is true. For any two propositions p and q , one could construct the following proof that “Sometimes, if p then q .”

1.	Always, if $p \ \& \ q$ then p	Simplification
2.	Sometimes, if p then $p \ \& \ q$	1 Conversion
3.	Always, if $p \ \& \ q$ then q	1 Simplification
4.	Sometimes, if p then q	2,3 DARI

The position of al-Khūnājī and al-Kātibī—that, in a true, universally-quantified conditional, the consequent follows in **all** situations in which the antecedent is supposed to be true—not only in all situations **compatible with the antecedent**—thus undermines a number of fundamental principles of Avicennan and post-Avicennan conditional logic.²⁷

²⁷ Shams ad-Dīn as-Samarqandī (d. 1322)—unusually—denied the conversion of conditionals and acknowledged that this had dramatic consequences for the mainstream logic of conditionals; see his *Qisṭās*, pp. 355–363. But his position does not seem to have been widely shared in later centuries. It seems to have been more common to deny simplification, i.e., steps 1 and 3 of the proof. This is incompatible with al-Kātibī’s defense of the wholly hypothetical syllogism. Though more research is needed to be confident about this, it seems to have been more common in later times to adopt al-Khūnājī’s solution, which is to deny the truth of the major premise of Avicenna’s counterexample, or aṭ-Ṭūsī’s solution which will be discussed below.

6 aṭ-Ṭūsī

Naṣīr ad-Dīn aṭ-Ṭūsī (d. 672/1274) discussed the issue at some length in his *Ta'dīl al-Mi'yār*, an extended, point-by-point refutation of one of the works of al-Abharī. Aṭ-Ṭūsī noted that al-Abharī's doubt about the wholly hypothetical syllogism had been prefigured by Avicenna when he gave the by now well-known counterexample:

Always, if two is odd then two is a number.
 Always, if two is a number then it is even.
 ∴ Always, if two is odd then it is even.

According to aṭ-Ṭūsī, Avicenna had dealt with this counterexample by saying that the conclusion indeed follows formally from the premises, but that it—the conclusion—is not true “in actual fact.” Aṭ-Ṭūsī gave an analogy with a first-figure categorical syllogism:

Every odd two is two.
 Every two is even.
 ∴ Every odd two is even.

The conclusion follows from the premises but is false due to the falsity of the minor premise. Just as an impossible subject (“odd two”) cannot be the subject of true predication, an impossible antecedent (“two is odd”) cannot be the antecedent of a true implicative conditional.

As mentioned above, it is not clear whether Avicenna thought that a conditional that is true “in fact” must have a true antecedent or simply a possible antecedent. Aṭ-Ṭūsī's discussion does not offer a straightforward clarification of this point. In an earlier passage in his *Ta'dīl al-Mi'yār*, he wrote:

What should be known is that the impossible (*muḥāl*) insofar as it is impossible, and indeed the nonexistent (*ma'dūm*) insofar as it is nonexistent, cannot be judged to imply something; rather it is possible to judge that it does not imply anything.²⁸

This passage starts by saying that an affirmative conditional with an impossible antecedent is false, but then immediately extends the point to an affirmative

28 Ṭūsī, *Ta'dīl al-mi'yār*, 171.

conditional with a “nonexistent” antecedent. In his commentary on Avicenna’s *Ishārāt*, written a decade earlier, aṭ-Ṭūsī wrote:

The implicative conditional is either in actual fact and according to nature (*ṭabʿ*) or according to utterance and supposition (*waḍʿ*). An example of the first is our saying, “If the sun is up then it is day.” An example of the second is our saying, “If two is odd then it is a number,” for this proposition is not true insofar as it includes a false supposition (*waḍʿ kādhib*), but it is true insofar as the utterance follows from the supposition.²⁹

Aṭ-Ṭūsī’s example of a conditional that is false “in actual fact” but true “by supposition” is “If two is odd then it is a number.” But is this example false “in actual fact” because its antecedent is impossible or simply because its antecedent is false? In favor of the second alternative is the claim that the conditional is false because “it includes a false supposition.” But this interpretation is problematic considering aṭ-Ṭūsī’s example of a conditional that is true “in actual fact,” namely “If the sun is up then it is day.” It seems implausible to suggest that this conditional is only true when uttered in daytime and is false “in actual fact” during the night. As mentioned above, the proper understanding of Avicenna’s and aṭ-Ṭūsī’s distinction between conditionals that are true “in fact” and those that are merely true “by supposition” requires more research. I shall here leave this issue open and return to aṭ-Ṭūsī’s discussion of al-Abharī’s doubt about the wholly hypothetical syllogism.

One might have expected aṭ-Ṭūsī to have ended his discussion of al-Abharī’s doubt at this point, having reiterated Avicenna’s position. But surprisingly, he went on to give another diagnosis of the problematic counterexample, a diagnosis that is not found in Avicenna. He argued as follows. Consider the counterexample:

Always, if two is odd then two is a number.
 Always, if two is a number then it is even.
 ∴ Always, if two is odd then it is even.

“Two is a number” is here the consequent of the first premise and the antecedent of the second premise. There are two possibilities: (i) the utterance “Two is a number” has the same meaning in both premises, or (ii) the meaning of

29 Naṣīr ad-Dīn aṭ-Ṭūsī, *Sharḥ al-Ishārāt* (Tehran: Maṭbaʿat al-Ḥaydarī, 1377/1957–1958), vol. 1, 273.

the utterance shifts between the two premises. In option (i), the conjunction of premises is false and implies a false conclusion, just as Avicenna had suggested. In option (ii), there is a shift in meaning between the two premises. To preserve the truth of the first (minor) premise, we must interpret the two that is a number to be an odd two. To preserve the truth of the second (major) premise, the two that is a number must be an even two. In other words, to preserve the truth of both premises, the term “two” must be used in one sense in the first premise and in another sense in the second premise. So, if the premises are true then the counterexample commits the fallacy of equivocation and does not entail the conclusion. Aṭ-Ṭūsī wrote:

That which is implied by the odd two, i.e., the consequent of the minor premise, can only be in the sense in which it is true of it that it is odd. The two that is mentioned in the major premise is either (i) in that same sense, in which case the major premise is false though if it is conceded the false conclusion follows from it, or (ii) it is in the sense in which it is in actual fact, in which case the major premise is true but the conclusion is not implied because the two that occurs in place of the middle term only recurs in the mentioned premises at the level of utterance, not at the level of meaning.³⁰

It is not clear why aṭ-Ṭūsī felt the need to give an additional diagnosis of the problem with the counterexample. Nor is it clear how this diagnosis fits with Avicenna's. Consider the first premise in the counterexample:

Always, if two is odd then two is a number.

Ṭūsī suggests that to make this come out true, we must interpret it as follows:

Always, if two is odd then two is an (odd) number.

But if, as Avicenna believed, any conditional with an impossible or false antecedent is strictly false, then this conditional remains false even with the disambiguating addition of the adjective “odd” to the consequent. Avicenna's diagnosis seems, in other words, to be incompatible with aṭ-Ṭūsī's second diagnosis. Aṭ-Ṭūsī began by defending Avicenna's response but ended up giving his own, and the two responses are not only independent of each other but incom-

³⁰ Aṭ-Ṭūsī, *Ta'dīl al-Mi'yār*, p. 215, ll. 13–19.

patible. There was therefore nothing to prevent later logicians from adopting aṭ-Ṭūsī's response **instead of** Avicenna's.

One such scholar was the eminent Persian philosopher Mullā Ṣadrā ash-Shīrāzī (d. 1045/1635). In his *at-Tanqīh*, a short handbook on logic, he presented one of the standard counterexamples to the productivity of first-figure wholly hypothetical syllogisms:

Always, if a body is black all over and white all over then it is black all over.

Always, if a body is black all over then it is not white all over.

∴ Always, if a body is black all over and white all over then it not white all over.

He then wrote:

The answer is that if the middle occurs in the same respect, then the productivity is evident, though the conclusion is false due to the falsity of the major premise, and it is not a condition for the productivity of the syllogism that its premises be true ... And if it does not [occur in the same respect] then the conjunction [of premises] is not a syllogism because the middle does not repeat.³¹

It is noteworthy that Mullā Ṣadrā argued that either (i) the counterexample commits the fallacy of equivocation or (ii) the **major** premise is false. There is no sign here of Avicenna's own solution, which is that it is the **minor** premise that is false "in actual fact." Indeed, there is no reason to think that Mullā Ṣadrā would have accepted the principle that a conditional with a false or impossible antecedent is false "in actual fact." Earlier in the same work he had written, "True conditionals can have false parts" (*aṣ-ṣawādiq min ash-sharṭiyyāti qad takūnu ajzā'uhā kādhibatan*).³² And just a few lines after the above-quoted lemma, he reiterated that "the truth of the conditional does not preclude the falsity of the parts" (*anna ṣidqa l-muttaṣilati lā yunāfi kidhba l-ajzā'i*).

There was also resistance to aṭ-Ṭūsī's response in later centuries. One powerful objection was the following:³³ Aṭ-Ṭūsī's suggestion is that for conditionals

31 Mullā Ṣadrā, *at-Tanqīh fī l-Manṭiq*, edited by Āḥad Farāmarz Qarāmalekī & Gholāmrezā Yāsīpūr (Tehran: Sadra Islamic Philosophy Research Institute, 1378/1999), 40.

32 Mullā Ṣadrā, *at-Tanqīh*, 20.

33 The point is made by the Ottoman scholar Muṣṭafā Rīzevī (d. 1812) in his commentary on a handbook of logic by Ismā'il Gelenbevi (d. 1791). Gelenbevi had adopted aṭ-Ṭūsī's diag-

such as “Always, if two is odd then it is a number” to be true, one would have to understand the consequent to be qualified by the situation supposed in the antecedent. One should thus understand the conditional to say:

Always, if two is odd then it is an (odd) number.

But on this account, the conditional should convert simply:

Always, if two is an (odd) number then it is odd.

More generally, a universal-affirmative conditional of the form “Always, if p then q” should convert simply to “Always, if q then p.” Such a consequence was—understandably—held to be absurd.

7 Conclusion

Avicenna was the first in the Arabic logical tradition to recognize wholly hypothetical syllogisms, and he devoted a substantial portion of his book on Syllogism of his magnum opus *ash-Shifāʾ* to exploring such syllogisms. He also gave an apparent counterexample to the productivity of wholly hypothetical BARBARA:

Always, if two is odd then two is a number
 Always, if two is a number then two is even
 ∴ Always, if two is odd then two is even.

Two centuries later, Athīr ad-Dīn al-Abharī also expressed doubts about the productivity of such syllogisms, but in more general terms: The impossible antecedent of the first premise (in this example “two is odd”) may undermine the truth of the second conditional (in this example, “Always, if two is a number then two is even”).

The problem was discussed intensely in the thirteenth century and beyond. One solution, due to Avicenna himself, was to make a distinction between a conditional being true “in fact” and true for dialectical purposes. According to Avicenna, a conditional with an impossible antecedent—and perhaps even a

nosis. See Muṣṭafā Rīzevī, *Sharḥ al-Burhān* (Istanbul: n.p., n.d.), vol. 2, 127. Rīzevī’s work is available at <https://catalog.hathitrust.org/Record/102738035>.

conditional with a false antecedent—is false “in fact.” This means that the first premise of the purported counterexample is false, and therefore it is not the case that the premises are true and the conclusion false. But a conditional that is false “in fact” may yet be “true” in the sense that the antecedent, together with other uncontroversial premises, will entail the consequent. In this sense, the first premise and the conclusion can be used dialectically to hold an opponent to the consequences of a premise. I noted that this distinction between conditionals being true “in fact” and true “for the purposes of forcing a conclusion” is curious. It is not clear if conditionals that are true “in actual fact” must have true or merely possible antecedents. In either case, Avicenna’s point has consequences that were widely rejected in the later tradition, for example that conditional proof is illegitimate and that the contraposition of conditionals is invalid.

A second solution was presented by al-Khūnājī. On his account, it is the second premise of the purported counterexample that is false. It does not follow from **all** situations in which one supposes two to be a number that two is even. I argued that this diagnosis, though historically influential, is in tension with al-Khūnājī’s own position that an impossible antecedent can imply both a proposition and its contradictory. It is also unsatisfactory: There are no situations compatible with the antecedent “two is a number” in which it is false that “two is even”; the universal-affirmative conditional “Always, if two is a number then it is even” therefore has as good a claim as any to be true. The failure of many later logicians to recognize this seems to be due to their conflating the compatibility of two predicates (“odd” is compatible with “number”) with the compatibility of two propositions (“two is a number” is necessarily true and hence not compatible with “two is odd” which is necessarily false).

A third solution, proposed by al-Khūnājī’s younger associates al-Urmawī and Ibn Wāṣil, is to accept the conclusion of the purported counterexample. Such a solution met with resistance, on the ground that the antecedent and consequent of a true conditional cannot be incompatible. Al-Kātibī gave an extended defense of the principle that a conditional can be true even if its antecedent and consequent are incompatible. He also gave a careful defense of the productivity of the wholly hypothetical syllogism, arguing that the truth-conditions of the second, or major, premise subsume the truth-conditions of the first, or minor, premise. Consider a syllogism of the following form:

Always, if p then q

Always, if q then r

According to the second premise, *r* follows in all situations in which *q* is supposed to be true. This means that it also follows from a subset of these situations, namely the situations in which *q* is supposed to be true with *p*. As argued above, al-Kātibī's solution presupposes that a true conditional remains true even if the antecedent is strengthened with other assumptions incompatible with it. For example, "Always, if two is a number **and** two is **odd** then two is even" is, on his account, a true conditional. This position, though plausible in isolation, is incompatible with fundamental principles of the Avicennan logic of conditionals. It leads to one of the following two consequences, both disastrous for the system: (a) universal-affirmative conditionals do not convert, or (b) particular-affirmative conditionals are always true and universal-negative conditionals are always false.

A fourth solution was proposed by aṭ-Ṭūsī. According to this diagnosis, the counterexample commits the fallacy of equivocation. The counterexample mentioned by Avicenna is:

Always, if two is odd then two is a number
 Always, if two is a number then two is even
 ∴ Always, if two is odd then two is even

For the first premise to be true, one must assume that "two is a number" means "two is an **odd** number." For the second premise to be true, one must assume that "two is a number" means "two is an **even** number." This diagnosis, though historically influential, was understandably challenged by some later logicians for implying that universal-affirmative conditionals convert simply.

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References

- Abharī, Athīr ad-Dīn al-. *Hidāyat al-Ḥikma*. Karachi: Maktabat al-Bushrā, 2011.
- Abharī, Athīr ad-Dīn al-. *Hidāyat al-Ḥikma*. Logic part edited by Muḥammad Taqī Dān-ishpazhūh in *Majalla-yi Dānishkāda-yi Adabīyyāt va 'Ulūm-i Insānī* 17 (1340/1961), 484–494.
- Abharī, Athīr ad-Dīn al-. *Kashf al-Ḥaqā'iq fī Taḥrīr ad-Daqā'iq*. Edited by Hüseyin Sarioğlu. Istanbul: no publisher indicated, 1998.
- Abharī, Athīr ad-Dīn al-. *Khulāṣat al-Afkār wa-Naqāwat al-Asrār*. Edited by M. 'Aẓīmī & H. Qurbānī. Tehran: Iranian Institute of Philosophy, 2018.
- Abharī, Athīr ad-Dīn al-. *Muntahā l-Afkār fī Ibānat al-Asrār*. Edited by M. 'Aẓīmī & H. Qurbānī. Tehran: Intishārāt-i Ḥikmat, 1395/2016.
- Baḥr al-'Ulūm Lak'hnavī. *Sharḥ Sullam al-'Ulūm*. Edited by 'Abd an-Naṣīr al-Malībārī. Kuwait: Dār aḍ-Ḍiyā', 2012.
- Chatti, Saloua. *Arabic Logic from al-Farabi to Averroes: A Study of the Early Arabic Categorical, Modal, and Hypothetical Syllogistics*. Cham: Springer International Publishing, Birkhäuser, 2019.
- El-Rouayheb, Khaled. 2009. "Impossible Antecedents and their Consequences: Some Thirteenth-Century Arabic Discussions." *History and Philosophy of Logic*, 30(2009): 209–225.
- El-Rouayheb, Khaled. "Mixed Conditional-Categorical Syllogisms from Avicenna to Urmawī." *History and Philosophy of Logic* 43(2022): 232–250.
- Gauker, Christopher. *Conditionals in Context*. Cambridge MA & London: The MIT Press, 2005.
- Ibn al-Badī' al-Bandahī. *Sharḥ al-Mūjaz*. Manisa İl Halk Kütüphanesi, Manisa: MS 2212, fols. 9b–70a.
- Ibn Sinā. *asj-Shifā': al-Qiyās*. Edited by Sa'īd Zāyid & Ibrāhīm Madkour. Cairo: Wizārat ath-Thaqāfa, 1964.
- Ibn Wāṣil al-Ḥamawī. *Nukhbat al-Fikar fī Tathqīf an-Nazar*. Yale University Library: MS Landberg 103.
- Ibn Wāṣil al-Ḥamawī. *Sharḥ al-Jumal*. Edited by Khaled El-Rouayheb. Leiden: Brill, 2022.
- Kātibī, Najm ad-Dīn al-. *Sharḥ al-Mulakhkhaṣ*. Leiden University Library: MS Or. 36.
- Khūnajī, Afḍal ad-Dīn al-. *Kashf al-Asrār 'an Ghawāmiḍ al-Afkār*. Edited by Khaled El-Rouayheb. Berlin & Tehran: Institute for Islamic Studies & Iranian Institute of Islamic Philosophy, 2010.
- Mullā Ṣadrā Shīrāzī. *at-Tanqīḥ fī l-Mantiq*. Edited by Āḥad Farāmarz Qarāmalekī & Gholām-rezā Yāsīpūr. Tehran: Sadra Islamic Philosophy Research Institute, 1378/1999.
- Qāzī Mubārak Gūpāmawī, *Sharḥ Sullam al-'Ulūm*. Kazan: al-Maṭba'a al-Malakiyya, 1887.

- Rāzī, Quṭb ad-Dīn ar-. *Lawāmi' al-Asrār bi-Sharḥ Matālī' al-Anwār*. Edited by 'Alī Aṣghar Ja'farī Valanī. Tehran: Dānishgāh-i Tih-rān, 2014.
- Rīzevī, Muṣṭafā. *Sharḥ al-Burhān*. Istanbul: n.p., n.d. [Available at <https://catalog.hathitrust.org/Record/102738035>.]
- Samarqandi, Shams ad-Dīn as-. *Sharḥ al-Qiṣṭās*. Yale University Library, MS Arabic 11.
- Samarqandi, Shams ad-Dīn as-. *Qisṭās al-aḥkām*. Edited by Asadollah Fallāḥī. Tehran: Iranian Institute of Philosophy, 2020.
- Sanūsī, Muḥammad b. Yūsuf as-. *Sharḥ Mukhtaṣar Ibn 'Arafā*. Süleymaniye Library, Istanbul: MS Ragıp Paşa 904.
- Stalnaker, Robert. "A Theory of Conditionals," in Robert Stalnaker, *Knowledge and Conditionals*. Oxford: Oxford University Press, 2019, pp. 151–162.
- Street, Tony. "Arabic Logic," in D.M. Gabbay & J. Woods (eds.), *Handbook of the History of Logic, Vol. 1: Greek, Indian and Arabic Logic*. Amsterdam: Elsevier, 2004, pp. 523–596.
- Strobino, Riccardo. *Avicenna's Theory of Science: Logic, Metaphysics, Epistemology*. Oakland, California: University of California Press, 2021.
- Strobino, Riccardo. "Ibn Sina's Logic," in Edward N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy*. <https://plato.stanford.edu/archives/fall2018/entries/ibn-sina-logic/>. First published: 2018. Last accessed on August 30, 2021.
- Ṭūsī, Naṣīr ad-Dīn aṭ-. *Ta'dīl al-Mi'yār fī Naqd Tanzīl al-Aḥkām*. In *Collected Papers on Logic and Language*, edited by M. Mohaghegh and T. Izutsu, 139–248. Tehran: Institute of Islamic Studies, 1974.
- Ṭūsī, Naṣīr ad-Dīn aṭ-. *Tajrīd al-Manṭiq*. Printed with Ibn Muṭahhar al-Ḥillī, *al-Jawhar an-Naḍīd fī Sharḥ Manṭiq at-Tajrīd*. Edited by Muḥsin Bidārfar. Qum: Intishārāt-i Bidār, 1423/2002–2003.
- Ṭūsī, Naṣīr ad-Dīn aṭ-. *Sharḥ al-Ishārāt*. Tehran: Maṭba'at al-Ḥaydarī, 1377/1957–1958.
- Urmawī, Sirāj ad-Dīn al-. *Lawāmi' al-Maṭālī'*. Süleymaniye Library, Istanbul: MS Ayasofya 2569.
- Urmawī, Sirāj ad-Dīn al-. *Maṭālī' al-Anwār*. Printed with Quṭb ad-Dīn Rāzī, *Lawāmi' al-Asrār bi-Sharḥ Matālī' al-Anwār*. Edited by 'Alī Aṣghar Ja'farī Valanī. Tehran: Dānishgāh-i Tih-rān, 2014.

A 12th Century Attack on Peripatetic Logic: Rashīd ad-Dīn al-Waṭwāṭ's (d. 1182) Treatise "A Doubt About *reductio ad absurdum*" and Its Aftermath

Dustin Klinger

1 Introduction

Among Tony Street's pioneering studies in post-Avicennan Arabic logic are two signal contributions to the development of conversion rules.¹ In the first, published in 2000, Street shows how Naṣīr ad-Dīn aṭ-Ṭūsī's (d. 1274) account of the conversion of absolute propositions differs from that of Avicenna. One of the major and idiosyncratic developments in Arabic logic was that with Avicenna, Aristotle's assertoric syllogistic had become fully modalized. For Avicenna, every categorical proposition is at least implicitly modalized, either temporally, alethically, or both. What for Aristotle was the assertoric proposition, Avicenna calls the "absolute" (*muṭlaq*), understood as asserting that "S is P *at least once*."²

1 Tony Street, "Avicenna and Tusi on the Contradiction and Conversion of the Absolute," *History and philosophy of logic* 21, no. 1 (2000): 45–56; "Afḍal al-Dīn al-Khūnajī (d. 1248) on the Conversion of Modal Propositions," *Oriens* 42, no. 3–4 (2014): 454–513. In terms of other pioneering studies, I am here especially thinking of contributions that had a formative impact on my own study of Arabic logic, like "Toward a History of Syllogistic After Avicenna: Notes on Rescher's Studies on Arabic Modal Logic," *Journal of Islamic Studies* 11, no. 2 (2000): 209–228; "Arabic Logic," in *Handbook of the History of Logic: Greek, Indian and Arabic Logic*, ed. by Dov M. Gabbay and John Woods (Amsterdam and Boston: Elsevier North Holland, 2004), 523–596.; "Faḥraddīn ar-Rāzī's Critique of Avicennan Logic," in *Logik und Theologie: das Organon im arabischen und im lateinischen Mittelalter*, ed. by Dominik Perler and Ulrich Rudolph (Leiden and Boston: Brill, 2005), 99–116; "Kātibī (d. 1277), Taḥṭānī (d. 1365), and the *Shamsīyya*," in *The Oxford Handbook of Islamic philosophy*, ed. by Khaled El-Rouayheb and Sabine Schmidtke (New York: Oxford University Press, 2016), 348–374; "Al-ʿAllāma al-Ḥillī (d. 1325) and the Early Reception of Kātibī's *Shamsīya*: Notes towards a Study of the Dynamics of Post-Avicennan Logical Commentary," *Oriens* 44, no. 3–4 (2016): 267–300; "The Reception of Pointers 1.6 in Thirteenth-Century Logic: On the Expression's Signification of Meaning," in *Philosophy in the Islamic World in Context. Volume 2, Philosophy and Language in the Islamic World*, ed. by Nadja Germann and Mostafa Najafi (Berlin and Boston: De Gruyter, 2021), 101–128; *Najm al-Dīn al-Kātibī's al-Risālah al-Shamsīyyah: An Edition and Translation with Commentary*, (New York: NYU Press, 2024).

2 For an overview of Avicenna's modal syllogistic and post-Avicennan developments, see Ric-

This required various adjustments to be made, particularly regarding conversion rules. Given the dramatic increase in propositional types reflecting the temporal, alethic and mixed modalities (217 possible combinations on aṭ-Ṭūsī's count, even though post-Avicennan logicians eventually came to settle on the 13 most pertinent ones), this was no mean feat.³ Street's article shows that Arabic logicians were still engaged in that project 250 years later.⁴

Street's 2014 article on Afḍal ad-Dīn al-Khūnajī's (d. 1248) treatment of the conversion of modal propositions significantly improved our understanding of the issues discussed, as well as of the terms and concepts used. Moreover, it had become clear then that the work of ar-Rāzī and al-Khūnajī marks a watershed in post-Avicennan Arabic logic.⁵ Street writes:

The study of Arabic logic is still in its early days, but it would appear that it was the so-called disciples of Rāzī who, more than any other group of logicians, changed the look of Arabic logic in both the Eastern and the North African traditions: the terms and concepts it used, the questions it dealt with, and the attitude its major writers displayed towards earlier authorities. Perhaps the most striking difference between a pre-Rāzī logical text and a text like the one which follows is the profusion of propositional types.⁶

cardo Strobino and Paul Thom, "The Logic of Modality," in *The Cambridge Companion to Medieval Logic*, ed. by Catarina Dutilh Novaes and Stephen Read (Cambridge: Cambridge University Press, 2016), 342–359.

3 For Ṭūsī's calculation of propositional types, see Naṣīr ad-Dīn aṭ-Ṭūsī, *Kitāb Asās al-iqtibās*, ed. by Muḥammad Taqī Mudarris Raḍawī (Tehran: Intishārāt-i Dānishgāh-i Tihrān, 1368/1990), 177. Cf. Strobino and Thom, "The Logic of Modality," 345.

4 "Ṭūsī presents Avicenna as responding to an ancient peripatetic debate regarding what place the absolute proposition has in scientific discourse, and how it should relate to other modalized propositions deployed in the syllogistic. Avicenna distinguishes his four kinds of absolute which, Ṭūsī claims in the commentary, find places for the various doctrines of Aristotle, Themistius and Theophrastus, and Alexander. [...] Aside from its exegetical value, the absolute has an expressive power which led Ṭūsī and his successors to retain it. But it does not contradict and convert like the assertoric proposition of Aristotelian logic. [...] Ṭūsī is careful to record why Avicenna did what he did, and then is just as careful not to follow Avicenna," Street, "Avicenna and Tusi on the Contradiction and Conversion of the Absolute," 52.1–53.16.

5 See especially the introduction to El-Rouayheb's edition of al-Khūnajī's work that Street translates: Muḥammad b. Nāmāwar Afḍal ad-Dīn al-Khūnajī, *Kashf al-asrār 'an ghawāmiḍ al-afkār*, ed. by Khaled El-Rouayheb, (Tehran: Mu'assasah-i Pazhūhishī-i Hikmat va Falsafah-i Irān and Mu'assasah-i Muṭāla'āt-i Islāmī-i Dānigāh-i Āzād-i Birlīn, 2010).

6 Street, "Afḍal al-Dīn al-Khūnajī (d. 1248) on the Conversion of Modal Propositions," 457.

Much of the work pre-Rāzīan logicians had to do was to probe and adjust the now markedly more complex Avicennan system by establishing finer distinctions and more precise terminology. The profusion of modal types was a central part of their response to Avicenna's new modalized syllogistic. While we have a reasonably detailed picture of the post-Rāzīan efforts in this project, we know little about the pre-Rāzīan part of the story.

In this article I argue that a text that has only recently been attributed with certainty to Rashīd ad-Dīn al-Waṭwāṭ (d. 1182), a courtier and literary figure otherwise not associated with logic, sheds new light on the pre-Rāzīan engagement with Avicenna's modal logic, specifically with problems arising for conversion from the profusion of propositional types. After a brief contextualization of Waṭwāṭ, his text, and the history of Arabic logic in 12th century Khwārazm, I propose to read Rashīd ad-Dīn's "A Doubt About *reductio ad absurdum*" as a wholesale attack on the consistency of Avicennan logic (section 2). This attack is based on the following argument: Since *reductio* is needed to prove certain conversions that in turn are needed to prove the validity of all but the four first figure syllogistic moods, *reductio* is indispensable for the entire deductive system. However, *reductio* can be used to prove several distinct propositions as conversions of a single proposition. As every proposition only has one converse, some of them must be false. Hence, *reductio* is not an adequate proof strategy for conversion, and, by extension, not for the validity of syllogistic moods. The argument, as I explain in detail in section (3), would not work against Aristotle's assertoric syllogistic, as it capitalizes on the profusion of propositional types. The earliest detailed response, most likely from ar-Rāzī's interlocutor in the *Transoxanian Debates*⁷ Afḍal ad-Dīn Ibn Ghaylān al-Balkhī (d. ca. 1194), was, I argue, eventually not successful (4). Another contemporary, Shihāb ad-Dīn as-Suhrawardī (d. 1191), acquiesced in the insufficiency of *reductio* proofs, but believed there was no harm for logic overall (5). It was only with ar-Rāzī, whose toolkit of newly forged logical terms for novel distinctions was richer than al-Waṭwāṭ's, that the attack was forcefully and, it seems, decisively met (6). I conclude with a summary and some broader observations on what this debate may tell us about the history of logic and philosophy in the 12th century (7).

7 *Munāzarāt Fakhr ad-Dīn ar-Rāzī fī bilād mā warā'a an-nahr*, in: Fathalla Kholeif, *A Study on Fakhr al-Dīn al-Rāzī and His Controversies in Transoxiana* (Beirut: Dar al-Mashriq, 1966), 31 (55 of Kholeif's translation). See also Ayman Shihadeh, "From al-Ghazālī to al-Rāzī: 6th/12th Century Developments in Muslim Philosophical Theology," *Arabic Sciences and Philosophy* 15, no. 1 (2005): 153.

2 Rashīd ad-Dīn al-Waṭwāt and the History of Arabic Logic

Rashīd ad-Dīn al-Waṭwāt was a high-ranking court official (*ṣāhib diwān al-inshāʾ*) and poet laureate under the Khwārazmshāhs Atsiz (r. 1127–1156) and Il-Arslān (d. 1172). Hence, we have considerable information about his life—but nothing that connects him to logic.⁸ Besides his literary works in Persian and Arabic, we have a significant number of letters from his diplomatic correspondence.⁹ While he is not otherwise known to have engaged in philosophy, among his letters is an invitation extended, on behalf of the Khwārazmshāh, to the philosopher Abū l-Barakāt al-Baghdādī (d. 1164/5) to “bless the court with his scholarship.”¹⁰ Griffel has taken this letter as evidence that Rashīd ad-Dīn appreciated philosophy.¹¹ The eulogizing tone of the letter is, however, carefully crafted and purposely employed: while the invitation may tell us something about the Khwārazmshāh’s attitude towards philosophy, it cannot be taken to represent Rashīd ad-Dīn’s.¹² So it remains curious that he should have written a logical treatise that must have required fairly extensive reading in advanced logic. If we must assume that figures like Rashīd ad-Dīn were able to intervene at such a level of technicality in logical debates, this might also tell us something about the status of logic in that period.

8 Among the main sources are Yāqūt b. ‘Abd Allāh al-Ḥamawī, *Kitāb Irshād al-arīb ilā maʾrifat al-adīb: al-maʾrūf bi-Muʾjam al-udabāʾ*, aw, *Ṭabaqāt al-udabāʾ*, ed. by David S. Margoliouth (Leiden: Brill, 1970), vii: 91–95; ‘Alā’ ad-Dīn ‘Aṭā Malik al-Juwaynī, *The Taʾrikh-i Jahān-gushā of ‘Alā’ ad-Dīn ‘Aṭā Malik al-Juwaynī (composed in A.H. 658 = A.D. 1260)*, ed. by Muḥammad Qazwīnī (Leyden and London: E.J. Brill, Luzac & Co., 1912), 11: 6–14; Muḥammad ‘Awfī, *Tadhkirah-i lubāb al-albāb*, ed. by Edward Granville Browne and Muḥammad ‘Abbāsī (Tehran: Kitābforūshī-i Fakhri Rāzī, 1982), 1: 80–86. See also Natalia Chalisova, “Waṭwāt, Rašīd-al-Dīn,” *Encyclopædia Iranica* (online edition, 2000), <https://iranicaonline.org/articles/watwat-rasid-al-din>.

9 For al-Waṭwāt’s poetry and literary works in Persian and Arabic, see for example Rashīd ad-Dīn Muḥammad b. Muḥammad al-Waṭwāt, *Dīvān-i Rashīd ad-Dīn Waṭwāt*, ed. by Saʿīd Nafīsī (Tehran: Kitābkhanah-i Bārānī, 1960); *Maṭlūb kull ṭālib min kalām ‘Alī ibn Abī Ṭālib = Ali’s hundred Sprüche. Arabisch und persisch paraphrasiert von Reschideddin Watwat, nebst einem doppelten Anhang arabischer Sprüche*, ed. by Heinrich Leberecht Fleischer (Leipzig: Vogel, 1837). A selection of his Arabic letters are collected in *Majmūʿat rasāʾil Rashīd ad-Dīn al-Waṭwāt*, ed. by Muḥammad Fahmī (Cairo: Maktabat al-ādāb, 1315/1897–1898). See also Horst Heribert, “Arabische Briefe der Ḥōrazmšāhs an den Kalifenhof aus der Feder des Rašīd ad-Dīn Waṭwāt,” *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 116, no. 1 (1966): 24–43.

10 Waṭwāt, *Majmūʿat rasāʾil Rashīd ad-Dīn al-Waṭwāt*, 1: 64–65.

11 Frank Griffel, *The Formation of Post-Classical Philosophy in Islam* (New York: Oxford University Press, 2021), 110.

12 Moreover, it seems the Khwārazmshāh needed a physician, not a philosopher: *wa-alān massat ḥājatuḥ ilā ṭabīb*; Waṭwāt, *Majmūʿat rasāʾil Rashīd ad-Dīn al-Waṭwāt*, 65.

The short treatise “A Doubt About *reductio ad absurdum*” together with the detailed replies were first edited by Dānishpazhūh in 1961 and tentatively attributed to Waṭwāṭ and Ibn Ghaylān al-Balkhī (d. ca. 1194?).¹³ More recently, the texts have been published as part of ‘Umar b. Sahlān as-Sāwī’s (d. ca. 1145) *As’ila wa-ajwiba* (Questions and Answers).¹⁴ The texts are however not by Sāwī. The editor of the *Questions and Answers* simply failed to see that a folio of the ms was misplaced and that on fol. 78 a new text begins. So it was not until the new edition by Gholamreza Dadkhah and Asadollah Fallahi in 2018 that the question of the authorship of these texts was taken up again.¹⁵ Fallahi and Dadkhah were able to establish, beyond any reasonable doubt, that the short treatise “A Doubt About *reductio ad absurdum*” was indeed written by Rashīd ad-Dīn.¹⁶ While the evidence for the attribution of the replies to Ibn Ghaylān is not conclusive, it is still strongly suggestive.¹⁷ Since the publication of Dadkhah and Fallahi’s edition, the texts have to my knowledge not received any sustained scholarly attention.

The Tehran manuscript containing Rashīd ad-Dīn’s treatise was copied during the author’s lifetime in 1174 and is a precious source for our understanding of philosophical activity in 12th century Khwārazm.¹⁸ It is a compilation of debates between philosophers, including—besides our texts—the correspon-

13 Muḥammad Taqī Dānishpazhūh, “Gūsha’i az ta’rikh-i manṭiq dar Īrān: Radd-i Ghaylānī bar shakk-i Rashīd Waṭwāṭ dar qiyās-i khulf,” *Nashriyyah-i dānishkadah-i Adabiyyāt-i Tabriz* 13 (1961): 289–310.

14 Zayn ad-Dīn ‘Umar b. Sahlān as-Sāwī, *Nahj at-taqdīs wa-as’ila wa-ajwiba: Risālatātān fī l-manṭiq wa-l-falsafa*, ed. by Ḥasan al-Marāghī (Tehran: Mu’assasat-i Shams-i Tabrizī, 1385/2006), 71–108.

15 The editors preface the editions of both works by short introductions in Persian from which I have greatly benefited even though I do not always agree, see Gholamreza Dadkhah and Asadollah Fallahi, *Manṭiq dar Īrān-i sadah-ī shishum* (Tehran: Mu’assasah-i Pazhūhishī-i Hikmat va Falsafah-i Īrān, 1396/2018), 41–60; 73–82. For criticism of how the editors present the relation between al-Mas’ūdī’s and Ibn Ghaylān’s texts, and especially the context of Ibn Ghaylān’s reply to Waṭwāṭ, see Hassan Ansari’s review in one of his blogs (<http://anşari.kateban.com/entry2028.html>, published on 9 January 2014).

16 The text contained in ms Tehran: Kitābkhānah-i Majlis-i Shūrā-yi Islāmī, 599 is the same as that in the ms Tokyo: Institute of Oriental Culture, Daiber Collection 11 no. 85, foll. 11^v–14^r, which clearly identifies Rashīd ad-Dīn al-Waṭwāṭ as its author. See *Manṭiq dar Īrān-i sadah-ī shishum*, 43. Cf. Griffel, *The Formation of Post-Classical Philosophy in Islam*, 108–110.

17 For the attribution to Ibn Ghaylān, see Dadkhah and Fallahi, *Manṭiq dar Īrān-i sadah-ī shishum*, 75–76.

18 ms Tehran: Kitābkhānah-i Majlis-i Shūrā-yi Islāmī, 599, which contains both texts; see *Manṭiq dar Īrān-i sadah-ī shishum*, 43.

dence between Avicenna and Abū Rayḥān al-Bīrūnī (d. ca. 1050), that between Sayyid Sharaf az-Zamān al-Īlāqī (d. 1141) and Tāj ad-Dīn ash-Shahrastānī (d. 1153), and the previously mentioned *Questions and Answers* by as-Sāwī.¹⁹ The discussions about *reductio* we are concerned with here shed light not only on their authors' positions, but more broadly on the history of Arabic logic as a contested area in the early post-Avicennan period.

Rashīd ad-Dīn's treatise, whose full title *Fī Shakk 'alā qiyās al-khulf wa-l-ishkāl al-muftaqir ilā l-hall wa-l-kashf* may be translated as "On a Doubt About *reductio ad absurdum* and the Ambiguity That Can Neither Be Resolved Nor Exposed," appears to deal with a specific question in logic: the *reductio ad absurdum*. A *reductio ad absurdum* is a proof strategy by which, in order to prove p, not-p is assumed, and then a contradiction or absurdity is deduced. Frank Griffel described the text as a "rejection of a widespread argumentative strategy [to] prove the truth of a proposition *per impossibile* (*qiyās al-khulf*)."²⁰

Griffel's description, however, misses the point of the text. Rashīd ad-Dīn does not argue against *reductio* as an argumentative strategy. He argues against *reductio* specifically as a means to establish the converse of a proposition in syllogistic:

What is mostly used in establishing the converse of a proposition and its proof is the *reductio ad absurdum*. But *reductio* is not, according to what is presented in this doubt, suitable for that. If it cannot be established by means of [*reductio*], then no converse of any proposition can be proven.

Here is why. The true proposition whose converse is sought by *reductio* is "No B is J as long as it is B." This is the first proposition that the philosopher [Avicenna] adduces in his book [*ash-Shifā'*, *Kitāb al-Qiyās*, 76] and whose converse he specifies, proves, explains, and establishes by *reductio*. This procedure is used very widely in logic, especially in the second figure.²¹

Yet it would be wrong to assume that the treatise is a discussion of a minute detail in syllogistic. In doubting the validity of *reductio* proofs for conversions,

19 For a description of the MS, see Dānishpazhūh, "Gūsha'i az ta'rikh-i mantiq dar Īrān." Compare the introduction in Dadkhah and Fallahi, *Mantiq dar Īrān-i sadah-'i shishum*.

20 Griffel, *The Formation of Post-Classical Philosophy in Islam*, 109.

21 Dadkhah and Fallahi, *Mantiq dar Īrān-i sadah-'i shishum*, 65.1–6.

Rashīd ad-Dīn wants to attack the very foundations of Peripatetic logic by constructing an argument that shows the whole deductive system to be inconsistent.²² The main argument is simple: it purports to show that *reductio* can be employed to establish several distinct converse propositions for the same original proposition. If this is the case, al-Waṭwāṭ continues:

Now after having set this out, I say: It is a well-known principle [in logic] that for each proposition there is exactly one converse. But [in this case] *reductio* has produced three converse propositions for this [single] negative conventional proposition. But the true converse, if it is among them, will only be one, and the others will not be true [conversions]. Yet if *reductio* sometimes leads to the true converse, and sometimes to false ones, it is not trustworthy, and the establishment of a converse proposition and its correctness cannot be based on it. As this example has made clear, how then are the syllogisms that are reduced to the first figure by means of conversion to be trusted? And how the conclusions produced by them? This is the present doubt.²³

In Peripatetic syllogistic, *reductio* is the only way to prove certain conversions. Conversion is in turn needed to prove the validity of all but the four perfect syllogistic moods. If *reductio* is indeed not fit for purpose, the deductive system would contain theorems that cannot be proved. At best, the syllogistic would be truncated to the first figure.

Instead of merely “cautioning scholars against the argument *per impossibile*,”²⁴ Rashīd ad-Dīn here launches a wholesale attack on Peripatetic logic as developed by the philosophers. He wants to show that *reductio* can be employed to prove several conversions for the same original proposition. The “Ambiguity That Can Neither Be Resolved nor Exposed” may be taken to refer to the multiplicity of conversions that *reductio* proves for a single proposition. Without an argument to resolve or expose this ambiguity, much of Peripatetic logic is inconsistent.

22 For *reductio* as indispensable for Aristotle's syllogistic, see Marko Malink, “Demonstration by *reductio ad impossibile* in *Posterior Analytics* 1. 26,” *Oxford Studies in Ancient Philosophy* 58 (2020): 91–155; Malink convincingly argues that Aristotle's most powerful version of the deductive system in fact needs *reductio* for all but the four universal moods Barbara, Celarent, Cesare and Camestres. For *reductio* in Avicenna, see Wilfrid Hodges, “Ibn Sīnā on *reductio ad absurdum*,” *The Review of Symbolic Logic* 10, no. 3 (2017): 583–601; Kamran Karimullah, “Unusual Syllogisms: Avicenna and Najm al-Dīn al-Kātibī on *per impossibile* Syllogisms and Implication (*luzūm*),” *Oriens* 43, no. 1–2 (2015): 223–271.

23 Dadkhah and Fallahi, *Manṭiq dar Irān-i sadah-i shishum*, 68, 1–8.

24 Griffel, *The Formation of Post-Classical Philosophy in Islam*, 109–110.

A treatise with such purpose throws light on the ways in which Rashīd ad-Dīn was both writing philosophical works, like this sophisticated logical treatise, and at the same time staunchly opposed the Avicennan philosophers: he was attacking the very foundations of their theory of science, and he did it on their own terms.²⁵ As serious as Rashīd ad-Dīn's attack was, as little lasting success it had. But one should be careful not to assume that as a court official, poet and litterateur, its author lacked logical acumen.

3 Rashīd ad-Dīn's Argument in "A Doubt About *reductio ad absurdum*"

The treatise falls in four parts: (1) a prologue in typically flowery language extolling the extraordinary difficulty of the problem at hand and the failure of others to resolve it (63.4–64.9), (2) the main argument that *reductio* can be employed to prove several conversions (65.1–68.9), (3) an anticipated objection to the main argument and four responses to it (69.2–72.6), and (4) a comparison of *reductio* with the calculation of checksums in Indian arithmetic (72.7–11). In what follows I shall focus on (2) and (3).

3.1 The Structure of the Main Argument

Rashīd ad-Dīn's argument departs from an uncontroversial starting point: Avicenna's proof for the simple e-conversion as given in *al-Qiyās* of *ash-Shifā'*.²⁶ Simple conversion ('*aks mustawī*') is defined as the exchange of the subject and predicate terms of a proposition without altering the proposition's quality (affirmation/negation) and truth-value.²⁷ Rashīd ad-Dīn relates Avicenna's proof as follows:

The philosopher says: "This proposition ['No B is J as long as it is B'] converts as itself, that is, the converse is 'No J is B as long as it is J.' [66] Then he produces a concise, clear, and evident proof to establish this converse and its correctness. He says: "If it is not true that 'No J is B as long as it is J,' then the truth of its contradictory necessarily follows, which is 'Some B is

25 For al-Waṭwāt's condemning attitude towards philosophy, see Jan Rypka, *History of Iranian Literature*, ed. by Karl Jahn (Dordrecht: D. Reidel, 1968). Cf. Griffel, *The Formation of Post-Classical Philosophy in Islam*, 110.

26 Abū 'Alī al-Ḥusayn Ibn Sīnā, *Kitāb ash-Shifā'*, *al-Manṭiq*, *al-Qiyās* (Cairo: al-Hay' al-'amma li-shu'ūn al-maṭābi' al-amīriyya, 1964), 76.

27 Ibn Sīnā, *Kitāb ash-Shifā'*, *al-Manṭiq*, *al-Qiyās*, 75.

J, either always as long as it is J, or once without reference to time.' Now we postulate one of the Js, and in so doing J-ness and B-ness occur together; if [this is so] at some time, then some J is B and some B is J, in the same situation. The original proposition had been that 'No B is J as long as it is B' is true. But this is absurd."²⁸

The strategy al-Waṭwāt uses to reject Avicenna's proof is to show that the same proof can be employed to establish several converse propositions for "No B is J as long as it is B."

For convenience, let us lay out al-Waṭwāt's construal of Avicenna's *reductio* proof. In this case, the proof also involves ecthesis (*iftirāḍ*), which presupposes the principle (*i*) that iff some Js are B, there is a D such that all Ds are J and B. So, to prove C₁ "No J is B as long as it is J" take:

1. No B is J as long as it is B	Premise (P ₁)
2. Not (No J is B as long as it is J)	contradictory of C ₁ assumed for <i>reductio</i>
3. Some J is once B while J	(=2)
4. There is a D which is a least once B and J	ecthesis (<i>i</i>)
5. Some B is at least once J while B	from 4

But the original proposition was "No B is J as long as it is B." So (5) is absurd. To understand al-Waṭwāt's next argumentative step, we need to introduce some terminology. As we said, in contrast to Aristotle's syllogistic, Avicenna's system takes every proposition to be modalized, either alethically, or temporally, or as a mix of both. As a result, most post-Avicennan Arabic logicians recognized a total of at least 13 modal propositions (6 simple and 7 mixed).²⁹ The proposition for which Rashīd ad-Dīn claims Avicenna was seeking to provide a proof of conversion is the so-called general conventional proposition (*'urfīyya āmma*):

P₁: No B is J as long as it is B

The judgment expressed by this proposition is that J is perpetually denied of B under the condition that a certain attribute applies to the subject, for example

²⁸ Dadkhah and Fallahi, *Manṭiq dar Īrān-i sadah-i shishum*, 65,8–66,7.

²⁹ On the number of commonly discussed modal types, see Street, "Afḍal al-Dīn al-Khūnājī (d. 1248) on the Conversion of Modal Propositions," 507–511.

“No writer rests her fingers as long as she is writing.”³⁰ Rashīd ad-Dīn proceeds to argue that one can now apply the same *reductio* proof to establish two differently modalized propositions as the conversions of P1. The first converse propositions he sets out to prove by the same strategy is a general absolute proposition (*muṭlaqa ʿamma*):

C2: No J is B by general absoluteness,

which expresses the judgment that B is actually denied of all Js, as in “No stone is breathing, without exception,” which is perpetually true of all actual stones.³¹ So for C2, we have:

1.	No B is J as long as it is B	Premise (P1)
2.	Not (No J is B by general absoluteness, i.e.: ever actually)	contradictory of C2 assumed for <i>reductio</i>
3.	Some J is always B	(=2)
4.	There is a D which is a least once B and J	ecthesis (<i>i</i>)
5.	Some B is at least once J while B	from 4; absurd

Because the predication in (3) is perpetual, J-ness and B-ness occur together in at least one case (5), and this contradicts the original premise (1). Hence, (5) is absurd.

The same proof can be run for the general possibility proposition (*mumkina ʿamma*):

C3: No J is B by general possibility.

This proposition expresses the judgment that there is no absolute necessity for its contradictory proposition to be true. In other words, it is a one-sided possibility proposition, as in “By general possibility, no fire is cold.”³² There is no

³⁰ I take the descriptions of truth conditions for modalized propositions from Najm ad-Dīn ʿAlī b. ʿUmar al-Kātibī, *ash-Shamsiyya fi l-qawāʿid al-manṭiqiyya* (Beirut: al-Markaz ath-thaqāfi al-ʿarabī, 1998), 214–216; now also in Street, *Najm al-Dīn al-Kātibī’s al-Risālah al-Shamsiyyah*, 35–39. The text is of course much later (al-Kātibī died in 1276) and it is still unclear in how far the truth conditions for modalized propositions were systematically standardized at the time al-Waṭwāṭ was writing. But al-Kātibī’s descriptions work well for our present purposes. On this, see now the commentary ad loc. in Street, *Najm al-Dīn al-Kātibī’s al-Risālah al-Shamsiyyah*, 168–179.

³¹ Kātibī, *ash-Shamsiyya fi l-qawāʿid al-manṭiqiyya*, 214.15–17; Street, *Najm al-Dīn al-Kātibī’s al-Risālah al-Shamsiyyah*, §52.6.

³² Kātibī, *ash-Shamsiyya fi l-qawāʿid al-manṭiqiyya*, 214.18–20; Street, *Najm al-Dīn al-Kātibī’s al-Risālah al-Shamsiyyah*, §52.7.

absolute necessity that fire is not cold, because hotness is not part of its essence. To prove C₃, step (2) would be “Not (No J is B by general possibility),” which is equivalent to (3) “Some J is necessarily B.” As the predication in (3) is necessary, J-ness and B-ness occur together in at least one case, and this contradicts the original premise (1).

If Avicenna’s proof is valid, al-Waṭwāṭ claims, so must be his. And if his proofs are valid, he has shown that *reductio* produces several conversions for a single proposition. But as every proposition only has one converse proposition, *reductio* cannot be trusted as a proof for conversion. Yet without *reductio*, some conversions simply cannot be proved, and there is no way to prove any but the four first figure syllogistic moods. If the above proofs are valid, most of Peripatetic logic is invalidated.

3.2 *Replies to an Anticipated Objection*

An obvious objection to al-Waṭwāṭ’s argument is to say that *reductio* can only be used to establish and prove more than one converse for a given proposition, if the converse is now taken as general absolute, now as a general possible proposition. For the specific true converse (C₁) is contained in both the general absolute (C₂) and the general possible (C₃) proposition. What that means is, supposedly, that if

C₁: No J is B as long as it is J

is true, then

C₂: No J is B by general absoluteness

and

C₃: No J is B by general possibility

are necessarily true as well because they are modally weaker than C₁. That is, they are implied by C₁ but do not imply it. The reason *reductio* can be employed to prove all of them is that it “extends” (*istimrār*) from the strongest and true converse to the weaker ones.

Hence, the objector would concede that more than one converse can be established by *reductio*. But this is trivial because every proposition only has one true converse, namely the strongest, and under whatever circumstances this converse is true, any other modally weaker converse will be as well. Al-Waṭwāṭ offers four arguments to dispel this objection. Whether these argu-

ments can succeed will be discussed in the next section together with Ibn Ghaylān's replies.

First, Rashīd ad-Dīn argues, anyone making an objection along the lines sketched above must already know which one the true converse is in order to judge that the others are all included in it. And she must have come to know the true converse without the help of *reductio*, for otherwise she could not be sure that the converse established by *reductio* in the first place is really the true one. This is like putting the cart before the horse, says al-Waṭwāt, for instead of proving the true converse by *reductio*, the true converse is used to prove that *reductio* works.³³ And, it should be added, some conversions cannot be proved without *reductio* to begin with.

The second counterargument is terse and somewhat mysterious:

Also, considering the general absolute and the general possible in one way, they both contain all their divisions of something, and considering them in another way they only contain one division of another thing. Once *reductio* is applied to them on the first consideration, then the intended division—which is the true specific converse—cannot be established by *reductio*.³⁴

Rashīd ad-Dīn claims that there are two ways in which a general absolute and a general possible proposition may be considered. When considered in the way that is required for the application of *reductio* to establish C₁, the specific converse cannot be established so as to include the others. Consider the following: A general possible proposition like “All fire is warm by general possibility” is true in four different situations:

- 1) when the substance of the subject exists
- 2) when the substance of the subject is described as such, without actually existing
- 3) when the predicate actually applies, without the subsistence of the description
- 4) when the predicate possibly applies, without actually applying³⁵

Now, a general conventional like “Every writer is moving as long as she's writing” is true only in the first two situations, whereas a general absolute like “Every stone is inanimate, without exception” is true in the first three. The first way in

33 Dadkhah and Fallahi, *Manṭiq dar Īrān-i sadah-i shishum*, 69.4–70.2.

34 Dadkhah and Fallahi, *Manṭiq dar Īrān-i sadah-i shishum*, 70.3–5.

35 I here follow Dadkhah and Fallahi's interpretation, *Manṭiq dar Īrān-i sadah-i shishum*, 55.

which each of C2 and C3 may be considered the regular converse of a general conventional P1 is that, generally, each is true in all situations in which P1 is. The second way is that C2 and C3 differ in one respect, namely that in situation (4) C3 may be true and C2 false. When they are considered in the first way, one may apply *reductio* to C2 and C3 and prove that they are conversions of P1, but then *reductio* will not serve to establish C1 as the true converse, because for that one needs to consider that in situations (1) and (2), C2 and C3, respectively, may be true even though C1 is false. That is, when the essence is not described as such, or the predicate only possibly—but not actually—applies.

The third reply is a remark that if the objection were to hold, this would imply that every modalized proposition that has a regular converse would convert to a general possibility proposition. Because it is the weakest of all modalized propositions, any proposition that converts would then have at least a general possibility proposition as its converse, and logicians could just as well fold up shops:

However, the matter is not like this. Every proposition that has a converse has a specific converse. One must take pains and use patience to identify that specific converse. But *reductio*, according to what I have adduced in terms of doubts, is not fit for establishing that specific converse, nor for proving its correctness.³⁶

As the fourth and last reply to the objection, Rashīd ad-Dīn purports to offer an example of a *reductio* proof for a converse which even though it is not included in the specific true converse still has *reductio* extend to it. The converse C4 for the example is “No J is B at any point in time when it is J”—in a sense, he specifies, different from “always as long as it is J”—and the proof runs as follows:

1.	No B is J as long as it is B	Premise (P1)
2.	Not (No J is B at a specific point in time when it is J)	contradictory of C4 assumed for <i>reductio</i>
3.	Some J is B at the specific point in time when it is J	(=2)
4.	There is a D which is B and J at a specific point in time	ecthesis (<i>i</i>)
5.	Some B is J at the specific point in time when it is B	from 4; absurd

³⁶ Dadkhah and Fallahi, *Manṭiq dar Īrān-i sadah-ʿi shishum*, 70.6–71.7.

Here, the specific true converse, i.e., C1 “No J is B as long as it is J,” does not include the converse to be proved, i.e., C4 “No J is B at any point in time when it is J,” because C4 is, in contrast to C2 and C3, stronger than C1. If J is B at a specific time at which it happens to be described by J, it might still be false that J is B for the entire duration at which it is described as J. However, the same *reductio* proof “extends” to showing that C4 is a converse of P1.

If there are stronger conversions than the specific true conversion that can be proved by the same *reductio*, the anticipated objection no longer has any force. For it was assumed that every convertible proposition has a number $n+1$ of conversions such that if they can be proved by *reductio*, n conversions yield propositions weaker than the true converse. If that is not the case, even if all other counterarguments to the anticipated objection fail, this example, Rashīd ad-Dīn claims, will make “short shrift of the entire argument of the objector.”³⁷

4 Ibn Ghaylān al-Balkhī's Replies to al-Waṭwāt

About Ibn Ghaylān we know much less than about al-Waṭwāt, but we do know that he engaged with philosophy. As he tells us himself, he became interested in the study of logic while he was enrolled at the Niẓāmiyya madrasa of Marw in 1129 and that he moved to Nishapur in 1130 to further pursue his logical studies.³⁸ As our MS Majlis 599 shows, he was still alive in 1180 when the copy was made, and he appears to have debated with Fakhr ad-Dīn ar-Rāzī sometime after 1186.³⁹ Ayman Shihadeh has suggested, as a rough estimate, that he was born in ca. 1111–1112 and died in ca. 1194.⁴⁰

In his study of Ibn Ghaylān's critical gloss on the *materia medica* of Avicenna's *Canon of Medicine*, Shihadeh characterizes Ibn Ghaylān as a “proto-neo-Ash'arī” who like his contemporary al-Mas'ūdī represents a Ghazālīan current of polemical anti-Avicennists that were “effectively career critics of Avicenna.”⁴¹ Ibn Ghaylān, even more so than his colleague al-Mas'ūdī, is said to

37 Dadkhah and Fallahi, *Manṭiq dar Īrān-i sadah-i shishum*, 72.6.

38 Afḡal ad-Dīn Ibn Ghaylān al-Balkhī, *Hudūth al-'ālam*, ed. by Mahdī Muḥaqqiq (Tehran: Mu'assasah-i Muṭāla'āt-i Islām-i, 1377/1998), 10–11.

39 MS Tehran: Kitābkhanah-i Majlis-i Shūrā-yi Islāmī, 599 (6), fol. 174a. Cf. Ayman Shihadeh, “A Post-Ghazālīan Critic of Avicenna: Ibn Ghaylān al-Balkhī on the *Materia Medica* of the Canon of Medicine,” *Journal of Islamic Studies* 24, no. 2 (2013): 139.

40 “A Post-Ghazālīan Critic of Avicenna,” 139–140.

41 “A Post-Ghazālīan Critic of Avicenna,” 137–138.

have been “motivated [...] by a desire to defend orthodoxy against the false doctrines advocated by Avicenna.”⁴² And, in fact, Ibn Ghaylān even criticized Avicenna on mixed modal syllogisms, “refuting the errors of Avicenna in a field where no one could imagine he might err, namely in logic.”⁴³ Ibn Ghaylān’s reply to the doubt about *reductio* is about twice as long as al-Waṭwāt’s text and carefully written. Given the polemical attitude exhibited in his other works, and especially his criticism of Avicenna’s logic, it is remarkable that here he goes to considerable lengths to save the consistency of Avicennan logic.

4.1 *Replies to the Main Argument*

After a prologue in which Ibn Ghaylān mentions a certain Shihāb ad-Dīn who requested him to reply to the doubt about *reductio* that had been transmitted from a certain Sharaf az-Zamān,⁴⁴ he begins by summarily setting out Rashīd ad-Dīn’s main argument as follows:

- (1) Logicians employ *reductio ad absurdum* to establish the conversions of propositions. But *reductio* is not suitable for that, because it may be employed, following the exact same pattern, for something that was not intended to be established.
- (2) But it is also well known that every proposition only has one converse. Yet *reductio* produces for a single proposition several con-

42 “A Post-Ghazālīan Critic of Avicenna,” 138.

43 Ibn Ghaylān al-Balkhī, *Ḥudūth al-‘ālam*, 11. Translation Shihadeh, “A Post-Ghazālīan Critic of Avicenna,” 141.

44 There are a number of problems with the text as the editors present it. It seems safe to say that Ibn Ghaylān’s reply is the first of several replies to doubts raised by others that were collected as *‘Uyūn ar-rasā’il fī funūn al-masā’il* (which the editors preface to al-Waṭwāt’s treatise); see Ansari’s argument in his blog (<http://anṣārī.kateban.com/entry2028.html>), as well as Dānīshpazhūh, “Gūsha’i az ta’rīkh-i mantīq dar Īrān,” 293; Shihadeh, “A Post-Ghazālīan Critic of Avicenna,” 142. The Sharaf az-Zamān may plausibly be identified with al-Ilāqī, whose exchange with ash-Shahrastānī is also preserved in the same MS. Al-Ilāqī not only worked for the emir of Ibn Ghaylān’s hometown Balkh, ‘Alā’ ad-Dīn Qumāj b. ‘Abdallāh al-Balkhī, he also was the teacher of as-Sāwī whose *Baṣā’ir* had such palpable influence on as-Suhrawardī. On al-Ilāqī, see Ahmed H. Al-Rahim, *The Creation of Philosophical Tradition: Biography and the Reception of Avicenna’s Philosophy From the Eleventh To the Fourteenth Century A.D.* (Wiesbaden: Harrassowitz, 2018), 65–67. Ibn Ghaylān and al-Waṭwāt may have debated al-Ilāqī’s question in person, as suggested by Dānīshpazhūh, “Gūsha’i az ta’rīkh-i mantīq dar Īrān,” 293. It is unlikely but not inconceivable that the Shihāb ad-Dīn whom Ibn Ghaylān mentions and accuses of having misrepresented his own position could have been as-Suhrawardī. He would have been in his early twenties (he died at around thirty-seven).

verse propositions, only one of which can be the true one. If *reductio* also leads to false conversions, it cannot be relied on. For these two claims he presents as an example a negative absolute conventional proposition and deduces by means of *reductio* three converse propositions from it.

- (3) Then he says: If *reductio* cannot be used to [reliably] establish the converse of a proposition, how are the conclusions of any syllogism that is reduced to the first figure by conversion to be trusted?⁴⁵

Ibn Ghaylān's overall strategy is to deny the truth of two central claims of al-Waṭwāṭ's argument as he presents it. First, and perhaps somewhat surprisingly, he denies that *reductio* is used to establish the converse of a proposition to begin with. Second, he denies that every convertible proposition has exactly one converse.

Instead, a converse is stipulated in accordance with the definition of conversion. *Reductio* is used to check whether, if the original proposition is true, the stipulated converse is true as well. Once this is proved, any modally weaker proposition will pass as a converse, too. But just as with syllogistic conclusions, where several propositions may be implied by the premises, logicians are usually only interested in the strongest propositions, because they have greater deductive power.

The argument to deny that *reductio* is used to establish certain conversions of propositions hinges on a clear distinction between proof procedure and conversion that al-Waṭwāṭ had arguably blurred. Citing Avicenna's proof for e-conversion as presented by Rashīd ad-Dīn, he points out that if Avicenna had wanted to employ *reductio* to prove that C_1 is the converse of P_1 , instead of "If 'No J is B as long as it is J' is not true ..." he would have said "If 'No J is B as long as it is J' is not the converse ..."⁴⁶

The distinction should of course be sharp: conversion is not a proof; it is a stipulated rule that itself does not require deductive steps. The converse is simply established according to the rule contained in the definition of conversion: exchange subject and predicate and maintain quality and truth value. Whether *reductio* is a demonstration is perhaps less clear. But that it is only employed to check whether, for any converse established following the rule, the truth value is the same as the original proposition, is obvious:

45 Dadkhah and Fallahi, *Manṭiq dar Īrān-i sadah-i shishum*, 86.5–13.

46 Dadkhah and Fallahi, *Manṭiq dar Īrān-i sadah-i shishum*, 87.8–9.

If someone says: They adduce a syllogism from which follows the claim that “the proposition ‘No B is J as long as it is B’ converts like itself,” i.e., “No J is B as long as it is J.” This is the claim to establish that it is the converse. So the proof pertains to this claim and it is a specific one.

Then the reply to him is this: Your claim “this proposition is the converse of that proposition” comprises three things. First, that the subject of the claim in the converse is the predicate of the original [proposition], and the predicate of the former the subject of the latter. [88] Second, that their qualities are both the same. And third, that they are either both true or both false. The nominal definition (*rasm*) of “converse” in the books on this art [i.e., logic] that are common in our time is that it is “the turning of a proposition’s predicate into a subject, and its subject into a predicate, preserving its quality and its truth or falsity.” The expression “converse” may at this point be taken as a verbal noun (*maṣḍar*) [i.e., “conversion”], and once the proposition is called a “converse,” it is turned into the sense of a grammatical object (*mafʿūl*) [i.e., the converted]. Then the subject of the proposition that was claimed to be a converse is the predicate of the original proposition, and its predicate the subject of it. Its [quality] is the quality of [the original proposition]. None of this needs to be confirmed by demonstration. The proof is only to confirm that the [converse] is true if the original proposition is assumed to be true. Here we find the subject of one proposition to be the predicate of the other, and its predicate the subject of the other, their qualities being the same. So we accept that the truth of one of them implies the truth of the other, and we judge that it is its converse according to the requirements of the mentioned delimitation.⁴⁷

However, while no proof is needed to show that subject and predicate term have been exchanged and the quality has remained the same, knowing whether the truth value has remained the same can, for some conversions, be achieved only by employing *reductio*. By pointing out this distinction, Ibn Ghaylān makes it clear that *reductio* is not supposed to *identify* a converse, as Rashīd ad-Dīn seems to presuppose in his argument. But given that establishing a converse requires establishing that the stipulated converse is true iff the original proposition is true, the fact that this can be done for a range of different propositions remains a problem. And it remains a serious problem if there is no way of identifying the strongest converse.

47 Dadkhah and Fallahi, *Manṭiq dar Īrān-i sadah-i shishum*, 87.15–88.10.

That, given the standard definition for “converse,” there are more than one converse for every convertible proposition in the fully modalized system is hard to deny, and Ibn Ghaylān accepts it. In fact, he claims that no one ever said otherwise:

As for his words “It is a well-known principle [in logic] that for each proposition there is exactly one converse,” they need to be corrected. For it is not necessary for every proposition that it has a converse, so that he could describe them all together. The negative particular proposition, be it absolute or modalized, does not convert. Neither does the negated possibility [proposition], be it universal or particular, and in whichever modality. Moreover, if a proposition has several conversions, it follows that it has [at least] one. Having one conversion does not preclude it from having more than one. Perhaps he was negligent in his expression and meant that every convertible proposition has exactly one converse. Just as he was negligent in his expression “*reductio* has produced three converse propositions for this [single] negative conventional proposition.” [89] Based on what he believes there even should be four: the conventional, the general absolute, the possible absolute, and the proposition conditioned by non-perpetuity. Indeed, adding the fourth to the first three, is a monstrous mistake, as will be shown later.⁴⁸

Not only does Ibn Ghaylān, somewhat pedantically, point out that some propositions do not have a converse at all and that having one converse does not preclude there being others (both of which al-Waṭwāṭ surely would not deny). He also points out that Rashīd ad-Dīn believes that there are in fact four converse propositions for P₁, as he adds the non-perpetual conditioned proposition later on.

It is noteworthy that Ibn Ghaylān thinks Rashīd ad-Dīn’s example seeks to establish the following negated special conditioned proposition (*mashrūṭa khāṣṣa*) as a fourth converse:

C4’: Necessarily, no J is B as long as it is J, but not perpetually.

As a compound modal proposition made up from a general conditioned proposition (*mashrūṭa ‘amma*) and the restriction that the relation of the subject to the predicate is not perpetual with regard to the substance of the subject, what

48 Dadkhah and Fallahi, *Manṭiq dar Īrān-i sadah-‘i shishum*, 88.12–89.3.

is judged by this proposition is, for example: “Necessarily, no writer rests his fingers as long as she’s writing, but not so perpetually.”⁴⁹ While the same criticism that Ibn Ghaylān advances would apply to other modal types, this is arguably not the proposition Rashīd ad-Dīn had in mind. We shall discuss this together with Ibn Ghaylān’s response to Rashīd ad-Dīn’s example.

So far, Ibn Ghaylān’s rebuttal does not seem to amount to much. He concedes that there may be more than one converse for every convertible proposition. He only denies that *reductio* is employed to identify a converse. While this is correct, *reductio* is in some cases still indispensable to show that the original proposition and its converse have the same truth value, and thus to prove that it actually is a converse of the original proposition. You can always construct, by simply modifying a proposition according to the conversion rule, several putative converse propositions. But you need to know that your converse has the same truth value as the original proposition.

Moreover, according to Rashīd ad-Dīn, for there to be a single conclusion in a syllogism where the conclusion is the converse of a premise, only one converse can be allowed. This, Ibn Ghaylān thinks, is mistaken:

The solution to this doubt is that when they find one of the conversions of a proposition to be the essential converse and it is more specific than the others, from its truth the truth of the others follows. They then limit themselves to mentioning that its truth persists in *reductio* or hypothesis, and thus they do not have to mention the others. For if the truth of the others persists by dint of the truth of the mentioned proposition, and the existence of the other mentioned attributes in the delineation of its converse is evident, then it is known that it is a converse for it without the need to go to the lengths of a proof for it.

In this way they also go about the conclusions of syllogisms, regardless of whether they are self-evident or proved correct by conversion, or in yet another way. Hence, they confine themselves to mentioning a single conclusion for a syllogism from which follow more than one proposition if from the truth of the mentioned proposition the truth of the others follows. Likewise, when a universal or particular conclusion is correct, they judge that the universal conclusion is apodictic, based on the knowledge that if the judgment is true of all things, it will also be true of some of them. The same goes for a correct conclusion that is a specific absolute or a necessity proposition. They confine themselves to mentioning them,

49 Kātibī, *ash-Shamsiyya fī l-qawā'id al-mantiqiyya*, 214.9–12; Street, *Najm al-Dīn al-Kātibī's al-Risālah al-Shamsiyyah*, §52.4.

no matter whether the general absolute or the general possible is correct. It is well-known that if the specific proposition is correct, then so is the general. For if “Every A is B by absolute necessity,” or “... as long as it is A” [is true], then “Every A is B by general absoluteness” or “by general possibility” is also true.

It is in the same sense that *reductio* extends to the general absolute and the general possible, on account of its extension from the general conventional. For when the truth of the former two is implied by the truth of the latter, there follows an absurdity from assuming their falsity, just as it does from assuming the falsity of the latter. So it has been shown that *reductio* in all scenarios establishes a true proposition and leads to the truth. For the truth is that, if the general conventional is true, each of the general absolute and the general possible are true.

There is no need to go to great lengths to rehabilitate the reliance on the conclusions reached by syllogisms that are reduced to the first figure by conversion, given what has just emerged. And it has been established that *reductio* establishes the *truth of* the specific converse—which is used in establishing the productivity of a syllogism—and not *that it is* a converse. Nor is there need to stop relying on it because the fact that *reductio* applies to the two general proposition as being conversions does not preclude that it applies to the specific proposition as being a converse, since it actually does apply to it. For the deficiency of a syllogism may be due either to the faultiness of its form or to the falsity of its premises, or both. But the mentioned form of *reductio* is evidently correct, as is shown in logic, and its premises are true as is established afterwards. If a converse of some proposition is established, and by means of it a conclusion is reached in the correct way, then it must be relied upon.⁵⁰

The picture Ibn Ghaylān defends here is to my lights very close to the objection anticipated by Rashīd ad-Dīn. There may be more than one correct conversion, but there is only one “true” converse, namely the strongest. Just as any other proposition, if it is true it implies by itself the truth of all modally weaker versions of that proposition. And just like there may be several correct converse propositions one of which must be the strongest, there may be several conclusions to a syllogism one of which will be the strongest. Because of their greater deductive and explanatory power, logicians have limited themselves to discussing only the strongest of these propositions.

50 Dadkhah and Fallahi, *Manṭiq dar Īrān-i sadah-i shishum*, 90.6–91.16.

This sounds intuitively right, as long as there is a definite procedure to identify the strongest converse. But, as Ibn Ghaylān himself argues, *reductio* is not even supposed to do that. One could of course simply propose a mechanical procedure and run *reductio* proofs on each of the finite modal types one accepts. But, such modal types can simply be stipulated. In fact, Rashīd ad-Dīn's final example does not seem to be one of the commonly accepted types. Unless there is such a definite procedure, there are at least two problems. The first is that there would be no way of identifying the "true" converse, as Rashīd ad-Dīn had argued. The second is that if you can prove by *reductio* that certain conversions stronger than the commonly accepted "true" converse have the same truth value as the original proposition, and you assume that modal types can be stipulated, none of the syllogisms that are reduced to the first figure by conversion would be valid.

However, in Ibn Ghaylān's opinion, this much should have sufficed to ward off Rashīd ad-Dīn's attack against logic:

What we set before us has now been resolved in its entirety, and the plain facts have become clearly visible in the light of truth. It has been shown that the form of the *reductio* syllogism is the form of a demonstration. This admits of no doubt and no suspicion works against it. If the premises of which it is made up are true, the plain truth is established by means of it and genuine certainty is achieved. We should here end this treatise and close that chapter. For there is no need, given the aim of this treatise, to turn to the remaining sections: the question they contain is not precise enough to have a bearing on the doubt presented, nor are the replies to it suitable for addressing it. But I pursued these sections anyhow, in accordance with the structure of the examples presented in them, and I exposed the ways in which they are mistaken and deficient.⁵¹

If it is correct that Ibn Ghaylān's arguments do not succeed in the first section, because he is mainly restating the anticipated objection of the second section, the success of his rebuttal depends on whether he can show that Rashīd ad-Dīn's last example is invalid.

4.2 *Ibn Ghaylān's Reply to al-Waṭwāṭ's Last Proof*

Al-Waṭwāṭ's last example purportedly showed that *reductio* can be used to prove that a correct converse C4 is true whenever P1 is, even though C4 is stronger than C1. This is Ibn Ghaylān's response:

⁵¹ Dadkhah and Fallahi, *Manṭiq dar Īrān-i sadah-'i shishum*, 92.8–14.

But this is a most astonishing argument. For he, may Allah guard his glory, first proves by *reductio* that “No J is B as long as it is J” is true, relating this from the philosopher [Avicenna] without doubting his conclusion on that, or contesting its form or matter. Then he adduces the other [proposition] and proves the truth, as he claims, of “No J is B at the specific time at which it is J” (not always as long as it is J), without even thinking about the fact that these two propositions cannot be conceived as jointly being true. For between the negation of B of each instance of J, always as long as it is J, and its negation of [J], not always as long as it is J, but at a specific time at which it is J, one must inevitably be false. Establishing a proof for their joint truth is impossible. Hence, one of the two syllogisms is necessarily invalid.⁵²

His point is that C1 and C4 are mutually exclusive. If the *reductio* proof was correct, this would make things worse, because if it can be employed to show that if P1 is true, both C1 and C4 are true, then *reductio* would prove nonsense. This, I think, is what Rashīd ad-Dīn aimed to show. Ibn Ghaylān’s strategy, however, is to say that if C1 and C4 are contradictory either Avicenna’s or Rashīd ad-Dīn’s proof is faulty. It is worth giving his own proof in full:

Let us now look at both accounts and explain them by analysing them. We say: it does not escape [al-Waṭwāt], may Allah prolong his elevation, that the *reductio* syllogism is a composite of two syllogisms: one connective, the other reiterative. For the connective syllogism reported from the philosopher [Avicenna] his minor premise is:

If it is not the case that no J is B as long as it is J, then some J is B, either always as long as it is J, or at a specific time at which it is J timelessly.

This [proposition] is true if its consequent [102] implies the contradictory of its antecedent, so that they are not jointly false. If the antecedent is assumed to be false, then the consequent is true, and hence the conditional is true.

The major premise is:

Whenever it is the case that some J is B as long as it is J or at a specific time at which it is J, then some B is J at least once.

This [proposition] is true as well, because the “some” are subjected to J-ness and B-ness together at least once, so B is J at least once, and hence

52 Dadkhah and Fallahi, *Manṭiq dar Īrān-i sadah-‘i shishum*, 101.7–14.

some B is J at the time that it is B. Therefore, the two premises are both true and the form of the syllogism is correct. For it is a connective syllogism with two conditional premises in the first figure in which the conclusion is self-evident. So it does imply the conclusion which is

If it is not the case that no J is B as long as it is J, then some B is J at the time at which it is B is true.

Now this becomes a premise in the reiterative syllogism and the contradictory of its consequent is repeated:

[If it is not the case that no J is B as long as it is J, then some B is J at the time at which it is B is true.]

But it is not the case that no B is J as long as it is B.

If this is assumed to be true, then it implies the contradictory of the antecedent, which is

No J is B as long as it is J is true,
and this was to be proved.

Hence, it is clear that the syllogism reported from the philosopher [Avicenna] is valid, and its conclusion is true. And that its contradictory, namely

No J is B at the specific time at which it is J, not always as long as it is J is necessarily false.

Now I say that in the syllogism used [by al-Waṭwāt] the minor premise of the connective syllogism is false, namely:

If it is not the case that no J is B at the specific time at which it is J, not always as long as it is J, then some J is B at this specific time.

This is because the consequent is not the contradictory of the antecedent and they can actually jointly be false, even though they cannot jointly be true. For if “it is not the case that no J is B as long as it is J” is true, then “no J is B at the specific time at which it is J, not always as long as it is J” is false, and so is “some J is B at that specific time.” And they may [103] likewise be jointly false when the truth is assumed in another way, about which we have now sufficiently talked.

As for the assignment of the contradictory, according to the books [on logic], it is not correct. It is nowhere found in the books that are currently circulating in reliable hands. And how could it be in there when it is obviously nonsense?⁵³

53 Dadkhah and Fallahi, *Manṭiq dar Īrān-i sadah-ʿi shishum*, 101.15–103.3.

The salient points of criticism here are that the contradictory assumed for *reductio* is in fact not the contradictory of the converse and that the minor premise of the connective syllogism is false. This is however not immediately evident. Fallahi and Dadkhah make the following poignant observation.⁵⁴ It is not clear whether al-Waṭwāṭ intends the converse to be:

C4'': No J is B at a specific time when it is J

or:

C4''': No J is B at a specific time at which it is J but not as long as it is J.

The latter appears to contradict C₁ "No J is B as long as it is J." But, as Fallahi and Dadkhah point out and Ibn Ghaylān's proof confirms, if he intended the converse to be C4'', then the *reductio* proof is invalid because the conditional in the minor premise of the first syllogism is true if the consequent implies the contradictory of its antecedent. But this is not the case. If, however, he intended C4''', then this is in fact weaker than C₁ and the argument is flawed.

5 Shihāb ad-Dīn as-Suhrawardī on al-Waṭwāṭ's Doubts on *reductio*

Shihāb ad-Dīn as-Suhrawardī is a much better-known figure than Ibn Ghaylān. Born in 1154 in northern Persia and executed in 1191 by the Ayyūbid sultan Salāḥ ad-Dīn in Aleppo, he was a younger contemporary of both al-Waṭwāṭ and Ibn Ghaylān. Having studied philosophy and theology with Majd ad-Dīn al-Jīlī in Marāgha, he was later introduced to as-Sāwī's *al-Basā'ir an-Naṣiriyya fī 'ilm al-mantiq* by the logician Zāhir al-Fārisī.⁵⁵ Known primarily as the founder of the emphatically non-Aristotelian "Philosophy of Illumination" (*Ḥikmat al-ishrāq*), Suhrawardī's logical system was, as Tony Street has shown, nonetheless "deeply Avicennan."⁵⁶

54 Dadkhah and Fallahi, *Mantiq dar Īrān-i sadah-i shishum*, 102.

55 See Shihāb ad-Dīn Yahyā b. Ḥabash as-Suhrawardī, *Oeuvres philosophiques et mystiques. Opera metaphysica et mystica II*, ed. by Henri Corbin (Tehran: Institut franco-iranien, 1954), 146, 278, 352. For a text of the *Basā'ir*, see Zayn ad-Dīn 'Umar b. Sahlān as-Sāwī, *al-Basā'ir al-Naṣiriyya fī 'ilm al-mantiq ma' ta'liqāt wa-shurūḥ li-l-Imām Muḥammad 'Abduh*, ed. by Rafiq 'Ajam (Beirut: Dār al-Fikr al-Lubnānī, 1993).

56 Tony Street, "Suhrawardī on Modal Syllogisms," in *Islamic Thought in the Middle Ages: Studies in Text, Transmission and Translation, in Honour of Hans Daiber*, ed. by W. Raven and A. Akasoy (Leiden: Brill, 2008), 163.

At the end of the logic part of *Ḥikmat al-ishrāq*, Suhrawardī adds a chapter on logical problems and solutions. There he discusses al-Waṭwāt's attack—without mentioning names—under the title (*qā'ida*) “On the destruction of the Peripatetic foundation of conversion”:⁵⁷

Know that the Peripatetics establish conversion by means of both *reductio* and ecthesis, and *reductio* itself in fact requires the use of ecthesis as well. So we say: If no J is B by necessity, then no B is J likewise [by necessity]. Otherwise, it would be true that some B is J. Now we stipulate a specific thing [by ecthesis] and call it D. D is both B and J, so the thing that is described by J is also described by B. But it was said that no J is B by necessity.

Moreover, for affirmative propositions, both universal and particular, they sometimes establish their converse proposition by ecthesis, or sometimes by *reductio*. *Reductio*, in turn, may sometimes require ecthesis. In the case of the negative converse, *reductio* inevitably requires ecthesis, as we mentioned. Ecthesis itself is a third figure [syllogism] [...]. But then, they establish the third figure by reducing it to the first by conversion. This proof is however circular. For it requires that something is proved by the very thing that was to be proved.⁵⁸

While it is noteworthy that as-Suhrawardī refers to this argument as the “destruction” (*hadm*) of the Peripatetic (*al-māshshā'in*) account of conversion, the problem laid out here is different from Rashīd ad-Dīn's. As-Suhrawardī claims that since many conversions require *reductio*, which in turn often requires third figure ecthesis syllogisms, the proof for the productivity of third figure syllogisms is circular. But then he continues:

[I know], moreover, that *reductio* is not sufficient to prove that this [proposition] is the converse and not another. Someone claimed the following: if “Necessarily, no J is B” [is true], then this converts to “Necessarily, it is not the case that some B is J.” Otherwise, “Every B is J.” Now we stipulate by ecthesis that there is a B described by J and call it D, as you have learned. Now it follows that “Some J is B,” but we had said that no J is B. This is absurd. The truth of the converse proved in this way does not indicate that it is a converse. *Reductio* alone is not sufficient, but it is possible to prove

57 Suhrawardī, *Oeuvres philosophiques et mystiques. Opera metaphysica et mystica* 11, 58.9.

58 *Oeuvres philosophiques et mystiques. Opera metaphysica et mystica* 11, 58.9–59.7.

the correctness of the converse without it as we have shown, so there is no harm in it. And likewise, our proof for the two figures has no need for either conversion or *reductio*.⁵⁹

This clearly is a reference to the problem raised by al-Waṭwāt, except that the converse up for proof is here a necessity o-proposition. Interestingly, as-Suhrawardī thinks that Rashīd ad-Dīn is right, not only in denying that *reductio* cannot be used to identify a converse (as Ibn Ghaylān had concurred), but also in claiming that it is, in principle, a serious problem for Avicennan syllogistic (which Ibn Ghaylān denied). Or, rather, that it would be a serious problem, were it not for other possible routes to establish the converse of a proposition and to prove the productivity of second and third figure syllogisms. As-Suhrawardī does not here spell out what these other routes are. Instead, he points out a different way in which *reductio* is problematic. A *reductio* proof can be recast as a compound syllogism consisting of a hypothetical connective and a reiterative syllogism that produces a hypothetical conclusion, as Ibn Ghaylān had done:

Let no one [60] put forward the claim and say that the *reductio* leading to the converse is not a syllogism. For whoever knows what a syllogism is, and what a *reductio*, knows that it is a syllogism, except that the *reductio* of the converse requires a reiterative syllogism in addition to a hypothetical connective syllogism. Our intended conclusion in this syllogism is hypothetical as well. So we say:

Whenever no J is B, then no B is J.

From this form we say:

If it is true that no J is B and it is not true that no B is J, then it is true that some B is J.

The first sentence is the antecedent, and the consequent is “then it is true that some B is J”. Now we take this and make it the antecedent in another premise, and we say:

Whenever it is true that some B is J, then it is true that J is B.

This we now connect to the first premise. Now this produces the conclusion from

If it is true that no J is B and it is true that no B is J, then it is true that some J is B.

But it is true that some J is B.

59 *Oeuvres philosophiques et mystiques. Opera metaphysica et mystica* 11, 59.15–60.6.

This syllogism is a connective one made up from two conditionals, but we omitted the middle term. So after this we repeat the contradictory of the consequent as you have learned. The second premise [61]—if it is composed of two particular categoricals—is universal, because the generality of the hypotheticals ranges not over numbers [of individuals] but over situations and times. Since this is so, the *reductio* for conversion we mentioned is not of a perfect form. Syllogisms are thus deemed arguments based on imperfect arguments needed [to establish that they are arguments in the first place]. But the right thing to say is this: the correctness of the [syllogistic] figures really only needs to be established as a reminder and notification for the mind. A set of few rules is better than many rules in need of arduous work and many exceptions.⁶⁰

The upshot of this, however, is the unwelcome consequence that conversion rests on imperfect syllogisms whose proofs in turn require conversion. But as-Suhrawardī seems prepared to accept that the Peripatetic deductive system, even though the productivity conditions established from within it are correct, rests—formally speaking—on shaky foundations.

6 Fakhr ad-Dīn ar-Rāzī on al-Waṭwāt's Doubts on *reductio*

Fakhr ad-Dīn Muḥammad ar-Rāzī was born in 1149 in Rayy—which makes him as-Suhrawardī's senior by five years—and died in Herat in 1210.⁶¹ Incidentally, he studied like as-Suhrawardī with Majd ad-Dīn al-Jīlī at Marāgha. Later in his life around 1186, he debated with Ibn Ghaylān in Bukhāra; in his *Munāẓarāt* (Debates) he describes al-Balkhī as “a Shaykh who is famous in *falsafa* and skillfulness.”⁶² Fakhr ad-Dīn, especially with his later work, ushered in a new

60 *Oeuvres philosophiques et mystiques. Opera metaphysica et mystica* 11, 60.7–61.6.

61 On Fakhr ad-Dīn's life, intellectual influences and patronage, see: Frank Griffel, “On Fakhr al-Dīn al-Rāzī's Life and the Patronage He Received,” *Journal of Islamic Studies* 18, no. 3 (2007): 313–344; Ayman Shihadeh, “Rāzī, Fakhr al-Dīn al-,” in *The Oxford Encyclopedia of Philosophy, Science, and Technology in Islam*, ed. by Ibrahim Kalin (Oxford: Oxford University Press, 2014); “Al-Rāzī's (d. 1210) Commentary on Avicenna's Pointers: The Confluence of Exegesis and Aporetics,” in *The Oxford Handbook of Islamic Philosophy*, ed. by Khaled El-Rouayheb and Sabine Schmidtke (New York: Oxford University Press, 2016), 296–325.

62 *Munāẓarāt Fakhr ad-Dīn ar-Rāzī fī bilād mā warā'a an-nahr*, in: Kholeif, *A study on Fakhr al-Dīn al-Rāzī and His Controversies in Transoxiana*, 31 (55 of Kholeif's translation). See also Shihadeh, “From al-Ghazālī to al-Rāzī: 6th/12th Century Developments in Muslim Philosophical Theology,” 153.

phase of Ash'arism, and, in fact, of Arabic logic, that retrospectively earned him and his epigones the epithet "*al-muta'akhhirūn*."⁶³ Characteristic of this new Rāzīan approach to philosophical material was the attempt to steer a constructive middle path between the polemics of the career critics and the dogmatism of the school Avicennists.⁶⁴

In his commentary on Avicenna's *Ishārāt*, which aims precisely at this middle path and was completed around 1185, Fakhr ad-Dīn makes it clear that he does not think al-Waṭwāṭ's arguments have any force. He says: "one of them mentioned a weak doubt about this [*reductio*] syllogism. If it were not for the fact that many scholars of our age believed it to be strong, we would not mention it."⁶⁵ One of those who believed it to be strong would have been as-Suhrawardī. Unlike as-Suhrawardī, however, Fakhr ad-Dīn is not prepared to accept that logic formally rests on shaky foundations. Nor does he seem to be content with Ibn Ghaylān's solutions. While he likely knew them, he neither mentions Ibn Ghaylān nor refers to his responses.

From his presentation of the doubt it is clear that he understood the argument in the same way we have presented it. Of the four arguments in the second part, he gives weight only to the last. According to ar-Rāzī, the claim is that *reductio* is unreliable, because it can be used to establish several converse propositions of which only one can be true. You cannot object that it only produces one true converse, namely the strongest that includes the others, because the last example shows that *reductio* may also establish a converse

63 So for example by Ibn Khaldūn, who calls him the first of the "later logicians" (the second being Afḡal ad-Dīn al-Khūnājī (d. 1248)), see: Abū Zayd 'Abd ar-Raḥmān Ibn Khaldūn, *Muqaddimat Ibn Khaldūn* (Beirut: al-Maṭba'a al-adabiyya, 1900), 491–492.; translation by Rosenthal in: *The Muqaddima: An introduction to History*, trans. by Franz Rosenthal (New York: Pantheon Books, 1958), 142–143. See also Tony Street, "Logic," in *The Cambridge Companion to Arabic philosophy*, ed. by Richard Taylor and Peter Adamson (Cambridge and New York: Cambridge University Press, 2005), 251–252. Compare Sa'd ad-Dīn at-Taftāzānī, *Sharḥ ash-Shamsiyya* (Jordan: Dār an-Nūr, 2011), 92.

64 On Rāzī's intellectual/dialectical environment and his own project, see: Shihadeh, "From al-Ghazālī to al-Rāzī: 6th/12th Century Developments in Muslim Philosophical Theology"; "Avicenna's Corporeal Form and Proof of Prime Matter in Twelfth-Century Critical Philosophy: Abū l-Barakāt, al-Mas'ūdī and al-Rāzī," *Oriens* 42, no. 3–4 (2014): 364–396; "Fakhr al-Dīn al-Rāzī's Response to Sharaf al-Dīn al-Mas'ūdī's Critical Commentary on Avicenna's *Ishārāt*," *The Muslim World* 104 (2014): 1–61; *Doubts on Avicenna: a study and edition of Sharaf al-Dīn al-Mas'ūdī's Commentary on the Ishārāt*, Islamic Philosophy, Theology and Science (Leiden; Boston: Brill, 2016).

65 Fakhr ad-Dīn Muḥammad b. 'Umar ar-Rāzī, *Sharḥ al-Ishārāt wa l-tanbīhāt*, ed. by 'Alī Riḍā Najafzādah, *Commentay [sic] on Avicenna's al-Isharat wa l-tanbihat* (Tehran: Anjuman-i athār va mafākhir-i farhangī, 2005), 339.4–5.

stronger than the one that is generally agreed to be the true converse. Fakhr ad-Dīn's response begins by clarifying some preliminaries:

The answer is that *reductio* is an expression of seeking to prove the impossibility of a contradictory by the impossibility of what it implies, and by its own impossibility the truth of the original proposition. This is something against which no criticism can be directed. But it is necessary to present some preliminaries to resolve this doubt, and these are that everything that produces a conclusion is such that it necessarily leads to anything that is weaker [than the conclusion], while it is merely possible that it leads to something that is stronger than it. And, with regard to anything that is opposed to it, it leads to everything that is opposed to that. Now, it is well known that the conventional proposition is stronger than the general absolute and the general possible propositions, so *reductio* leads to them both. And if the first mood of the first figure leads to "black is a color," then it necessarily also leads to "black is in the category of quality."

In general: if what leads to the stronger is denied of the weaker, and what is denied of the weaker is denied of the stronger, then what necessitates the stronger is also denied of it. This is absurd.⁶⁶

As a first preliminary, Rāzī clarifies that any valid deduction leads to a conclusion that necessarily entails all (modally) weaker versions of itself. At the end of the paragraph, he presents a general rule, ironically in the form of a *reductio*, that may be taken as shorthand for his solution to the doubt. Suppose the assumption underlying al-Waṭwāṭ's argument, namely that *reductio* may establish a certain converse but not a weaker one, were true. But it was argued that any converse that is stronger than a converse that cannot be established by *reductio* likewise cannot be established by *reductio*. Both assumptions together imply the absurd consequence that *reductio* establishes a stronger converse and at the same time invalidates it. Thus, if it is true that any deduction leads to a conclusion that entails all modally weaker versions of itself, then the assumption underlying al-Waṭwāṭ's argument must be false.

As a second preliminary, ar-Rāzī addresses the question of how the multiplicity of conclusions is to be squared with the requirement for syllogisms with a determinate form and matter to produce a single conclusion:

66 Rāzī, *Sharḥ al-Ishārāt wa l-tanbīhāt*, 340.1–9.

The answer is that the *reductio* syllogism has a single form, and when it is used with a single matter, it produces no more than a single conclusion. When you seek to prove the impossibility of the contradictory of a conventional proposition by the impossibility of what it implies, and by the impossibility of the contradictory the truth of the original proposition, all that follows from employing *reductio* here is the truth of the conventional premise. Now, if you use the form of the *reductio* with the matter of possibility and seek to prove its truth by the impossibility of its contradictory, then the truth of the possibility proposition follows from it. Hence, the form of a *reductio* syllogism in a single matter produces no more than one conclusion. [341] As for the different matters, it produces different conclusions. But when it produces the strong conclusion, it must also lead to the weaker ones, as we have shown. Likewise, if you take a regular syllogism, for example *Barbara*, that concludes in “Man is a writer,” then inevitably it also leads to the [proposition] that he is moving at will, even if not from this first syllogism, but by means of another syllogism in that figure. As for that which concludes in a weaker proposition, it is possible that it leads to a stronger one or that it does not. When we know from a regular or a *reductio* syllogism that something exists and its existence becomes known, then there remains doubt as to the attributes that are more specific than this, like its necessity or possibility. So, inevitably, we need another syllogism to show that it is possible or necessary. After that, there still remains doubt as to whether [this thing] is a substance or an accident, so another syllogism is needed to make us know that it is a substance, and so forth until specific knowledge of its attributes is attained.⁶⁷

In short, the modal type of the converse that is established by *reductio* is determined by the modality assumed for *reductio*. In this way, every determinate *reductio* leads to exactly one converse, just as every determinate syllogism produces exactly one conclusion.

This account already improves on the one given by Ibn Ghaylān. But it is still possible that for any given correct proof of a converse, there will be a modally stronger proof. Rāzī explains that, just as we gradually refine knowledge of a thing by repeatedly applying new syllogisms to establish ever more specific attributes of it, so we go about *reductio*:

67 Rāzī, *Sharḥ al-Ishārāt wa l-tanbīhāt*, 340.13–341.9.

The upshot is that when we disprove the contradictory of a general attribute, then the subsistence of this general attribute becomes known, but doubts remain about the subsistence of [more] specific attributes. So we need to use *reductio* another time to establish a more specific attribute, and then again for yet another more specific attribute, until things come to a head. There is no difference in the procedure between regular syllogisms and *reductio* syllogisms. This holds for attributes that are more general or more specific than the conclusion. As for what is opposed to the conclusion, the syllogism that produces something must be opposed to what the conclusion is opposed to. So what is necessitated by that thing is denied of what is denied of the thing.⁶⁸

The procedure suggested here for establishing the strongest and “true” converse of a proposition is the same procedure applied in all syllogistic reasoning. As such, it is in principle open-ended. Although he does not say so, the assumption must be that there is no harm in the fact that there may be as many converse propositions as there are stipulated modal types, because the criterion may simply be the utility of whichever modal type can be established for a converse. This much, then, takes care of the first part of Rashīd ad-Dīn’s doubt:

Now that you know these preliminaries, we say: When *reductio* leads to the fact that the converse of a conventional proposition is a conventional, too, [342] then it necessarily leads to the fact that its converse is an absolute or a possibility proposition, because these are weaker than the [conventional].⁶⁹

But the decisive argument comes when Fakhr ad-Dīn discusses al-Waṭwāṭ’s last example. As already indicated, it is not clear from Rashīd ad-Dīn’s formulation whether the stronger converse he purports to establish by *reductio* is

C4’’: No J is B at a specific time when it is J

or:

C4’’’: No J is B at a specific time at which it is J but not as long as it is J.

68 Rāzī, *Sharḥ al-Ishārāt wa l-tanbīhāt*, 341.10–15.

69 Rāzī, *Sharḥ al-Ishārāt wa l-tanbīhāt*, 341.16–342.1.

If he intended it to be C4", then this is in fact weaker than the conventional. So it remains to disprove that C4" can be established by *reductio*. Fakhr ad-Dīn refutes the argument for both the existential (*wujūdiyya*) and the spread (*munṭashira*) converse, which like C4" are both composite modalities stronger than the general conventional. The crucial point in both refutations is that in order to prove the truth of a proposition by *reductio*, one must *disprove all parts of its contradictory*:

As for [the argument that] if we take the converse of a conventional proposition as converting to an existential proposition, then it is stronger than the conventional. But we just showed that what concludes in a weaker [conclusion] does not preclude that it can conclude also in a stronger one. However, must there not be a procedure to check whether it can be proved correct by *reductio*? It is well known that proving it correct is only possible when all parts of its contradictory are disproved. For example, to say: the converse of the negative conventional proposition is the converted negative existential proposition. Otherwise, its contradictory is true. This implies the perpetuity of either the affirmation or negation at some points in time of the attribute with regard to the subject. The falsity of all parts together is evident. For it is possible to disprove the perpetual affirmative, yet impossible to disprove the perpetual negative. As this is not possible, surely it is not necessary that this converse is a negative existential.⁷⁰

As the existential proposition is composite (e.g., "No J is always B, and every J is at least once B"), one needs to disprove both parts of its contradictory. But the perpetual negative cannot be disproved. Therefore, *reductio* cannot establish that the negated existential proposition is a converse of P1. Moreover:

When we take the converse of a negative conventional proposition to be a negative spread proposition, which means that its predicate is denied of the subject at some points in time when it describes the subject, but not at all points in time, then this contradicts the conventional proposition that we have proved by *reductio*. When the demonstration by *reductio* works to prove the conventional, it is impossible that it also works to prove this spread proposition. For this spread proposition can only be proved by *reductio* if we can establish the falsity of the parts of its contradictory,

70 Rāzī, *Sharḥ al-Ishārāt wa l-tanbīhāt*, 342.1–8.

which are either the perpetuity of the negation of the predicate as long as it describes the subject, or the perpetual affirmation in the same way. But it is impossible for us to disprove the first part, and since it is unfeasible to disprove all parts of its contradictory, it is impossible to prove by *reductio*.⁷¹

The spread e-proposition (e.g., “No J is possibly B at time t, and every J is at least once B”) is probably closest to C4” and like Ibn Ghaylān, ar-Rāzī points out that it contradicts C1. It cannot be established by *reductio* that it has the same truth conditions as P1, because only one part of its contradictory can be disproved. Once it is appreciated that all parts of a composite modal proposition’s contradictory must be disproved in *reductio*, the doubt is resolved:

All in all, the one who raised the doubt suppressed some parts of the contradictory and neglected others, and then he thought that he had disproved the contradictory. Surely, he thought that *reductio* would work then; but if he discovered what we just said, he would have been ashamed for bringing up this doubt. Without this doubt, even if it is very weak indeed, we would not have brought up these investigations that are worth pausing over to understand how *reductio* is used.⁷²

This devastating verdict appears to have been the final word on the issue. While later scholars like Quṭb ad-Dīn ash-Shīrāzī mention it, no one seems to argue against the suitability of *reductio* for conversion.⁷³

7 Conclusion

The courtier Rashīd ad-Dīn redacted, sometime around the later mid-12th century, a short treatise which aimed to prove that Avicennan logic was inconsistent by showing that *reductio* was not admissible as a proof strategy for conversion. The issue had likely been brought up earlier by the philosopher-physician and third-generation follower of Avicenna, Sharaf az-Zamān al-Īlāqī.

71 Rāzī, *Sharḥ al-Ishārāt wa l-tanbihāt*, 342.8–14.

72 Rāzī, *Sharḥ al-Ishārāt wa l-tanbihāt*, 342.15–343.3.

73 See Maḥmūd b. Mas‘ūd Quṭb ad-Dīn ash-Shīrāzī, *Sharḥ-i Ḥikmat al-ishrāq-i Suhrawardī*, ed. by ‘Abd Allāh Nūrānī and Mahdī Muḥaqqiq (Tehran: Mu‘assasah-i Muṭāla‘āt-i Islāmī, Dānishgāh-i Tihārān, 1379/2001), 168.

It appears that a certain Shihāb ad-Dīn had a stake in the debate, and that al-Waṭwāṭ personally discussed the issue with Ibn Ghaylān “in the presence of some common people” (*‘awāmm*).⁷⁴ Rashīd ad-Dīn’s argument was simple: *reductio* can be used to prove several conversions for a single proposition. Since every proposition has at most one “true” converse, *reductio* can be used to prove false conversions. Hence, it is not reliable and not fit for purpose. But without *reductio*, a number of conversions cannot be proved, and without those conversions, none of the non-universal syllogistic moods can be proved. Against the obvious objection that this is only so because the *reductio* proof “extends” to all conversions that are implied by the “true” converse, Rashīd ad-Dīn provides a *reductio* proof that establishes a converse that is not implied by the “true” converse.

Even though the fallacy of Rashīd ad-Dīn’s argument can be exposed, until ar-Rāzī’s definite rebuttal “many scholars of [his] age believed it to be strong.”⁷⁵ Ibn Ghaylān at least thought it deserved serious consideration. His response is over twice as long as Rashīd ad-Dīn’s treatise, and sometimes pedantic. It does however not succeed, as I have tried to show, in decisively dismantling Rashīd ad-Dīn’s argument. Ibn Ghaylān grants two of al-Waṭwāṭ’s main theses: first, that *reductio* cannot be used to identify the “true” converse of a proposition and, second, that propositions may in fact have more than one converse. Both theses were subsequently accepted in the tradition. Ibn Ghaylān’s counterargument, then, was to say that both theses are trivial, because every convertible proposition has one “true” converse, namely the strongest, and *reductio* is used not to identify it, but merely to show that it has the same truth conditions as the original. But this position is no different from that of Rashīd ad-Dīn’s imagined objector. Ibn Ghaylān neither proposes a procedure to find the “true” converse, nor does he offer a systematic argument that shows that *reductio* in principle can never prove a converse stronger than the “true” one. His criticism of Rashīd ad-Dīn’s last example is no doubt justified. But rejecting one proof does not preclude that there may be others that are formally correct.

As-Suhrawardī was aware of the arguments advanced by Rashīd ad-Dīn and Ibn Ghaylān. From his comments on “The destruction of the Peripatetic foundation of conversion” at the end of the logic part of *Ḥikmat al-ishrāq* it emerges that he accepted the idea that *reductio* cannot be employed to identify the correct converse.⁷⁶ While he claims that he does not need *reductio* to prove

74 Dānīshpazhūh, “Gūsha’i az ta’rīkh-i manṭiq dar Īrān,” 293. Cf. Shihadeh, “A Post-Ghazālīan Critic of Avicenna,” 142.

75 Rāzī, *Sharḥ al-Ishārāt wa l-tanbīhāt*, 339.4–5.

76 Suhrawardī, *Oeuvres philosophiques et mystiques. Opera metaphysica et mystica* II, 58.9.

conversion or reduce the second and third syllogistic figures, he points out that there is another problem. The compound *reductio* syllogism itself is not of a perfect form, so the syllogisms whose productivity is proved by means of *reductio* syllogisms rest, formally, on shaky foundations. Suhrawardī bites the bullet here: while this might be the case, there still is no doubt that the syllogistic forms so proved are valid.

Fakhr ad-Dīn ar-Rāzī considered al-Waṭwāṭ's argument very weak. It is still remarkable that he, too, accepts Rashīd ad-Dīn's two main theses. It is correct that *reductio* can be employed to prove that C_1 – 3 are true if P_1 is true, but this is only so because any deduction implies everything that its conclusion implies. It is also correct that *reductio* cannot identify a converse, but just as determinately modalized syllogisms do, *reductio* only ever establishes the truth of a single converse, namely the converse of just that modality in which *reductio* is run. Based on the general principle that the implicate of the weaker is the implicate of the stronger, whereas the implicate of the stronger is not the implicate of the weaker, ar-Rāzī is able to organize modal types according to their relative implicatory strength.⁷⁷ The decision procedure for finding the strongest converse may still be mechanical, but it is dramatically simplified. By showing that *reductio* fails for a given converse, one has immediately disproved all modally stronger versions of that converse. Al-Waṭwāṭ's purported proof for a converse stronger than C_1 fails because he did not realize that all parts of the contradictory assumed for *reductio* have to be disproved. In fact, none of the stronger converse propositions can be proved by *reductio*, for the same reason. Ibn Ghaylān had failed to give a principled account of why *reductio* cannot prove conversions stronger than the "true" one; nor had he given any tools for a decision procedure to find the "true" converse. Ar-Rāzī supplied both, and with that the case seems to have been closed.

Nevertheless, we may appreciate al-Waṭwāṭ's treatise as being a sophisticated attack against the very foundations of Avicennan logic—and thereby the entire Avicennan theory of science—written not by a logician, but by a court official and litterateur. Logic had of course been a contested area of scholarship from the moment of its introduction by the first translations of Aristotle's *Organon*. What the present controversy shows, is that in contrast to earlier wholesale attacks on logic, as for example that by Abū Saʿīd as-Sirāfī (d. 979)

77 For the principle of implicatory strength, which after Rāzī became the organizing principle for dealing with the conversion of the different modal types, see Street, "Afdal al-Dīn al-Khūnājī (d. 1248) on the Conversion of Modal Propositions," 486; 505. Rāzī's list of implicational relations is in Fakhr ad-Dīn Muḥammad b. 'Umar ar-Rāzī, *Mantiq al-mulakhkhaṣ* (Tehran: Dānishgāh-i Imām Šādiq, 1381/2002–2003), 197.

in the debate against Abū Bishr Mattā b. Yūnus (d. 940), here the attack is formulated from within the logical system and from a standpoint of expertise.⁷⁸ That al-Waṭwāṭ's arguments were perceived as robust at least by some is shown by the responses it generated. It is moreover remarkable that a "career critic" of Avicenna, Ibn Ghaylān, should go to such lengths to save the consistency of the Avicennan deductive system. While it is fairly obvious, in retrospect, that Rashīd ad-Dīn's arguments were flawed, we should consider an important point that helps explain why this might not have been so obvious for him and his direct contemporaries. This point has to do with what Street has called the "profusion of modal types." Not only had the logical system become markedly more complex with Avicenna's new modalities. There was no standardized understanding of what the different modal types were, what their precise truth-conditions, and what their contradictories. Figuring out how each of them would convert was an ongoing process to which logicians contributed across generations. It is no coincidence that ar-Rāzī was able to provide the decisive rebuttal to al-Waṭwāṭ's doubt. Fakhr ad-Dīn himself instituted a number of innovations that helped to standardize modal syllogistic. The ordering of propositional types according to the implicatory strength of their modalities may well have been a reaction to the issues raised by al-Waṭwāṭ. It is perhaps ironic that ar-Rāzī, following his distinction between essential (*ḥaqīqī*) and external (*khārijī*) readings of the subject term, disputed that at least on an essential reading the perpetuity e-proposition, and hence the weaker general conventional, do not convert as themselves.⁷⁹

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78 Abū Sa'īd there rejects Greek logic in its entirety as unsuitable for Arabic-speakers on grounds of arguments reminiscent of linguistic relativism. Although he studied logic, he does not employ it to refute his opponent. The debate is recorded in 'Alī b. Muḥammad Abū Ḥayyān at-Tawḥīdī, *Kitāb al-Imtā' wa l-mu'ānasa* (Cairo: Lajnat at-ta'līf wa t-tarjama wa n-nashr, 1939–1944), 107–129. It was first translated and discussed in David Margoliouth, "The Discussion between Abu Bishr Matta and Abu Sa'id al-Sirafi on the Merits of Logic and Grammar," *Journal of the Royal Asiatic Society of Great Britain and Ireland* (1905): 79–129.

79 Al-Khūnājī rejected ar-Rāzī's arguments (and so did most in the later tradition); for a presentation and criticism of ar-Rāzī's arguments see Khūnājī, *Kashf al-asrār 'an ghawāmiḍ al-afkār*, 470–472.

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Bibliography

- Al-Rahim, Ahmed H. *The Creation of Philosophical Tradition: Biography and the Reception of Avicenna's Philosophy From the Eleventh To the Fourteenth Century A.D.* Wiesbaden: Harrassowitz, 2018.
- Chalisova, Natalia. “Waṭwāt, Rašīd-al-Dīn.” In *Encyclopædia Iranica* online edition, 2000. <https://iranicaonline.org/articles/watwat-rasid-al-din>.
- Dadkhah, Gholamreza, and Asadollah Fallahi. *Manṭiq dar Īrān-i sadah-i shishum*. Tehran: Mu’assasah-i Pizhūhishī-i Ḥikmat va Falsafah-i Īrān, 1396/2018.
- Dānishpazhūh, Muḥammad Taqī. “Gūša’i az ta’rīḥ-i manṭiq dar Īrān: Radd-i Ghaylānī bar shakk-i Rašīd Waṭwāt dar qiyās-i khulf.” *Nashriyyah-i dānishkadah-i Adabiyyāt-i Tabriz* 13 (1961): 289–310.
- Griffel, Frank. *The Formation of Post-Classical Philosophy in Islam*. New York: Oxford University Press, 2021.
- Griffel, Frank. “On Fakhr al-Dīn al-Rāzī’s Life and the Patronage He Received.” *Journal of Islamic Studies* 18, no. 3 (2007): 313–344.
- Ḥamawī, Yāqūt b. ‘Abd Allāh al-. *Kitāb Irshād al-arīb ilā ma’rifat al-adib: al-ma’rūf bi-mu’jam al-udabā’, aw, Ṭabaqāt al-udabā’*. Ed. by David S. Margoliouth. Leiden: Brill, 1970.
- Heribert, Horst. “Arabische Briefe der Ḥōrazmšāhs an den Kalifenhof aus der Feder des Rašīd ad-Dīn Waṭwāt.” *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 116, no. 1 (1966): 24–43.
- Hodges, Wilfrid. “Ibn Sīnā on *reductio ad absurdum*.” *The Review of Symbolic Logic* 10, no. 3 (2017): 583–601.
- Khūnajī, Muḥammad b. Nāmāwar Afḍal ad-Dīn al-. *Kashf al-asrār ‘an ghawāmiḍ al-afkār*. Ed. by Khaled El-Rouayheb. Tehran: Mu’assasah-i Pizhūhishī-i Ḥikmat va Falsafah-i Īrān and Mu’assasah-i Muṭāla’āt-i Islāmī-i Dānishgāh-i Āzād-i Birlīn, 2010.
- Ibn Ghaylān al-Balkhī, Afḍal ad-Dīn. *Ḥudūth al-‘ālam*. Ed. by Mahdī Muḥaqqiq. Tehran: Mu’assasah-i Muṭāla’āt-i Islām-i, 1377/1998.
- Ibn Khaldūn, Abū Zayd ‘Abd ar-Raḥmān. *The Muqaddima: An Introduction to History*. Transl. by Franz Rosenthal. New York: Pantheon Books, 1958.
- Ibn Khaldūn, Abū Zayd ‘Abd ar-Raḥmān. *Muqaddimat Ibn Khaldūn*. Beirut: al-Maṭba’a al-adabiyya, 1900.
- Ibn Sīnā, Abū ‘Alī al-Ḥusayn. *Kitāb ash-Shifā’, al-Manṭiq, al-Qiyās*. Cairo: al-Hay’a al-‘amma li-shu’ūn al-maṭābi‘ al-amīriyya, 1964.

- Juwaynī, 'Alā' ad-Dīn 'Aṭā Malik al-. *The Ta'rikh-i jahān-gushā of 'Alā' ad-Dīn 'Aṭā Malik al-Juwaynī* (composed in A.H. 658 = A.D. 1260). Ed. by Muḥammad Qazwīnī. Leyden and London: E.J. Brill, Luzac & Co., 1912.
- Karimullah, Kamran. "Unusual Syllogisms: Avicenna and Najm al-Dīn al-Kātibī on *per impossibile* Syllogisms and Implication (*luzūm*).*" Oriens 43, no. 1–2 (2015): 223–271.*
- Kātibī, Najm ad-Dīn 'Alī b. 'Umar al-. *ash-Shamsiyya fī l-qawā'id al-mantiqiyya*. Beirut: al-Markaz ath-thaqāfī al-'arabī, 1998.
- Kholeif, Fathalla. *A Study on Fakhr al-Dīn al-Rāzī and His Controversies in Transoxiana*. Beirut: Dar al-Mashriq, 1966.
- Malink, Marko. "Demonstration by *reductio ad impossibile* in *Posterior Analytics* 1. 26." *Oxford Studies in Ancient Philosophy* 58 (2020): 91–155.
- Margoliouth, David. "The Discussion between Abu Bishr Matta and Abu Sa'id al-Sirafi on the Merits of Logic and Grammar." *Journal of the Royal Asiatic Society of Great Britain and Ireland* (1905): 79–129.
- Rāzī, Fakhr ad-Dīn Muḥammad b. 'Umar ar-. *Manṭiq al-mulakhkhaṣ*. Tehran: Dānish-gāh-i Imām Ṣādiq, 1381/2002–2003.
- Rāzī, Fakhr ad-Dīn Muḥammad b. 'Umar ar-. *Sharḥ al-Ishārāt wa l-tanbihāt*. Commentary [sic] on Avicenna's *al-Isharat wa al-tanbihat*. Ed. by 'Alī Riḍā Najafzādah. Tehran: Anjuman-i āthār va mafākhir-i farhangī, 2005.
- Rypka, Jan. *History of Iranian Literature*. Ed. by Karl Jahn. Dordrecht: D. Reidel, 1968.
- Sāwī, Zayn ad-Dīn 'Umar b. Sahlān as-. *al-Basā'ir al-Naṣiriyya fī 'ilm al-mantiq ma'ta'liqāt wa-shurūḥ li-l-Imām Muḥammad 'Abduh*. Ed. by Rafiq 'Ajam. Beirut: Dār al-Fikr al-Lubnānī, 1993.
- Sāwī, Zayn ad-Dīn 'Umar b. Sahlān as-. *Nahj at-taqdīs wa-as'ila wa-ajwiba: Risālatān fī l-mantiq wa-l-falsafa*. Ed. by Ḥasan al-Marāghī. Tehran: Mu'assasat-i Shams-i Tabrizī, 1385/2006.
- Shihadeh, Ayman. "Al-Rāzī's (d. 1210) Commentary on Avicenna's Pointers: The Confluence of Exegesis and Aporetics." In *The Oxford Handbook of Islamic Philosophy*. Ed. by Khaled El-Rouayheb and Sabine Schmidtke. New York: Oxford University Press, 2016, 296–325.
- Shihadeh, Ayman. "Avicenna's Corporeal Form and Proof of Prime Matter in Twelfth-Century Critical Philosophy: Abū l-Barakāt, al-Mas'ūdī and al-Rāzī." *Oriens* 42, no. 3–4 (2014): 364–396.
- Shihadeh, Ayman. *Doubts on Avicenna: a study and edition of Sharaf al-Dīn al-Mas'ūdī's commentary on the Ishārāt*. Leiden; Boston: Brill, 2016.
- Shihadeh, Ayman. "Fakhr al-Dīn al-Rāzī's Response to Sharaf al-Dīn al-Mas'ūdī's Critical Commentary on Avicenna's *Ishārāt*." *The Muslim World* 104 (2014): 1–61.
- Shihadeh, Ayman. "From al-Ghazālī to al-Rāzī: 6th/12th Century Developments in Muslim Philosophical Theology." *Arabic Sciences and Philosophy* 15, no. 1 (2005): 141–179.

- Shihadeh, Ayman. "A Post-Ghazālīan Critic of Avicenna: Ibn Ghaylān al-Balkhī on the *Materia Medica* of the Canon of Medicine." *Journal of Islamic studies* 24, no. 2 (2013): 135–174.
- Shihadeh, Ayman. "Rāzī, Fakhr al-Dīn al-." In *The Oxford Encyclopedia of Philosophy, Science, and Technology in Islam*. Ed. by Ibrahim Kalin. Oxford: Oxford University Press, 2014.
- Shīrāzī, Maḥmūd b. Masʿūd Quṭb ad-Dīn ash-. *Sharḥ-i Ḥikmat al-ishrāq-i Suhrawardī*. Ed. by ʿAbd Allāh Nūrānī and Mahdī Muḥaqqiq. Tehran: Muʿassasah-i Muṭālaʿāt-i Islāmī, Dānishgāh-i Tihārān, 1379/2001.
- Street, Tony. "Afdal al-Dīn al-Khūnājī (d. 1248) on the Conversion of Modal Propositions." *Oriens* 42, no. 3–4 (2014): 454–513.
- Street, Tony. "Al-ʿAllāma al-Ḥillī (d. 1325) and the Early Reception of Kātibī's *Shamsīya*: Notes towards a Study of the Dynamics of Post-Avicennan Logical Commentary." *Oriens* 44, no. 3–4 (2016): 267–300.
- Street, Tony. "Arabic Logic." In *Handbook of the History of Logic: Greek, Indian and Arabic logic*. Ed. by Dov M. Gabbay and John Woods. Amsterdam and Boston: Elsevier North Holland, 2004, 523–596.
- Street, Tony. "Avicenna and Tusi on the Contradiction and Conversion of the Absolute." *History and philosophy of logic* 21, no. 1 (2000): 45–56.
- Street, Tony. *Najm al-Dīn al-Kātibī's al-Risālah al-Shamsiyyah: An Edition and Translation with Commentary*. New York: NYU Press, 2024.
- Street, Tony. "Faḥraddīn ar-Rāzī's critique of Avicennan logic." In *Logik und Theologie: das Organon im arabischen und im lateinischen Mittelalter*. Ed. by Dominik Perler and Ulrich Rudolph. Leiden and Boston: Brill, 2005, 99–116.
- Street, Tony. "Kātibī (d. 1277), Taḥṭānī (d. 1365), and the Shamsiyya." In *The Oxford Handbook of Islamic Philosophy*. Ed. by Khaled El-Rouayheb and Sabine Schmidtke. New York: Oxford University Press, 2016, 348–374.
- Street, Tony. "Logic." In *The Cambridge Companion to Arabic Philosophy*. Ed. by Richard Taylor and Peter Adamson. Cambridge and New York: Cambridge University Press, 2005, 247–265.
- Street, Tony. "The Reception of Pointers 1.6 in Thirteenth-Century Logic: On the Expression's Signification of Meaning." In *Philosophy in the Islamic world in context. Volume 2, Philosophy and language in the Islamic world*. Ed. by Nadja Germann and Mostafa Najafi. Berlin and Boston: De Gruyter, 2021, 101–128.
- Street, Tony. "Suhrawardī on Modal Syllogisms." In *Islamic Thought in the Middle Ages: Studies in Text, Transmission and Translation, in Honour of Hans Daiber*. Ed. by W. Raven and A. Akasoy. Leiden: Brill, 2008, 163–178.
- Street, Tony. "Toward a History of Syllogistic After Avicenna: Notes on Rescher's Studies on Arabic Modal Logic." *Journal of Islamic Studies* 11, no. 2 (2000): 209–228.
- Strobino, Riccardo, and Paul Thom. "The Logic of Modality." In *The Cambridge Companion*

- ion to Medieval Logic*. Ed. by Catarina Dutilh Novaes and Stephen Read. Cambridge: Cambridge University Press, 2016, 342–369.
- Suhrawardī, Shihāb ad-Dīn Yaḥyā b. Ḥabash as-. *Oeuvres philosophiques et mystiques. Opera metaphysica et mystica II*. Ed. by Henri Corbin. Tehran: Institut franco-iranien, 1954.
- Taftāzānī, Saʿd ad-Dīn at-. *Sharḥ ash-Shamsiyya*. Jordan: Dār an-Nūr, 2011.
- Tawḥīdī, ʿAlī b. Muḥammad Abū Ḥayyān at-. *Kitāb al-Imtāʿ wa l-muʿānasa*. Cairo: Lajnat at-taʿlīf wa t-tarjama wa-n-nashr, 1939–1944.
- Ṭūsī, Naṣīr ad-Dīn aṭ-. *Kitāb Asās al-iqtibās*. Ed. by Muḥammad Taqī Mudarris Raḍawī. Tehran: Intishārāt-i Dānishgāh-i Tihārān, 1368/1990.
- Waṭwāt, Rashīd ad-Dīn Muḥammad b. Muḥammad. *Dīvān-i Rashīd ad-Dīn Waṭwāt*. Ed. by Saʿīd Nafīsī. Tehran: Kitābkhānah-i Bārānī, 1960.
- Waṭwāt, Rashīd ad-Dīn Muḥammad b. Muḥammad al-. *Majmūʿat rasāʾil Rashīd ad-Dīn al-Waṭwāt*. Ed. by Muḥammad Fahmī. Cairo: Maktabat al-ādāb, 1315/1897–1898.
- Waṭwāt, Rashīd ad-Dīn Muḥammad b. Muḥammad al-. *Maṭlūb kull ṭālib min kalām ʿAlī ibn Abī Ṭālib = Ali's hundred Sprüche. Arabisch und persisch paraphrasiert von Reschideddin Watwat, nebst einem doppelten Anhang arabischer Sprüche*. Ed. by Heinrich Leberecht Fleischer. Leipzig: Vogel, 1837.
- ʿAwfī, Muḥammad. *Tadhkirah-i lubāb al-albāb*. Ed. by Edward Granville Browne and Muḥammad ʿAbbāsī. Tehran: Kitābfurūshī-i Fakhr-i Rāzī, 1982.

Four Moves to Rule Them All: *Qiyās*-Dialectic Meta-theories and the Ascendancy of Master-Category Objections in Post-Classical Islamic Dialectics

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1 Introduction

Fellow explorers of Islamicate dialectics over its long developmental history may find it puzzling that a vast plurality of discrete objection types in “classical” works of juristic dialectic (*jadal*)—such as the hundreds we find in the *Kitāb al-Minhāj fi Tartīb al-Hijāj* of Abū l-Walīd al-Bājī (d. 474/1081)—appear to have been reduced to a mere handful in the dominant, “post-classical” genre of protocols for dialectical inquiry and disputation (*ādāb al-baḥṭh wa-l-munāzara*)—such as the three or four we find in the famous *Risāla fi Ādāb al-Baḥṭh* of Shams ad-Dīn as-Samarqandī (d. 722/1322).¹ Why and how did the focus of Muslim dialecticians narrow to such a small set of what we might call “master-category” objections? This question has lurked at the back of my mind for several years. My first suspicion was that the answer—in concert with the notable logical

1 See Abū l-Walīd Sulaymān al-Bājī, *Kitāb al-Minhāj fi Tartīb al-Hijāj* (*L'art de la Polémique: Édition Critique d'al-Minhāj de Bājī*), ed. by ‘Abd al-Majīd Turkī (Paris: Maisonneuve et Larose, 1978), 42–220; Shams ad-Dīn Muḥammad al-Samarqandī, *Risāla fi Ādāb al-Baḥṭh*, in Zakariyyā b. Muḥammad al-Anṣārī, *Faṭḥ al-Wahhāb bi-Sharḥ al-Ādāb: wa-huwa sharḥ ‘alā l-Ādāb fi l-Baḥṭh wa-l-Munāzara li-l-Imām Muḥammad b. Ashraf as-Samarqandī ... wa-ma’ahu Ḥāshiyat al-‘Allāma Muḥammad b. Aḥmad b. ‘Arafah ad-Dasūqī*, ed. by ‘Arafah ‘Abd al-Raḥmān Aḥmad ‘Abd al-Raḥmān al-Nādī (Kuwait: Dār aḍ-Ḍiyā’ li-n-Nashr wa-t-Tawzī’, 2014), 76–79; Larry Benjamin Miller, *Islamic Disputation Theory: The Uses & Rules of Argument in Medieval Islam* (Cham: Springer, 2020), 58–71, 111–113, 122; Walter Edward Young, *The Dialectical Forge: Juridical Disputation and the Evolution of Islamic Law* (Cham: Springer, 2017), 137–147, 150–182, 589–603; Abdessamad Belhaj, *Argumentation et Dialectique en Islam: Formes et Séquences de la Munāzara* (Louvain: Presses Universitaires de Louvain, 2010), 124–125, 133–137. NB: In this study, “classical” refers to chapters and treatises of juridical dialectic from the 5th/11th and 6th/12th centuries, and those of later centuries which were composed roughly on the same models; and “post-classical” refers to quite a different style of dialectical theory, whether strictly juristic or universal in application, which seem first to have appeared in the 7th/13th century and evolved into the eventually dominant genre of the *ādāb al-baḥṭh wa-l-munāzara*.

turn in Islamic legal and dialectical theory, starting in the fifth/eleventh century²—would be linked with the idea of the “post-classical” *ādāb al-baḥṭh* as a sort of master rulebook for predecessor debate models. That is, I suspected the *ādāb al-baḥṭh* was not so much meant to supplant its more complex and detailed predecessors as to present the basic rules of the game, in streamlined, syllogistic format, as a kind of skeletal template easily absorbed by trainees. Having memorized a handful of general principles and moves, trainees could bring them into any discipline and then incorporate that discipline’s peculiar subsets of justification, critique, and strategy.

However, although certain aspects of this may be true (I have abandoned the idea more generally), it now seems more likely that what produced the ascendancy of master-category objections was a set of metatheorizing processes which transformed juristic dialectics, with ever-greater abstraction, into a genre of truly universal, master dialectical rulebooks. Developing under the rubric of *ādāb al-baḥṭh wa-l-munāẓara*, these were indeed meant to be the primary rulebooks, not mere templates to flesh out differently in variant disciplines. In this way the *ādāb al-baḥṭh* models, more than any predecessor system’s, held the potential to integrate Islam’s various intellectual projects into a seamless tapestry of rational inquiry across normative, positive, and speculative realms.

The solution to the objection-reduction problem finally emerged in the course of researching a paper on the dialectal theory of the early Ottoman polymath Molla Fenârî (d. 834/1431).³ It comes as a set of metatheories⁴ set out in his work on legal theory, the *Fuṣūl al-Badā’i’ fî Uṣūl ash-Sharā’i’*, wherein, among other things, he subsumes twenty-three *qiyās*-oriented objections beneath only four master-categories, namely, *istifsār* (demanding explanation), *mumāna’a* (denying [a premise]), *munāqada* (charging with inconsistency), and *mu’āraḍa* (counter-indicating). In this study I will discuss four of the metatheories which emerged from that research, and which I tentatively named: (1) premise-

2 See Wael Hallaq, *A History of Islamic Legal Theories: An Introduction to Sunnī Uṣūl al-Fiqh* (Cambridge; New York: Cambridge University Press, 1997), 132–133, 136, 137–143.

3 Walter Edward Young, “Molla Fenârî and Pre-Imperial Ottoman Argumentation Theory,” in *Osmanlı’da İlm-i Mantık ve Münazara*, ed. by Mehmet Özturan, Yusuf Daşdemir, and Furkan Kayacan (Üsküdar, İstanbul: İSAR Yayınları, 2022), 493–550.

4 *Metatheories*, in that I understand the object level of *qiyās*-oriented dialectic to be concerned directly with the particulars of disputation (formulating acceptable arguments, valid and invalid moves and procedures, etc.), and the meta level of *qiyās*-oriented dialectic to be concerned with more abstract considerations of those principles, relations, structures, etc., which govern the object level particulars.

opposition, species-derivation, (2) quality-based derivation (active or passive), (3) *qiyās*-oriented objections subsumption, and (4) grand subsumption.⁵ There is a fifth relevant metatheory, tentatively named proper-order theory, which may also provide clues for unraveling the emergence of master-category objections. Its attendant discussions, however, are quite complicated and seem to bear less directly on the reduction problem.⁶

Where did these metatheories come from? Preliminary surveys show clearly that they did not crop up overnight. In fact, they have their roots in some of our oldest extant works of legal theory. Though somewhat less refined, variant expressions of each metatheory surfaced here and there among Molla Fenârî's predecessors and acknowledged sources. Here, as elsewhere, Molla Fenârî was a skilled syncretist and synthesizer, as well as groundbreaker.

In this study I will introduce the four directly relevant categories of metatheory, illustrating them with examples predating Molla Fenârî's early Ottoman formulations. In so doing, I believe a general picture will emerge of how and why the master-category objections became the singular focus of post-classical dialectical theory. Before proceeding, however, a quick disclaimer. In short, this study should not be considered the final say in the matter. To date, I have surveyed the *qiyās*-oriented dialectic of only eighteen works belonging to fourteen authors.⁷ There are, of course, several dozen more works which may contain material of interest, and further surveys are bound to uncover additional,

5 Molla Fenârî's metatheories are first introduced in Young, "Molla Fenârî," 534–544.

6 Though I will abandon them here, they nevertheless more than merit a dedicated study of their own. A first foray into the topic of order of objections is in Miller, *Islamic Disputation Theory*, 71–73; see also Young, *Dialectical Forge*, 135–136, summarizing Wael Hallaq, "A Tenth-Eleventh Century Treatise on Juridical Dialectic," *Muslim World* 77 (1987): 203 ff.

7 They are, in rough chronological order (works marked by an asterisk did not contain a significant amount of *qiyās*-dialectic metatheory): the *Taqwīm al-Adilla* of Abū Zayd ad-Dabūsī (Ḥanafī, d. 430/1039); the *Sharḥ al-Luma*^{*} and *al-Mulakhkhaṣ fī l-Jadal*^{*} of Abū Ishāq ash-Shirāzī (Shāfi'ī, d. 476/1083); the *Iḥkām al-Fuṣūl fī Aḥkām al-Uṣūl*^{*} and *Kitāb al-Minhāj fī Tartīb al-Ḥijāj* of Abū l-Walid al-Bājī (Mālikī, d. 474/1081); the *Kanz al-Wuṣūl ilā Ma'rifaṭ al-Uṣūl* of Fakhr al-Islām Abū l-Ḥasan al-Bazdawī (Ḥanafī, d. 482/1089); the *Mustaṣfā*^{*} of Abū Ḥamid al-Ghazālī (Shāfi'ī, d. 505/1111); the *Maḥṣūl*^{*} and *Ma'ālim*^{*} of Fakhr ad-Dīn ar-Rāzī (Shāfi'ī, d. 606/1209); the *Mughnī*^{*} of Jalāl ad-Dīn al-Khabbāzī (Ḥanafī, d. 691/1292); the *Iḥkām fī Uṣūl al-Aḥkām* of Sayf ad-Dīn al-Āmidī (Shāfi'ī, d. 631/1233); the *Muntahā* and *Mukhtaṣar al-Muntahā* of Jamāl ad-Dīn Ibn al-Ḥājib (Mālikī, d. 646/1249); the *Sharḥ al-Fuṣūl fī l-Jadal* of Burhān ad-Dīn al-Nasafī (Ḥanafī, d. 687/1289); the *Risāla fī Ādāb al-Baḥth* of Shams ad-Dīn as-Samarqandī (independent [?], d. 722/1322); the *Sharḥ Mukhtaṣar Ibn al-Ḥājib* of Aḥdud ad-Dīn al-Ījī (Shāfi'ī, d. 756/1355); the *Baḥr al-Muḥīṭ* of Badr ad-Dīn az-Zarkashī (Shāfi'ī, d. 794/1392); and the *Fuṣūl al-Badā'ī fī Uṣūl al-Sharā'i*^{*} of Molla Fenârî (Ḥanafī, d. 834/1431).

hypothesis-refining details. However, I believe that the general picture emerging at this stage is sufficient to answer the objection-reduction question, and, in so doing, yield a model dynamic that sheds light on other transformative processes essential to the streamlining of juristic dialectics and subsequent birth of a universalist *ādāb al-baḥṭh wa-l-munāẓara*.

2 A Brief Primer on *qiyās al-‘illa*

Also before proceeding, a short summary is in order with respect to the Sunnī jurists’ archetypal conception of *qiyās* (correlational inference)—namely, *qiyās al-‘illa*, or “*qiyās* of the legal cause / occasioning factor”—and its four components.⁸ In brief, a jurist’s *qiyās al-‘illa* constitutes an act of justificatory proof-seeking (*istidlāl*) by which the contended case whose ruling is being debated is treated as a branch-case (*far‘*), linked back to an authoritatively established root-case (*aṣl*), due to a shared property (*waṣf*) which has been determined to be the legal cause / occasioning factor (*‘illa*) which causes / occasions the ruling (*ḥukm*) in the root-case, and thus presumed also to cause / occasion that ruling in the branch-case. Formulations of *qiyās al-‘illa* are often, as we see in “classical” *jadāl* manuals, quite terse. For example, a jurist might simply say: “Drinking date-wine is forbidden because it is an intoxicant like grape-wine,” which may be parsed as follows:

Drinking date-wine	is forbidden	because it is an intoxicant	like grape-wine.
branch-case (<i>far‘</i>)	ruling (<i>ḥukm</i>)	property (<i>waṣf</i>) claimed to be the legal cause / occasioning factor (<i>‘illa</i>)	root-case (<i>aṣl</i>)

And diagramming the same example exposes the causal-analogical essence of *qiyās al-‘illa*:

8 For detailed explanations and analyses of *qiyās*, see Ahmad Hasan, *Analogical Reasoning in Islamic Jurisprudence: a Study of the Juridical Principle of Qiyās* (Islamabad: Islamic Research Institute, 1986); Hallaq, *History of Islamic Legal Theories*, 83–107; Young, *Dialectical Forge*, 108–128; Shahid Rahman, Muhammad Iqbal, and Youcef Soufi, *Inferences by Parallel Reasoning in Islamic Jurisprudence: Al-Shirāzī’s Insights into the Dialectical Constitution of Meaning and Knowledge* (Cham: Springer, 2019).

<i>aṣl</i> drinking grape-wine		<i>farʿ</i> drinking date-wine
<i>ʿilla</i> it is an intoxicant	←same legal cause→	<i>ʿilla</i> it is an intoxicant
<i>ḥukm</i> it is forbidden	should also be ←same legal effect→	<i>ḥukm</i> [it is (also) forbidden]

Of course, in addition to those inherent to the above formulation, there are requisite, supporting premises to which the questioner (Q) might object in a dialectical exchange, and which the respondent (R) will have to defend should he wish his *qiyās al-ʿilla* to succeed. These *qiyās*-assertion premises are the subject matter of the first metatheory.

3 Metatheory 1. Premise-Opposition, Species-Derivation Theory

I have elected to label with “premise-opposition, species-derivation theory” those instances when, elaborating on *qiyās*-oriented dialectic, a legal theorist details a range of premises related to R’s assertion of *qiyās*, and then shows which from a range of matching species of objections Q may apply to each. These objections are most often presented in the order in which they should be made, and the premise-opposition, species-derivation theory is thus consonant with whatever proper-order theory the concerned legal theorist espouses.

More rudimentary or partial examples of premise-opposition, species-derivation are already found in texts as early as Abū Zayd ad-Dabūsī’s (d. 430/1039) foundational *uṣūl al-fiqh* treatise, *Taqwīm al-Adilla*.⁹ Ad-Dabūsī’s model was forwarded, with a few refinements, by “Fakhr al-Islām” Abū l-Ḥasan al-Bazdawī (d. 482/1089), in his *Kanz al-Wuṣūl ilā Maʿrifat al-Uṣūl*. Based on al-Bazdawī’s discussion in his chapter on *mumānaʿa* (denying [a premise]), we may easily derive an oppositional table with specific types of *mumānaʿa* ranged against the kinds of justifications they would be brought to deny.¹⁰

9 See Abū Zayd ʿUbayd Allāh b. ʿUmar ad-Dabūsī, *Taqwīm al-Adilla fī Uṣūl al-Fiqh*, ed. by Khalīl Muḥyī d-Dīn al-Mays (Beirut: Dār al-Kutub al-ʿIlmiyya, 2001), 329, 334, 349, 356.

10 Abū l-Ḥasan Fakhr al-Islām ʿAlī b. Muḥammad al-Bazdawī, *Uṣūl al-Bazdawī: Kanz al-Wuṣūl ilā Maʿrifat al-Uṣūl ... wa maʿahu Takhrīj Aḥādīth Uṣūl al-Bazdawī ...*, ed. by Sāʿid Bakdāsh, Third Printing (Cairo: Dār al-Salām, 2021), 629–670.

R's invalid justifications	Q's objections
[R employs something which is not right as an indicant (<i>dalīl</i>)] ¹¹	" <i>Mumāna'a</i> (denial) of [R's] proof-argument (<i>hujja</i>) itself." [I.e., denial of R's <i>qiyās</i> method.]
[R attempts causal justification (<i>ta'līl</i>) with a contended property (<i>wasf</i>)]	" <i>Mumāna'a</i> of the property which [R] made a legal cause. Does it exist in the root-case and branch-case or not?"
[R's legal cause (<i>'illa</i>) does not fulfil the conditions of causal justification (<i>shurūṭ at-ta'līl</i>) established by consensus]	" <i>Mumāna'a</i> of the conditions (<i>shurūṭ</i>) of [R's] legal cause."
[R has merely presented the property (<i>wasf</i>), without explaining its efficiency (<i>athar</i>)]	" <i>Mumāna'a</i> of the [potentially efficient] quality (<i>ma'nā</i>) by which it [R's <i>qiyās</i>] ¹² becomes an indicant (<i>dalīl</i>)."

Note that R's justifications, as derived from al-Bazdawī's discussion, constitute premises for a broader *qiyās* argument, and appear in their natural order. Thus we may look on them as a series, with each consecutive premise matched with a corresponding objection. When R pronounces his proof-argument (*hujja*)—that is, that his ruling may be justified by such-and-such a *qiyās*—then Q might deny, when appropriate, that R's formulation of *qiyās* here constitutes an acceptable indicant (*dalīl*). Barring that, when R claims a purportedly causal property (*wasf*) for both root-case (*aṣl*) and branch-case (*far'*), then Q, if this property is contended, might deny its existence in one or the other. Should that fail, when R claims that the property is valid as a legal cause (*'illa*), then Q might deny, when appropriate, its fulfilling all the conditions for being a

11 In al-Bazdawī's example (*Kanz al-Wuṣūl*, 629) the invalid *dalīl* appears to be a kind of correlational inference of the opposite (*qiyās al-'aks*), which, along with its counterpart, correlational inference of co-presence (*qiyās at-ṭard*), was unacceptable to him and most other Ḥanafis. See Quṭb Muṣṭafā Sānū, *Mu'jam Muṣṭalahāt Uṣūl al-Fiqh, 'arabī-inkilīzī* (Beirut: Dār al-Fikr al-Mu'aṣṣir, 2000), 354, s.v. [قياس العكس]; Abū l-Ḥusayn Muḥammad al-Baṣrī, *Kitāb al-Mu'tamad fī Uṣūl al-Fiqh*, ed. by Muḥammad Ḥamīd Allāh, Muḥammad Bakir, and Ḥasan Ḥanafī (Damascus: al-Ma'had al-'Ilmī al-Faransī li-d-Dirāsāt al-'Arabīyya bi-Dimashq, 1964–1965), 2:697–699; Abū l-Ḥusayn Muḥammad al-Baṣrī, *Kitāb al-Qiyās al-Shar'ī*, in *idem*, 2:1031–1033; Hallaq, "A Tenth-Eleventh Century Treatise," 207–209; Young, *Dialectical Forge*, 109.

12 The intended referent of "it" is not clear, but seems most likely to be R's *qiyās* itself.

legal cause. Finally, when R claims that his legal cause occasions his ruling, then, if R failed to prove his property's causal efficiency (*athar*, *ta'thūr*), Q might deny that R's property occasions his ruling, and, therefore, that R's *qiyās* constitutes an indicant (*dalīl*). Note that, as confirmed throughout the literature of Islamicate dialectics (and illustrated by al-Bazdawī's accompanying his second *mumāna'ā* with a question), Q's denials are of course not mere obstinate refusals to concede—rather, each constitutes a demand for further evidence.

Some three centuries after al-Bazdawī, and decades after uṣūlists like Ibn as-Sā'ātī (d. 694/1295) first synthesized the variant methodological programs that had developed in Ḥanafī and Shāfi'ī circles,¹³ we find a far more advanced premise-opposition, species-derivation theory in 'Aḍud ad-Dīn al-Ījī's (d. 756/1355) commentary on Ibn al-Ḥājjib's (d. 646/1249) *Mukhtaṣar al-Muntahā*. In this case, al-Ījī matches a more complete range of *qiyās*-argument premises with the extensive range of *qiyās*-oriented objections which Ibn al-Ḥājjib had assembled and arranged from the discourses of predecessor legal theorists and dialecticians. Ibn al-Ḥājjib's, in fact, is among the longer lists, containing twenty-five discrete *qiyās*-oriented objections,¹⁴ many with customary names tracing back at least to the earliest extant juristic *jadal* treatises.

The treatments of these time-honored *qiyās*-oriented objections are complex and often require a great deal of unpacking, which is not an objective of this study; in what follows, objections will only be translated, not explained.¹⁵ In fact, it can be said with all confidence that each one of Ibn al-Ḥājjib's twenty-five *qiyās*-oriented objections merits an extended study of its own—not only with an intellectual-historical approach, tracing attendant controversies and formulations over time, but with an argumentation-theory approach, analyzing and explaining premodern formulations and bringing them to bear on modern problems in logics and dialogics. Initial forays into this latter project

13 See Norman Calder, "Uṣūl al-Fiḫh," *Encyclopædia of Islam*, 2nd Edition, 12 vols. with indexes, etc., ed. by P.J. Bearman et al. (Leiden: Brill, 1960–2005).

14 By contrast, for example, al-Baṣrī had seven primary (i.e., not including subtypes) *qiyās*-oriented objections; ash-Shīrāzī and al-Bājjī had fifteen; az-Zarkashī had sixteen; aṭ-Ṭūfī had twenty-two; and Molla Fenārī had twenty-three.

15 For brief descriptions of these same twenty-five as per Molla Fenārī, see the table in Young, "Molla Fenārī," 516–520. Certain mainstay objections in "classical" *jadal* (most of which appear in Ibn al-Ḥājjib's list) are treated in more detail in Miller, *Islamic Disputation Theory*, 58–71; Young, *Dialectical Forge*, 137–147, 150, 152–182, 565–607; Mas'ūd Fallūsī, *Al-Jadal 'inda l-Uṣūliyyīn: bayna n-Naẓariyya wa-t-Taṭbīq* (Riyadh: Maktabat ar-Rushd Nāshirūn, 2003), 411–465.

have already borne fruit and proven the potential of Islamicate dialectics to contribute significantly to modern argumentation theory.¹⁶

Returning to our first metatheory, it is near the end of the introductory part of his commentary on Ibn al-Ḥājjib's *qiyās*-oriented objections (*i'tirāḍāt*), before delving into the specifics of each objection, one by one, that al-Ījī bequeaths us a succinctly laid-out model of premise-opposition, species-derivation theory.

You know that exhaustive intellective enumeration (*al-ḥaṣr al-'aqlī*)¹⁷ of such things as the number of objections (*i'tirāḍāt*) is problematic, especially since it is something that technical usage (*iṣṭilāḥ*) and convention (*muwāḍa'a*) enter into. However, there is no harm in being precise for the sake of clarifying conceptions (*taqrīb*).¹⁸ So their species (*anwā'*) will first be specifically named, and the genera (*aḡnās*) of each number will be specified at its start, and it will become clear to you that [the genera] are twenty-five and their species seven. Which is to say that the proof-seeker (*mustadill*, i.e., the respondent, R) is obliged—in *qiyās* and elsewhere—to [1] make understood what he asserts, especially in identifying what he is claiming. And if [R] is impelled to *qiyās*, then he must [2] be in a position to do *qiyās*, owing to an absence of what would deny him that. Then he will affirm [his *qiyās*'s] premises (*muqaddimāt*),

16 With regard to the *qiyās*-oriented objection of *kasr*, or “breaking,” see Shahid Rahman and Walter Edward Young, “Outside the Logic of Necessity: Deontic Puzzles and ‘Breaking’ Compound Causal Properties in Islamic Legal Theory and Dialectic,” in *Fallacies in the Arabic, Byzantine, Hebrew and Latin Traditions*, ed. by Laurent Cesalli et al. *Ad Argumenta. Quaestio special issues* (Turnhout: Brepols, 2023, 153–185); with respect to that mode of *qiyās*-oriented causal-justification known as *dawarān* (concomitance), see Shahid Rahman and Walter Edward Young, “In Existence and in Nonexistence: Types, Tokens, and the Analysis of *Dawarān* as a Test for Causation,” *Methodos* (online) 22 (2022), <https://journals.openedition.org/methodos/8838> (accessed March 6, 2023); and with respect to *qiyās*-method more broadly, see Rahman, Iqbal, and Soufi, *Inferences by Parallel Reasoning*.

17 Cf. the “intellective analytical division” (*taqṣīm 'aqlī*) of later *ādāb al-baḥṭh* theory, such as we find in Shaykh Zādah Ismā'īl b. Muṣṭafā Gelenbevi [al-Kalanbawī], *Risālat al-Ādāb fī Ādāb al-Baḥṭh wa-l-Munāẓara ... muḍāḡfan ilayhā Ḥāshiyatā li-l-'Ālāmatayn al-Shaykh 'Abd ar-Raḥmān b. Muḥammad al-Baynjūnī* [sic], *al-Shaykh 'Umar b. Muḥammad Amīn al-Qarah Dāghī*, ed. by Markaz al-Hāshimiyya li-d-Dirāsāt wa Taḥqīq at-Turāth (Istanbul: al-Maktaba al-Hāshimiyya, 2018), 34, 146–147.

18 Or, perhaps, as in the later *ādāb al-baḥṭh*, “for the sake of conveying our proof such that it actually entails what we set out to prove.” Cf. the definition of *taqrīb* in Gelenbevi, *Risālat al-Ādāb*, 25.

namely: [3] the ruling (*ḥukm*) of the root-case (*aṣl*), and [4] [the root-case's] legal cause (*'illa*), and [5] the affirmation of the legal cause in the branch-case (*far'*). And this must be in such a manner as entails [6] affirmation of the branch-case's ruling, and [7] that this ruling is itself [R's] sought-after objective (*maṭlūb*), which he first claimed, and for which he conveyed [his] indicant (*dalīl*). These are seven stages (*maqāmāt*); and directed against each stage is a species (*naw'*) of objection (*i'tirād*).¹⁹

Thus al-Ījī describes the seven stages (*maqāmāt*) in which R presents his *qiyās*, with the latter five (nos. 3–7) consisting in the assertion of *qiyās*-completing premises (*muqaddimāt*), then he promises that these stages will be matched with their corresponding species (*anwā'*) of objection, under which we will find the individual genera (*ajnās*) of objection types. (NB: The reader must of course bear in mind, as at-Taftāzānī's gloss on al-Ījī reminds us, the uṣūlī convention of species subsuming genus, rather than the other way round.²⁰)

Just as Molla Fenārī does decades later in his *Fuṣūl al-Badā'ī'*, however, al-Ījī does not immediately describe the distinguishing qualities of each species. Rather, he explains, systematically, one species at a time, only upon reaching the first individual “genus” of each species in his detailed commentary on the twenty-five *qiyās*-oriented objections which follows. The brief species-relevant details listed in the below table are thus gathered from al-Ījī's species-oriented discussions dispersed throughout the remaining commentary on Ibn al-Ḥājjib's objections (*i'tirādāt*); and fuller descriptions of most will be revisited below in the section on quality-based derivation theory.²¹

19 'Aḍud ad-Dīn al-Ījī et al., *Sharḥ Mukhtaṣar al-Muntahā al-uṣūlī li-Abī 'Umar 'Uthmān ibn al-Ḥājjib al-Mālikī*; *sharāḥu 'Aḍud ad-Dīn 'Abd al-Raḥmān al-Ījī wa 'alā l-Mukhtaṣar wa-l-Sharḥ Ḥāshiyat Sa'd ad-Dīn at-Taftāzānī wa-Ḥāshiyat al-Sayyid al-Sharīf al-Jurjānī wa-'alā Ḥāshiyat al-Jurjānī Ḥāshiyat Ḥasan al-Harawī l-Fanārī wa-'alā l-Mukhtaṣar wa-Sharḥu wa Ḥāshiyat al-Sa'd wa-l-Jurjānī Ḥāshiyat Muḥammad Abū l-Faḍl al-Warrāqī l-Jizāwī*, 3 vols., ed. by Muḥammad Ḥasan Muḥammad Ḥasan Ismā'īl (Beirut: Dār al-Kutub al-'Ilmiyya, 2004), 3:473–474.

20 See Sa'd ad-Dīn at-Taftāzānī, *Ḥāshiyat Sa'd ad-Dīn at-Taftāzānī* [‘alā *Sharḥ Mukhtaṣar al-Muntahā*], in *idem*, 3:474.

21 Descriptions of the seven species are found in al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:474 (species #1); 3:477 (species #2); 3:484 (species #3); 3:488–489 (species #4); 3:533 (species #5); 3:543 (species #6); 3:546 (species #7).

The respondent's stages (<i>maqāmāt</i>) and premises (<i>muqaddimāt</i>) of proof-seeking (<i>istidlāl</i>) by way of <i>qiyās</i>	The questioner's species (<i>anwā'</i>) and genera (<i>ajnās</i>) of <i>qiyās</i> -oriented objections (<i>i'tirādāt</i>)
Stage (<i>maqām</i>) #1: R must make understood (<i>ifhām</i>) what he claims.	Species (<i>naw'</i>) #1: ²² "What is connected to [R's] making his claim, or something else, understood." – Genus (<i>jins</i>) #1. <i>al-istifsār</i> (demanding explanation) ²³
Stage #2: R affirms that there is no obstruction to doing <i>qiyās</i> in this instance.	Species #2: ²⁴ "[Q's] considering whether [R] can draw proof (<i>istidlāl</i>) by way of <i>qiyās</i> in this issue (<i>mas'ala</i>)." – absolute denial of R's ability to do <i>qiyās</i> here, because univocal text [from Qur'ān / Sunna] (<i>naṣṣ</i>) has already indicated the contrary ruling (<i>khilāf</i>) – Genus #2. <i>fasād al-i'tibār</i> (invalid consideration [of <i>qiyās</i> applicability]) ²⁵ – denial of R's specific <i>qiyās</i> , because the unifying factor (<i>jāmi'</i>) [i.e., the presumed legal cause] has already been affirmed by univocal text and consensus (<i>ijmā'</i>) to occasion the ruling's contradictory (<i>naqīḍ</i>) – Genus #3. <i>fasād al-waḍ'</i> (invalid production [of ruling from legal cause]) ²⁶
Stage #3: R affirms the first premise of his <i>qiyās</i> : the ruling (<i>ḥukm</i>) in the root-case (<i>aṣl</i>) is Y.	Species #3: ²⁷ "What is brought against the first <i>qiyās</i> -premise: the claim of the root-case's ruling, there being no occasion here for <i>mu'āraḍa</i> (counter-indication), as this would constitute usurpation (<i>ghaṣb</i>) of the proof-seeking role." – denial (<i>man'</i>) [that the ruling in the root-case is Y] from the outset – Genus #4. <i>man' ḥukm al-aṣl</i> (denying the root-case's ruling) ²⁸ – denial [that the ruling in the root-case is Y] after division (<i>taqṣīm</i>) ²⁹ – Genus #5. <i>at-taqṣīm</i> (division) ³⁰

22 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:474.

23 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:476–477.

24 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:477.

25 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:480–481.

26 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:483–484.

27 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:484.

28 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:486–487.

29 That is, after dividing R's equivocal expression into probable meanings and denying one of them.

30 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:488–489.

(cont.)

Stage #4: R affirms the second premise of his <i>qiyās</i>: the ruling (<i>ḥukm</i>) in the root-case (<i>aṣl</i>) is caused by property (<i>waṣf</i>) X; i.e., the cause (<i>illa</i>) in the root-case is X.	Species #4:³¹ “What is brought against the second <i>qiyās</i>-premise, namely, [R’s] saying: ‘The ruling in the root-case is caused (<i>mu’allal</i>) by such-and-such a property.’” – the objection (<i>qadh</i>) is with respect to the property’s existence [in the root-case] • Genus #6. <i>man’ wujūd al-mudda’ū ‘illatan fī l-aṣl</i> (denying the existence, in the root-case, of what is claimed to be the cause)³² – the objection is with respect to the property’s causation (<i>‘illiyya</i>) • negating the causation explicitly ◦ mere denial (<i>man’ mujarrad</i>) – Genus #7. <i>man’ kawnihi ‘illatan</i> (denying the property’s being a cause)³³ ◦ <i>mu’araḍa</i> and explanation of non-efficiency (<i>bayān ‘adam at-ta’tīr</i>) – Genus #8. <i>‘adam at-ta’tīr</i> (lack of efficiency)³⁴ • negating what is entailed (<i>lāzim</i>) of the causation ◦ specifically relevant to the presumed cause’s suitability (<i>munāsaba</i>); according to the [necessary] conditions (<i>shurūt</i>) for a suitable property (<i>munāsib</i>) – negating its having no counter-indicant (<i>‘adam al-mu’arīḍ lahā</i>) • Genus #9. <i>al-qadh fī l-munāsaba bi-mā yalzamu min muḥsida rājiḥa aw musāwiya</i> (objecting to the suitability via what is entailed in terms of a preponderant or equivalent invalidating factor)³⁵ – negating its leading to human welfare (<i>al-ifḍā’ ilā l-maṣlaḥa</i>)³⁶ • Genus #10. <i>al-qadh fī ifḍā’ al-ḥukm ilā l-maqṣūd</i> (objecting to the ruling’s leading to what is aimed at [in terms of human welfare])³⁷

31 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:488–489.

32 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:493.

33 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:493–496.

34 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:500–501.

35 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:504.

36 In his description of the species and its genera (al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:489), *ifḍā’* is mentioned before *‘adam al-mu’arīḍ*, and so one would assume that negating *ifḍā’* is genus #9 and negating *‘adam al-mu’arīḍ* is genus #10; but in the detailed treatments of each, a differently formulated negating *‘adam al-mu’arīḍ* (viz. *al-qadh fī l-munāsaba bi-mā yalzamu min muḥsida rājiḥa aw musāwiya*) is genus #9 (al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:504), while a differently formulated negating *ifḍā’* (*al-qadh fī ifḍā’ al-ḥukm ilā l-maqṣūd*) is genus #10 (Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:506). We have preserved the latter order, as it seems better established by the text (i.e., in the species description it is the conditions [not objections] which are ordered differently, and they are not numbered, whereas in the detailed treatments it is the objections which are ordered and they are indeed numbered). But note that Molla Fenārī orders according to the former order (negating *ifḍā’* is genus #9 and negating *‘adam al-mu’arīḍ* is genus #10), therefore marking an apparent departure from al-Ījī.

37 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:506.

(cont.)

- negating its being apparent (*aẓ-ẓuhūr*)
 - Genus #11. *kawn al-waṣf khafiyyan* (the property's being hidden)³⁸
- negating its precise determination (*al-inḍibāṭ*)
 - Genus #12. *kawnihi ḡhayr munḍabiṭ* (the property's being imprecisely determined)³⁹
- not specifically relevant to the presumed cause's suitability; in view of the cause's condition (*sharṭ*), being co-present (*iṭṭirād*), and being co-absent (*in'ikās*)
 - negating the co-presence (*tard*)
 - without elimination of a restricting property (*qayd*)⁴⁰
 - Genus #13. *an-naqḍ* (inconsistency; i.e., showing the presumed cause exists elsewhere without the ruling)⁴¹
 - after elimination of a restricting property
 - Genus #14. *al-kasr* (breaking; i.e., disassembling a compound cause and proving its remaining component inconsistent)⁴²
 - negating the co-absence (*in'ikās*)
 - Genus #15. *'adam al-'aks* (lack of co-absence) and/or (?) *al-mu'araḍa fī l-aṣl bi-ma'nā ākhar* (counter-indication in the root-case with another quality)⁴³

38 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:507.

39 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:508.

40 See Sānū, *Mu'jam*, 358, s.v. [القيد], where, among other things, he notes: "It is the [restricting] addition of a property (*waṣf*) or a condition (*sharṭ*) to something's quiddity (*māhiyya*). [...] The *qayd* can be a property, or a condition, a telos (*ghāya*), a number (*'adad*), a title (*laqab*), a state (*hāl*), a circumstance (*ẓarf*), etc."

41 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:509–513. NB: again, in his description of the species and its genera (3:489), al-Ījī mentions *kasr* before *naqḍ* (i.e., *kasr* would be genus #13 and *naqḍ* genus #14), but then, in the detailed treatments of each, *naqḍ* appears first as #13 and *kasr* after as #14. This latter order was also followed by Molla Fenārī.

42 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:515. For an in-depth examination of *kasr*, see Rahman and Young, "Outside the Logic of Necessity."

43 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:517–532. Now, in his description of the species and its genera (3:489), al-Ījī names "negating the being co-absent" (*naṭī l-in'ikās*) as the third category of those species #4 objections which are both "negating what is entailed (*lāzīm*) of the causation" and "not specifically relevant to the presumed cause's suitability," and he names the tenth of species #4's ten genera "*'adam al-'aks* (lack of co-absence)." This would make *'adam al-'aks* the 15th genus overall. However, in the detailed treatments of each genus, #15 is *al-mu'araḍa fī l-aṣl*, and there is no mention whatever of *'adam al-'aks*. This appears to have created difficulties of interpretation, noticed and commented upon—though not really solved—by at-Taftāzānī (*Hāshiyat*, 3:490).

(cont.)

[—]	[Not accounted for in al-Ījī's species derivation, but, following Ibn al-Ḥājjib, numbered among the genera in the detailed treatments]⁴⁴ – Genus #16. <i>su'āl at-tarkīb</i> (question of composition)⁴⁵ – Genus #17. <i>su'āl at-ta'diya</i> (question of extendibility)⁴⁶
Stage #5: R affirms the third premise of his <i>qiyās</i>: the legal cause ('illa) exists [equally] in the branch-case (<i>far'</i>).	Species #5:⁴⁷ "What is brought [against R] by considering the third [<i>qiyās</i>-]premise, namely, the claim of the legal cause's equal existence in the branch-case." – rebutting (<i>daf'</i>) its existence by way of denial (<i>man'</i>) • Genus #18. <i>man' wujūdihi fi l-far'</i> (denying [the property's] existence in the branch-case)⁴⁸ – rebutting its existence by way of <i>mu'āraḍa</i> • Genus #19. <i>al-mu'āraḍa fi l-far' bi-mā yaqtaḍi naqīḍ al-ḥukm 'alā naḥwi ṭuruq ithbāt al-'illa</i> (counter-indication in the branch-case by what necessitates the contradictory of [R's] ruling, in the manner of the methods for establishing the legal cause)⁴⁹ – rebutting the equivalence (<i>musāwā</i>) by considering the appending of a condition (<i>shart</i>) in the root-case or an impeding factor (<i>māni'</i>) in the branch-case • Genus #20. <i>al-farq</i> (disqualifying difference)⁵⁰ – considering the legal cause ('illa) itself, due to disparity (<i>ikhtilāf</i>) with regard to what determines [the rule] (<i>aḍ-ḍābiṭ</i>) • Genus #21. <i>ikhtilāf aḍ-ḍābiṭ fi l-aṣl wa-l-far'</i> (disparity of what determines [the rule] in the root-case and the branch-case)⁵¹ – considering the legal cause itself due to disparity regarding the human welfare (<i>maṣlaḥa</i>) • Genus #22. <i>ikhtilāf jins al-maṣlaḥa [fi l-aṣl wa-l-far']</i> (disparity of the genus of human welfare [in the root-case and the branch-case])⁵²

44 Al-Ījī opens his description of *su'āl at-tarkīb* and *su'āl at-ta'diya* (*Sharḥ Mukhtaṣar al-Muntahā*, 3:533) with the following disclaimer: "I say: the *jadāl*-theorists count these two objections among the numbers of objections; but they [both] revert back to a species of one of the remaining objections distinguished by a name, and neither of them is an independent question." Immediately after describing them, he resumes his species descriptions, proceeding to species #5. Note that Molla Fenārī departs from Ibn al-Ḥājjib and al-Ījī by not numbering *su'āl at-tarkīb* and *su'āl at-ta'diya* at all (though he does treat them in an aside, between his 15th and 16th objections), and thus his list contains only twenty-three objections in total.

45 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:533.

46 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:533.

47 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:533.

48 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:535.

49 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:536–538.

50 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:539.

51 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:541–542.

52 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:543.

(cont.)

Stage #6: R affirms the fourth premise of his <i>qiyās</i>: the ruling (<i>ḥukm</i>) exists in the branch-case (<i>farʿ</i>)	Species #6:⁵³ “What is brought against the fourth <i>qiyās</i>-premise, namely, [R’s] saying: ‘Thus the ruling exists in the branch-case;’ and since [R] has established an indicant (<i>dalīl</i>) for it, there is no path to denying [this premise].” – Q claims mutual disparity (<i>mukhālafā</i>) [between the rulings of root-case and branch-case] and clarifies [the difference], limiting himself to that • Genus #23. <i>mukhālafat ḥukm al-farʿ li-ḥukm al-aṣl</i> (mutual disparity between the ruling of the branch-case and the ruling of the root-case)⁵⁴ – Q claims mutual disparity and clarifies it, then claims that R’s indicant (<i>dalīl</i>) necessitates it • Genus #24. <i>al-qalb</i> (reversal)⁵⁵
Stage #7: R affirms the fifth premise of his <i>qiyās</i>: this ruling (<i>ḥukm</i>) is indeed the sought-after objective (<i>maṭlūb</i>)	Species #7:⁵⁶ “What is brought against [R’s] saying, after affirming the ruling in the branch-case: ‘And that is the sought-after objective (<i>maṭlūb</i>).’” – Q denies it, saying: “We don’t concede, indeed, the contention (<i>nizāʿ</i>) yet remains” [because R’s indicant in fact proves something else besides the sought-after objective] • Genus #25. <i>al-qawl bi-l-mūjib</i> (asserting the [same] necessitator)⁵⁷

Thus al-Ījī accounts for all but two of Ibn al-Ḥājjib’s twenty-five *qiyās*-oriented objections, treating each as a genus subsumed by a species (according to uṣūlī convention), seven in number, each in turn opposed to one of the seven stages (*maqāmāt*) of R’s *qiyās* presentation. And just as I have elsewhere noted with regard to Molla Fenārī’s version,⁵⁸ al-Ījī’s premise-opposition, species-derivation theory provides a practical system of *topoi* for the questioner in a *qiyās*-oriented dialectic.

By way of a first example, we may focus on the second stage (*maqām*) of R’s *qiyās* presentation. Once R affirms (or merely assumes) that there is nothing preventing him from doing *qiyās* for the issue at hand, Q will know—having memorized the species and genera of *qiyās*-oriented objections—that he might, if appropriate, deny that *qiyās* can be done here. In fact, upon exam-

53 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:543.

54 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:545.

55 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:545–546.

56 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:546.

57 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:547–548.

58 Cf. Young, “Molla Fenārī,” 540 and n. 132.

ining the issue further, Q discovers that univocal scripture (*naṣṣ*) has already dictated the contrary of R's ruling. Thus he knows that he can deny R's proposed *qiyās* absolutely, with the objection of *fasād al-i'tibār* (invalid consideration). Examining the contexts of R's proposed *qiyās* has, in this way, allowed Q to "locate" the appropriate objection in al-Ījī's premise-opposition, species-derivation structure.

By way of a second, somewhat more complicated example, we may turn to the fourth stage of R's *qiyās* presentation. Once R has identified the purportedly rule-occasioning causal property in the root-case, Q will know—having memorized al-Ījī's *topoi* machinery—that he can, if appropriate, bring no less than ten different objections. But which, if any, are relevant? Upon further examination of R's identification of the legal-cause, Q discovers a problem with regard to its presumed causation (*'illiyya*), which entails not so much the omission of a suitability condition as an instance of inconsistency, and not one that requires, in order to prove it, any manipulation of properties in a compound. Thus Q locates *naqd* (inconsistency), objecting by way of a counter-example wherein R's presumed legal cause is present but without R's ruling.

Supposing R's *qiyās* withstands such objections (and note that several "classical" *jadāl* texts are replete with illustrated, valid responses to practically every charge), he might reach the seventh stage of his *qiyās* presentation: closing with the claim that what he has proven in terms of the contended ruling is indeed what he set out to prove (i.e., the *maṭlūb*). It may be that Q will find this to be truly the case and thus, inevitably, concede the whole of R's thesis (a termination of dialectic which came to be known as *ilzām*).⁵⁹ But if, upon examining the ruling produced by R's *qiyās*, he discovers that it is not, in fact, the ruling that R sought to prove from the start, Q will "locate" the relevant objection—the only one left at this final stage—and bring *al-qawl bi-l-mūjib* (asserting the [same] necessitator) against R's last premise. In essence, this is a charge of *ignoratio elenchi*, with Q at once maintaining the integrity of R's *qiyās* and what it obliges (hence: "asserting the [same] necessitator"), yet not conceding that what it obliges is equivalent to R's original thesis. Since R's *qiyās* proves something besides the *maṭlūb*, contention (*nizā'*) remains.

Though patently drawing on al-Ījī, Molla Fenârî significantly refines and simplifies his predecessor's premise-opposition, species-derivation theory in his *Fuṣūl al-Badā'ī'*. To begin with, rather than seven stages (*maqāmāt*), the latter

59 As opposed to *ifhām* (silencing), which is R's inability to respond to one of Q's valid objections. Among other places, see Miller, *Islamic Disputation Theory*, 111; Belhaj, *Argumentation et Dialectique*, 120, 126–127.

five of which are affirmations of premises (*muqaddimāt*), Molla Fenârî posits that R's proof-seeking (*istidlāl*) by way of *qiyās* is completed by explaining six premises:⁶⁰

- [1] what is claimed is a [proper] site for *qiyās*;
- [2] the ruling (*ḥukm*) of the root-case (*aṣl*) is Y;
- [3] X is [ruling Y's] legal cause (*'illa*);
- [4] *'illa* X is affirmed in the branch-case (*far'*);
- [5] *'illa* X entails the affirmation of the branch-case's ruling;
- [6] that ruling [in the branch-case] is the sought-after ruling.

Also like al-Ījī, though with some variation, Molla Fenârî presents a concise theory of premise-opposition, species-derivation, attributing it to anonymous predecessors. Somewhat differently, he subsumes his twenty-three objections—each one a type (*ṣinf*) belonging to a species (*naw'*)—from the start:

For this they set down seven species (*anwā'*) of objections (*i'tirāḍāt*) comprising twenty-three types (*ṣinf*): some are general, applying to every premise, like *istifsār* (demanding explanation) and *taqṣīm* (division), or to every *qiyās*, like the types of *mumāna'a* (denying [a premise]) and *mu'araḍa fī l-far'* (counter-indication in the branch-case), while some are specific to the co-present [property] (*ṭardī*), and some to the suitable (*munāsib*) and the efficient (*mu'aththir*), as will be forthcoming.

To the first [species] belongs one:

- [1] *istifsār* (demanding explanation).

To the second [species belongs] two: [against premise #1]

- [2] *fasād al-i'tibār* (invalid consideration) and
- [3] *fasād al-waḍ'* (invalid production).

To the third [species belongs] two: [against premise #2]

- [4] *man' al-ḥukm fī l-aṣl* (denying the ruling in the root-case) and
- [5] *taqṣīm* (division).

60 Shams ad-Dīn Muḥammad b. Ḥamza al-Fanārī [Molla Fenârî], *Fuṣūl al-Badā'ī' fī Uṣūl ash-Sharā'ī'*, 2 vols., ed. by Muḥammad Ḥasan Muḥammad Ḥasan Ismā'īl (Beirut: Dār al-Kutub al-'Ilmiyya, 2006), 2:380; Shams ad-Dīn Muḥammad b. Ḥamza al-Fanārī [Molla Fenârî], *Taḥqīq Kitāb Fuṣūl al-Badā'ī' fī Uṣūl ash-Sharā'ī' li-Shams ad-Dīn Muḥammad b. Ḥamza al-Fanārī* [d. 834 H] *min awwal al-ijmā' ilā nihāyat al-kitāb*, ed. by Yāsir b. Muḥammad b. Šāliḥ Hawsāwī (MA Thesis, Jāmi'at Umm al-Qurā, 1428 [2007]), 223.

To the fourth [species belongs] ten: [against premise #3]

[6] *man' wujūd al-illa fī l-aṣl* (denying the cause's existence in the root-case),

[7] *man' illiyyatihā fī l-kull* (denying its causation for anything),

[8] *'adam ta'thīrihā fī l-mu'aththira* (its lack of efficiency, [as directed against] the efficient cause),

then, for the suitable [property] (*munāsib*) specifically,

[9] *'adam al-ifḍā'* (lack of leading to [human welfare]),

[10] *wujūd al-mu'arīd* (existence of a counter-indicant),

[11] *'adam az-ẓuhūr* (lack of apparentness),

[12] *'adam al-inḍibāt* (lack of precise determination),

then, for all [property types],

[13] *naqḍ* (inconsistency),

[14] *kasr* (breaking),

[15] *'adam al-'aks wa ma'āluhu l-mu'āraḍa [fī l-aṣl]* (lack of co-absence and its consequence: counter-indication [in the root-case]).⁶¹

To the fifth [species belongs] five: [against premise #4]

[16] *man' wujūd al-illa fī l-far'* (denying the cause's existence in the branch-case),

[17] *mu'āraḍatuhā fīhi* ([the cause's] counter-indication in [the branch-case]),

[18] *al-farq bi-ḍamīmat fī l-aṣl aw mānī' fī l-far'* (disqualifying difference by appending [a condition] in the root-case or by an impeding factor in the branch-case),⁶²

[19] *ikhṭilāf aḍ-ḍābiṭ* (disparity of what determines [the rule]),

[20] *ikhṭilāf al-maṣlaḥa* (disparity of the human welfare).

To the sixth [species belongs] two: [against premise #5]

[21] *mukhālafat ḥukm al-far' li-ḥukm al-aṣl* (mutual disparity between the branch-case's ruling and the root-case's ruling),

[22] *qalb* (reversal).

To the seventh [species belongs] one: [against premise #6]

[23] *al-qawl bi-l-mūjib* (asserting the [same] necessitator).

61 In al-Fanārī, *Fuṣūl al-Badā'ī'*, Ismā'īl ed., 2:380, it is [عدم العكس ومآله المعارضة في الأصل]; in al-Fanārī, *Fuṣūl al-Badā'ī'*, Hawsāwī ed., 223–224, it is [عدم العكس ومآله المعارضة]. As noted elsewhere, this may represent Molla Fenārī's solution to the problem regarding objection #15, namely, that al-Ījī equates it to *naḥī l-in'ikās* / *'adam al-'aks* in his species description, but lists it as *al-mu'āraḍa fī l-aṣl* in his detailed objection description.

62 In al-Fanārī, *Fuṣūl al-Badā'ī'*, Ismā'īl ed., 2:380, it is [الفرق بضميمة في الأصل]; in al-Fanārī, *Fuṣūl al-badā'ī'*, Hawsāwī ed., 224, it is [الفرق بضميمة في الأصل].

As mentioned earlier, Molla Fenârî also does not engage in describing the characteristics of each species here, but waits for the appropriate moment in the later, more detailed treatments of his twenty-three *qiyās*-oriented objections. In the main, his species descriptions do not differ significantly from al-Ījī's, except that the first species (not described, and containing only *istifsār*) stands alone as a kind of prefatory clarification (should R's initial presentation of his indicant [*dalīl*] be unclear), while the remaining six are matched to the six aforementioned premises of *qiyās* completion.⁶³ Finally, as earlier indicated, Molla Fenârî's rendering of premises, species, and types functions in the same way as al-Ījī's: as an ultimately practical hierarchy of *topoi*, to be employed by the questioner in the manner demonstrated by the examples above.

4 Metatheory 2. Quality-Based Derivation Theory

When an *uṣūl*ist or *jadal* theorist demonstrates how the master-category objections (and, in some cases, primary illicit moves) derive from a tightly circumscribed field of their active or passive qualities, I would refer to this as a "quality-based derivation theory." And with the active vs. passive distinction, I am attempting to discern, on the one hand, such models as seem to map out relations between where an arguer is (actively) directing his critiques and the objection types that result, and, on the other, such models as are merely (passively) revealed by mentioning the objection types' differentiae.

An example of the latter (passive) model is found in that well-known, "post-classical" compilation of legal theory, the encyclopedic *al-Baḥr al-Muḥīṭ* of Badr ad-Dīn az-Zarkashī (d. 794/1392). In fact, there is the equivalent of an entire treatise on *jadal* in the author's chapter on *qiyās*-oriented objections (*i'tirāḍāt*),⁶⁴ and early on in the prefatory discussions, he says:⁶⁵

At the root, [objections (*i'tirāḍāt*)] are divided into three types: *muṭāla-bāt* (demands), *qawāḍiḥ* (critiques), and *mu'araḍa* (counter-indication). This is because [an objection] either implies concession (*taslīm*) of the

63 For details, see Young, "Molla Fenârî," 535–540, and citations of the *Fuṣūl al-Badā'ī* therein.

64 Abū 'Abd Allāh Badr ad-Dīn Muḥammad az-Zarkashī, *Al-Baḥr al-Muḥīṭ fī Uṣūl al-Fiqh*, 6 vols., ed. by 'Abd al-Qādir 'Abd Allāh al-Ānī et al. (Kuwait: Wizārat al-Awqāf wa-sh-Shu'ūn al-Islāmiyya, 1992), 5:260–366; Abū 'Abd Allāh Badr ad-Dīn Muḥammad az-Zarkashī, *Al-Baḥr al-Muḥīṭ fī Uṣūl al-Fiqh*, 4 vols., ed. by Muḥammad Muḥammad Tāmīr (Beirut: Dār al-Kutub al-'Ilmiyya, 2000), 4:231–318.

65 Az-Zarkashī, *al-Baḥr al-Muḥīṭ*, al-Ānī ed., 5:260; az-Zarkashī, *al-Baḥr al-Muḥīṭ*, Tāmīr ed., 4:231.

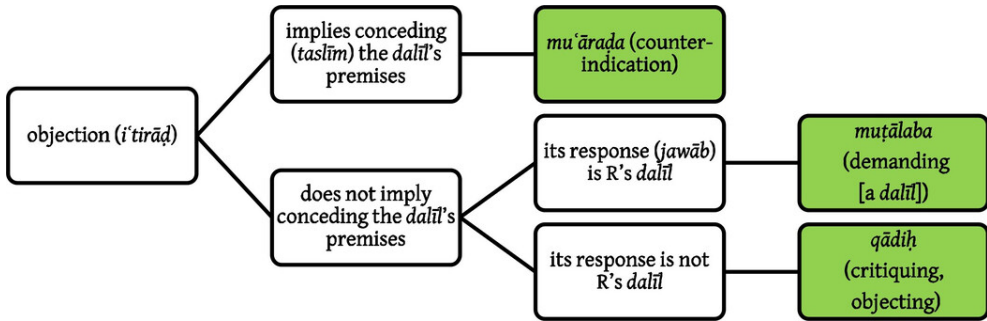


FIGURE 12.1 Az-Zarkashī's passive quality-based derivation theory

premises of [R's] indicant (*dalīl*) or not. The first [i.e., what implies conceding the premises] is a *mu'āraḍa*. The second: either its response (*jawāb*) is that [same] indicant, or not. The first [i.e., what is responded to with the indicant] is a *muṭālaba*, and the second is a *qāḍiḥ*.

This may be diagrammed as in figure 12.1.

A little further on in his prefatory discussions, az-Zarkashī explains that this three-part division of objections into *mu'āraḍa*, *muṭālaba*, and *qāḍiḥ* reflects a more ancient method,⁶⁶ as opposed to the two-part division into *man'* and *mu'āraḍa* favored by contemporaries; and he responds to what was evidently a common argument against the latter model:⁶⁷

What we have mentioned of their division into three types is what the predecessors (*al-mutaqaddimūn*) mentioned, but the latter-day scholars (*al-muta'akhhirūn*) say they derive from two: *man'* (denial) and *mu'āraḍa* (counter-indication). This is because when the response (*jawāb*) to *man'* and *mu'āraḍa* is attained, [R's] indicant (*dalīl*) is completed, and no scope [of operation] remains to the one objecting (*al-mu'tariḍ*).⁶⁸ And if one says: 'The doctrine that they derive from *man'* and *mu'āraḍa* is denied (*mamnū'*), because *mu'āraḍa* [itself] belongs to the set of objections (*i'tirāḍāt*)—so this will lead to the division of something into itself

66 Cf. al-Bājī's subsumption theory, below, with its three master-categories of *muṭālaba*, *i'tirāḍ*, and *mu'āraḍa*.

67 Az-Zarkashī, *al-Baḥr al-Muḥīṭ*, al-Ānī ed., 5:261; az-Zarkashī, *al-Baḥr al-Muḥīṭ*, Tāmir ed., 4:231–232.

68 In other words, if R's *dalīl*—by way of successful, legitimate responses—survives the subtypes of *man'* and *mu'āraḍa* which Q brings against it, then there is no further legitimate objection type to be brought; R's *dalīl* will be complete, and Q will have to concede.

and something else, and to [the fact] that something is included under itself, with the necessary entailment of *mu'āraḍa* being subsumed under *mu'āraḍa*.' Then we will say: 'If what is divided into these types is unqualified counter-indication (*muṭlaq al-mu'āraḍa*) and unqualified denial (*muṭlaq al-man'*), then this is not entailed—because the more general does not entail the more specific.'

In other words, if we understand the *man'* and *mu'āraḍa* in the latter-day division to be the “unqualified” (*muṭlaq*) categories, then there is no conflict in subsuming beneath them the subtypes of *man'* and *mu'āraḍa* which are listed among the more specific objections. Note that in this way, az-Zarkashī's response here justifies our very conception of “master-category” objections. As master-categories, we are considering *man'* / *mumāna'a*, *naqd* / *munāqada*, and *mu'āraḍa* in their absolute, unqualified (*muṭlaq*) sense, thus easily subsuming their more specific subtypes, whether or not these wear their master-category's name (as they do in, e.g., *man' al-ḥukm fī l-aṣl*, and *al-mu'āraḍa fī l-far'*).

Whatever they may teach us with regard to reduction, however, it is clear that such passive quality-based derivation theories—relying merely on the mention of singular, and not necessarily illuminating, differentiae—do not teach us much about the master-categories with which they conclude. It is the active model, guiding us from broader argumentative foci to named dialectical categories, which teaches us more about the natures of master-category objections, and often subtypes and illicit moves as well.

These active quality-based derivation theories also seem the more ancient; we find partial examples already in ad-Dabūsī's *Taqwīm al-Adilla*⁶⁹—again refined and made more systematic by al-Bazdawī. A more comprehensive example may be pieced together from two parts of al-Bazdawī's *Kanz al-Wuṣūl*.⁷⁰ At the start of his chapter on modes for rebutting them, al-Bazdawī asserts that legal causes are either *mu'aththira*, that is, established as causally-efficient by way of univocal scripture (*naṣṣ*) or scholarly consensus (*ijmā'*), or they are *ṭardiyya*, merely indicated by co-presence (*ṭard*). The first and subsequent chapters are for objecting to the efficient causes (*'ilal mu'aththira*), while the modes for rebutting the merely co-present causes (*'ilal ṭardiyya*) are taken up in the penultimate chapter of al-Bazdawī's section on *qiyās*-oriented dialectic. The whole apparatus may be boiled down to the diagram shown in figure 12.2.

69 See ad-Dabūsī, *Taqwīm al-adilla*, 336–338.

70 Namely, the start of the opening *Bāb wujūh daf' al-'ilal* (al-Bazdawī, *Kanz al-Wuṣūl*, 627 f.), for rebutting the *'illa mu'aththira*, and the start of the *Bāb wujūh daf' al-'ilal aṭ-ṭardiyya* (al-Bazdawī, *Kanz al-Wuṣūl*, 655–667).

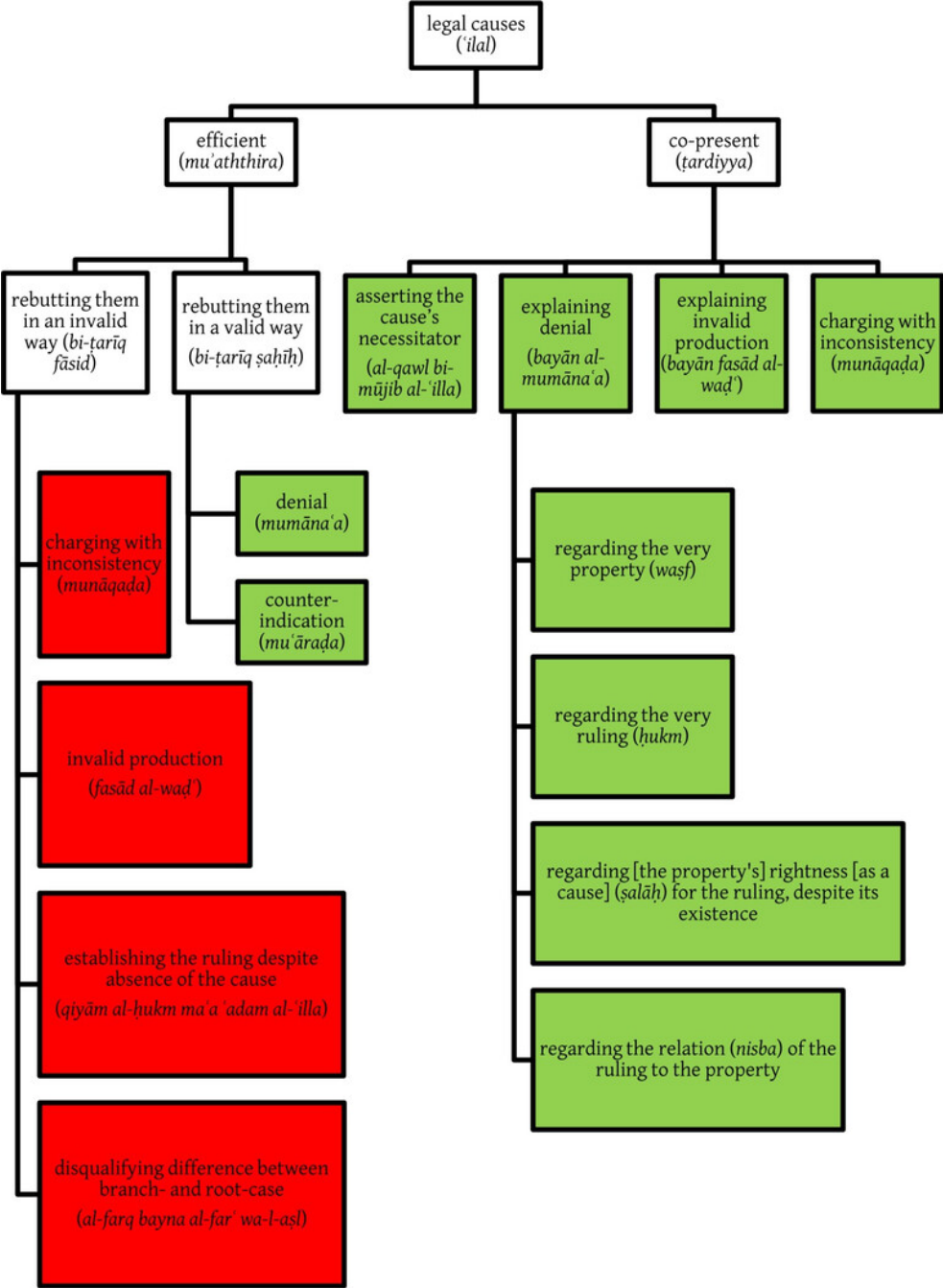


FIGURE 12.2 Al-Bazdawī's active quality-based derivation theory for efficient and co-present legal causes

In brief, if Q is rebutting an efficient legal cause, then he will do so in a manner that is either invalid (*fāsīd*) or valid (*ṣaḥīḥ*). If he proceeds invalidly, he will either charge inconsistency (*munāqaḍa*) or invalid production (*fasād al-waḍʿ*), neither of which makes sense against a legal cause whose efficiency is pre-established by Qurʾān, Sunna, or Ijmāʿ; or he will establish the ruling's presence elsewhere without the cause (*qiyām al-ḥukm maʿa ʿadam al-ʿilla*), which is harmless because co-absence (*ʿaks*) is not a condition for the cause's validity; or he will point out a disqualifying difference between the branch- and root-case (*al-farq bayna l-farʿ wa-l-aṣl*), which is problematic from multiple perspectives.⁷¹ If Q proceeds to rebut an efficient legal cause validly, however, he will either bring a *mumānaʿa* or a *muʿāraḍa*, which objections, among other concerns, are the focus of al-Bazdawī's subsequent chapters.⁷²

It is important to note that early Ḥanafīs like al-Bazdawī were loathe to accept instances of *qiyās* incorporating only *ʿilal ʿardīyya*, that is, instances of *qiyās* based on legal causes whose efficiency was merely indicated by co-presence, rather than established by scripture or consensus. Such being the case, what we really have in al-Bazdawī's theory is only two licit categories of objection: *mumānaʿa* and *muʿāraḍa*, which he further subdivides into modes and species in following chapters. Like ad-Dabūsī, however, al-Bazdawī nevertheless includes objections for the merely co-present legal cause—the discussion of such being deemed necessary for debating its supporters.

Thus, returning to what is distilled in figure 12.2, if Q is rebutting a legal cause justified by mere co-presence (*ʿard*), then he might first assert the self-same necessitator of R's legal cause (*al-qawl bi-mūjib al-ʿilla*), in this way compelling R to accept what his own causal-justification (*taʿlīl*) actually entails (as opposed to R's desired ruling). Barring that, Q might explain his denial (*bayān al-mumānaʿa*) of R's causal-justification, whether with respect to the supposedly causal property (*waṣf*) itself, the ruling (*ḥukm*) itself, the property's rightness (*ṣalāḥ*) for the ruling, or the ruling's relation (*nisba*) to the property. Barring that, Q might explain the invalid production (*bayān fasād al-waḍʿ*) of R's *qiyās*, by showing that its shared properties are established elsewhere to produce the opposite effect, or he might show its inconsistency (*munāqaḍa*) with a counter-example wherein the supposed legal cause is present without the ruling.

71 For details, see al-Bazdawī, *Kanz al-Wuṣūl*, 628.

72 As for *mumānaʿa*, al-Bazdawī's analysis (*Kanz al-Wuṣūl*, 629–630) renders it into the four modes presented above as our first example of premise-opposition, species-derivation theory; and as for *muʿāraḍa*, he derives multiple species and subspecies (Bazdawī, *Kanz al-Wuṣūl*, 631–637) which we will unpack below as another instance of active quality-based derivation.

In the end, al-Bazdawī's licit objections boil down to types of *mumāna'a* and *mu'āraḍa*, presented alongside *munāqaḍa*, additional types of *mumāna'a*, *al-qawl bi-l-mūjib*, and *fasād al-waḍ'*, with the understanding that these latter are only for use against illicit, merely co-present legal causes. And thus we find a very early Ḥanafī foundation for master-category objection theory, with only a handful of primary objection types. Not surprisingly, it was also Ḥanafī dialecticians—especially Rukn ad-Dīn al-'Amīdī (d. 615/1218) and Burhān ad-Dīn an-Nasafī (d. 687/1289)—who carried forward the three most universal of these objection types: *mumāna'a*, *munāqaḍa*, and *mu'āraḍa* into their *jadāl* and *khilāf* theory, and thus onward into the early *ādāb al-baḥth*.

Apart from deriving primary or master-category objections, active quality-based derivations may also be perceived in subsequent elaborations of subtypes or formulations of typologies. Al-Bazdawī's analysis of counter-indication, which receives its own chapter (*bāb al-mu'āraḍa*), offers a prime example. As noted, with al-Bazdawī the only licit legal cause is the efficient one (*'illa mu'aththira*), and the only licit objections which may be brought against it are *mumāna'a* and *mu'āraḍa*. We have seen that he further renders *mumāna'a* into four modes in an early example of premise-opposition, species-derivation. His extensive elaboration on *mu'āraḍa*, however, best matches the model of active quality-based derivation, as in figure 12.3.

In sum, if Q is counter-indicating R's efficient-cause-based *qiyās*, then he is doing so either by way of pure *mu'āraḍa* or by that *mu'āraḍa* which in fact involves or entails a kind of canceling inconsistency (*munāqaḍa*), and which therefore constitutes the move known as *qalb* (reversal). If it is the latter, then Q will either reverse the cause and effect—that is, the *'illa* and *ḥukm*—of R's *qiyās* (species 1 *qalb*), or he will flip the property (*waṣf*) which served as evidence (*shāhid*) against him such that it becomes evidence for him (species 2 *qalb*). At this point, since the related category of *'aks* (reflection / co-absence) is sometimes used interchangeably with *qalb*, al-Bazdawī briefly reviews it, even though it belongs properly to a different domain (*bāb*)—its two species in fact constituting nothing more than a mode of preponderance-giving (*tarjīḥ*) and an invalid *mu'āraḍa* or “weak” mode of *qalb*. On the one hand, having made the case for the co-presence of his ruling and legal cause in one root-case, R can “reflect it back along the same track” by showing their co-absence in another root-case (species 1 *'aks*), thus lending further weight to his legal cause's purported efficiency. Hence, species 1 *'aks* is merely a mode of preponderance-giving (*tarjīḥ*). On the other hand, with R having presented his *qiyās al-'illa*, Q can “reflect it back along the opposite track.” First Q confirms what R has claimed in terms of the property shared by root-case and branch-case, but then he points out that the root-case's ruling must therefore be linked in co-absence

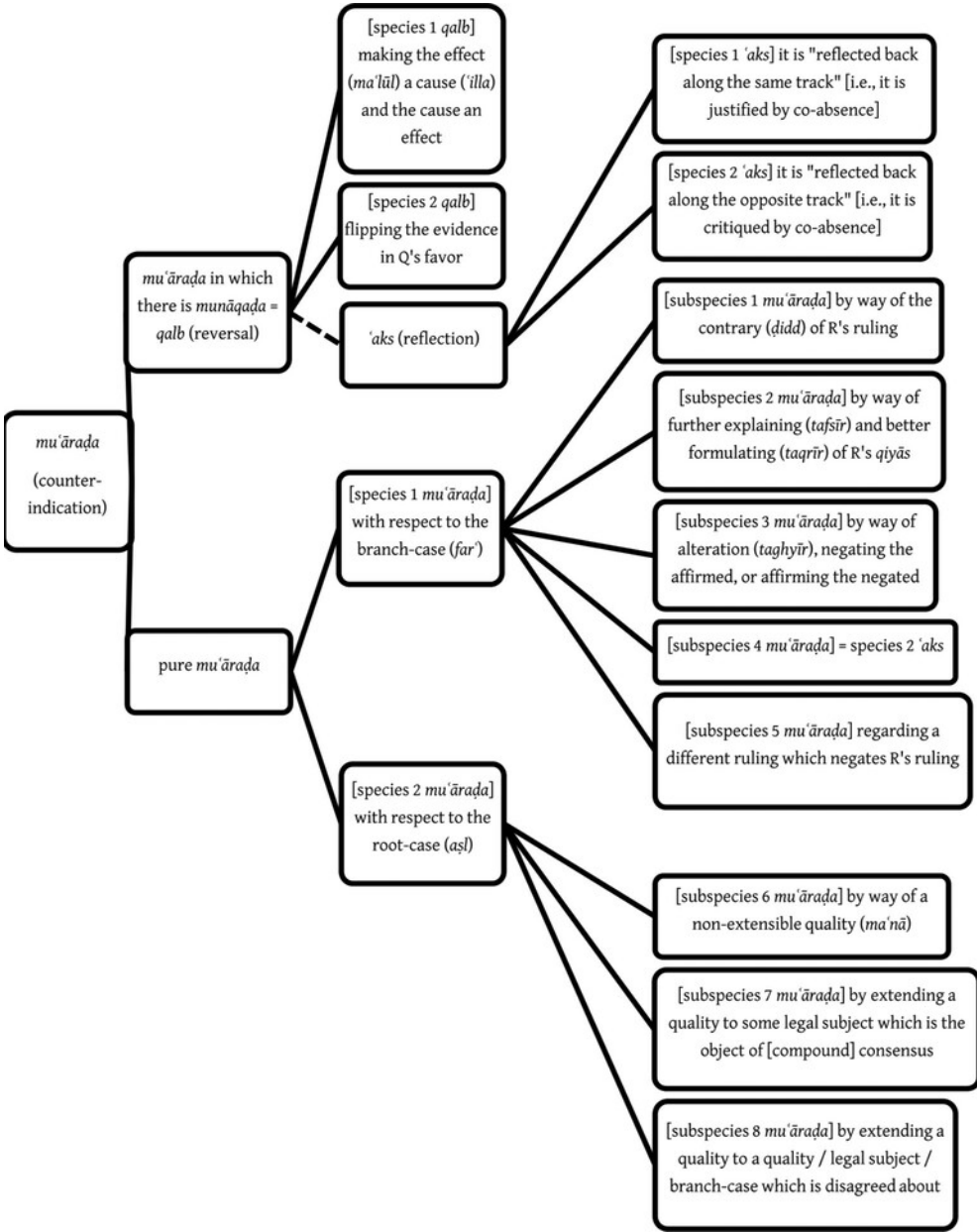


FIGURE 12.3 Al-Bazdawī's active quality-based derivation theory for species and subspecies of *mu'araḍa*

to the opposite of what is known to hold true for the branch-case. That is, rulings Y and Z are known to have equivalence (*istiwā'*) in terms of co-presence and co-absence, and R's root-case has ruling not-Z (and thus, must also have not-Y), while the branch-case is known to have ruling Y (and thus can only have ruling Z).⁷³ Hence, species 2 '*aks*' acts either as an invalid *mu'āraḍa* or "weak" mode of *qalb*.

Excepting these species of '*aks*', the above modes are for when Q counter-indicates with a *mu'āraḍa* entailing a kind of *munāqaḍa*. As for "pure *mu'āraḍa*," Q will focus either on the legal cause in R's branch-case (species 1 *mu'āraḍa*) or the legal cause in R's root-case (species 2 *mu'āraḍa*). If the former, which is licit, then he will counter-indicate either (1) by bringing a new indicant for the contrary (*didd*) of R's ruling; or (2) by better explaining and formulating R's *qiyās* such that it supports him; or (3) by making certain negations and affirmations which alter R's *qiyās* in his favor; or (4) by employing that invalid *mu'āraḍa* or "weak" *qalb* which is species 2 '*aks*';⁷⁴ or (5) by aiming at another ruling besides R's, but which nevertheless entails the negation of R's ruling. But if Q focuses on the legal cause in R's root-case, which is not licit,⁷⁵ then he will counter-indicate either (6) by way of a different, non-extensible quality (*ma'nā lā yata'addā*), which is a patently invalid move;⁷⁶ or (7) by extending a different

73 Put differently, R says: The ruling of far' B is not-Z, because it is an X, like aṣl A. But Q objects, saying: Because far' B is an X, the co-absence and co-presence of Y and Z must be preserved, like aṣl A. And we know by consensus that Y holds true for far' B, therefore Z must also hold true for far' B (the opposite of R's ruling, which is not-Z).

74 As al-Bazdawī noted (*Kanz al-Wuṣūl*, 634), species 2 '*aks*' "is weak (*ḍa'if*) among the modes of *qalb*, because when [Q] brought another ruling (*ḥukm*), the inconsistency-charge (*munāqaḍa*) disappeared, and for that reason it does not really belong to this domain (*bāb*) [i.e., it does not belong to the species '*mu'āraḍa* in which there is *munāqaḍa*']." If my understanding is correct, the point is that Q has not counter-indicated in a way which shows R's '*illa* X existing without R's *ḥukm* not-Z, which would constitute *munāqaḍa*. Rather, Q introduced a new *ḥukm* (Y), linked in co-absence with Z in the root-case, but linked in co-presence with Z in the branch-case.

75 As the commentator as-Sighnāqī reminds us, these *mu'āraḍas* with respect to the *aṣl* are all invalid, because: "the mention of another '*illa* in the *aṣl* does not negate the causal-justification (*ta'līl*) of what [R] mentioned, due to the possibility that in the *aṣl* there are two properties (*waṣfān*) [such that] the ruling is extensible to branch-cases by way of one of the two properties without the other" (Ḥusām ad-Dīn Ḥusayn b. 'Alī as-Sighnāqī, *Al-Kāfī sharḥ al-Bazdawī*, 5 vols., ed. by Fakhr ad-Dīn Sayyid Muḥammad Qānat [Riyadh: Maktabat ar-Rushd, 2001], 1889).

76 That is, Q will say that the real legal cause is X, and then attempt to extend it to the contended branch-case even though it is non-extensible. See explanation in as-Sighnāqī, *al-Kāfī*, 1889.

quality to a legal subject enjoying compound consensus, which is also invalid;⁷⁷ or (8) by extending a different quality to a quality / legal subject / branch-case which is disagreed about (*mukhtalif fthi*),⁷⁸ which some jurists accept as valid, but which al-Bazdawī and commentators reject.⁷⁹

Besides such elaborations of subtypes, we should note that what I have referred to as “species descriptions,” which play a central role in premise-opposition, species-derivation theory (represented by al-Ījī and Molla Fenārī above), also bear the hallmarks of active quality-based derivations. As we have seen, al-Ījī’s first and seventh species consist in only one “genus” of objection (*istifsār* and *al-qawl bi-l-mūjib*, respectively). His second through sixth species, however, containing multiple genera, are described in ways which lend themselves easily to quality-based derivation models, such as follow in figures 12.4–12.8.

The second species of objections (*i’tirāḍāt*) is by considering [R’s] capability of drawing proof (*istidlāl*) by way of *qiyās* with respect to this issue (*mas’ala*). For if his capability of [doing] *qiyās* is denied absolutely (*muṭ-laqaṇ*), then [the objection] is invalid consideration (*fasād al-i’tibār*)—as though [Q] claims that *qiyās* is not [at all] considered for that issue. But if [Q] denies him a specific *qiyās*, then it is invalid production (*fasād al-waḍ’*)—as though [Q] claims that [R] posited for the issue a *qiyās* which is not validly posited for it.⁸⁰

The third species of objections is what is brought against the first premise of [R’s] *qiyās*, namely: the claim of the root-case’s ruling. There is no scope for *mu’āraḍa* here, because it would be a usurpation (*ghaṣb*) of

77 Because Q neither negates R’s legal cause, nor contests R’s ruling. In as-Sighnāqī’s illustration (*al-Kāfī*, 1889), Ḥanafis and Shāfi’is have consensus that the rules of *ribā* apply to the legal subject (*faṣl*) of rice and sesame seeds, but for Ḥanafis it is in consideration of dry measure and genus, and for Shāfi’is it is in consideration of edibility. So if, when the Ḥanafī R justifies his ruling on rice and sesame seeds on the basis of dry measure and genus, the Shāfi’ī Q counter-indicates on the basis of edibility, he will in no way have contested R’s ruling, but merely extended his quality (edibility) to a matter already resolved by consensus.

78 In the editions, al-Bazdawī is recorded as saying [أَن يَتَعَدَى إِلَى مَعْنَى مُخْتَلَف فِيهِ], but in the Qānat ed., as-Sighnāqī’s lemma reads [أَن يَتَعَدَى إِلَى فِصْلٍ مُخْتَلَف فِيهِ], to which as-Sighnāqī says: [أَيُّ إِلَى فِرْعٍ مُخْتَلَف فِيهِ].

79 For further explanation, see al-Bazdawī, *Kanz al-Wuṣūl*, 636–637; and as-Sighnāqī, *al-Kāfī*, 1890–1892.

80 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:477.

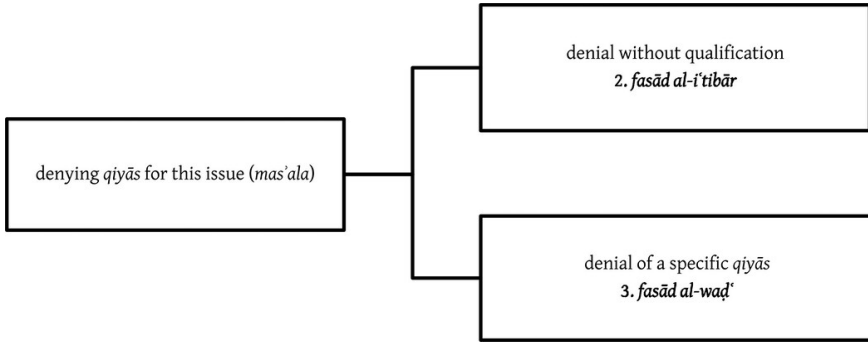


FIGURE 12.4 Al-Ījī's second species description as active quality-based derivation

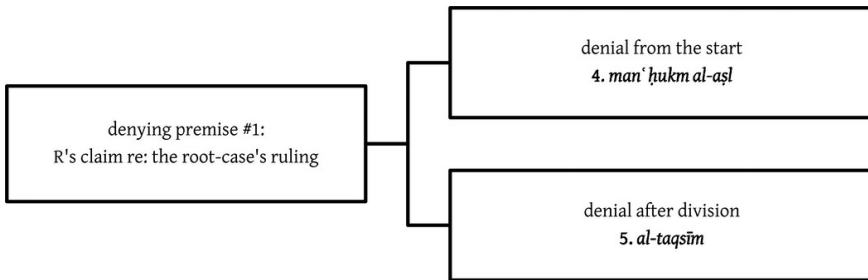


FIGURE 12.5 Al-Ījī's third species description as active quality-based derivation

the role of proof-seeking (*istidlāl*), and the proof-seeker (*mustadill*) would turn into the objector (*mu'tariḍ*), and the objector into the proof-seeker, with respect to the same *munāẓara* case. That is something [dialecticians] don't allow among themselves, due to the spread of contentious disputation (*jidāl*), and so that the aim of *munāẓara* does not slip away. Thus, only denial (*man'*) remains [as an option], either from the start (*ibtidā'an*), or after division [of R's equivocal expression], in which case it is called division (*taqṣīm*).⁸¹

The fourth species of objections is what is brought against the second premise of *qiyās*, namely, [R's] assertion: 'The ruling in the root-case is causally justified (*mu'allal*) by such-and-such a property (*wasf*).' The critique (*qadh*) is either with respect to [the property's] existence (*wujūd*) or with respect to its causation (*'illiyya*), and the second [disjunct]⁸² is

81 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:484.

82 That is: "with respect to its causation."

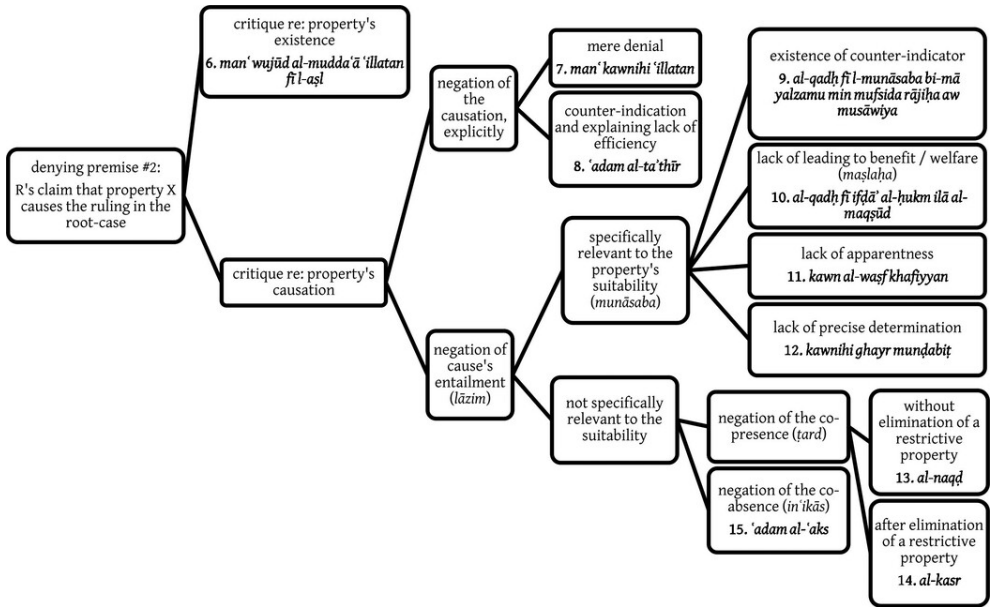


FIGURE 12.6 Al-Ījī's fourth species description as active quality-based derivation

either a negation of the causation explicitly or a negation of its entailment (*lāzim*). The first [disjunct]⁸³ is either a mere denial (*man' mujarrad*) or a *mu'araḍa* and explanation of lack of efficiency (*bayān 'adam at-ta'thīr*), while the second [disjunct]⁸⁴ is either specifically relevant to suitability (*munāsaba*) or not. The specifically relevant is in accordance with the conditions (*shurūṭ*) of the suitable property (*munāsib*)—namely: leading to human welfare (*ifḍā' ilā l-maṣlaḥa*), its not having a counter-indicator (*'adam al-mu'arīḍ lahā*), apparentness (*ẓuhūr*), and precise determination (*inḍibāṭ*)—and it is four [objections], namely: the negation of each one of [these conditions]. What is not specifically relevant [to suitability], in view of the legal cause's condition (*sharṭ*), and being co-present (*iṭṭirād*), and being co-absent (*in'ikās*), is either negation of the co-presence (*ṭard*)—such being, after elimination of a restricting property, breaking (*kasr*), and without it, inconsistency (*naqd*)—or negation of the being co-absent (*naḡt l-in'ikās*).

They have become ten. Negation for all [types of purported legal causes]: denying the cause's existence (*man' wujūd al-illa*), denying its

83 That is: "negation of the causation explicitly."

84 That is: "negation of its entailment."



FIGURE 12.7 Al-Ījī's fifth species description as active quality-based derivation

causation (*man' ʿilliyatihā*), its lack of efficiency (*ʿadam ta'thīrihā*). Then with respect to the suitable property (*munāsib*), specifically: lack of leading [to human welfare] (*ʿadam al-ifḍā'*), existence of a counter-indicator (*wujūd al-mu'āriḍ*), lack of apparentness (*ʿadam aẓ-ẓuhūr*), lack of precise determination (*ʿadam al-inḍibāṭ*). With respect to all [types, again]:⁸⁵ inconsistency (*naqḍ*), breaking (*kasr*), lack of co-absence (*ʿadam al-'aks*).⁸⁶

The fifth species of objections is what is brought in considering the third premise, namely: [R's] claim of the legal cause's equal existence in the

85 NB: at-Taftāzānī explains (*Hāshiyat*, 3:490) why al-Ījī went from three covering all types, to four just for the *munāsib*, then back to another three covering all types, rather than saying six for all and four for the *munāsib*. In short, it was to draw attention to the fact that the final three trace back to negating what is entailed (*lāzim*) of the causation (rather than negating the causation explicitly), like the four for the *munāsib*, and unlike the first three.

86 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:488–489.

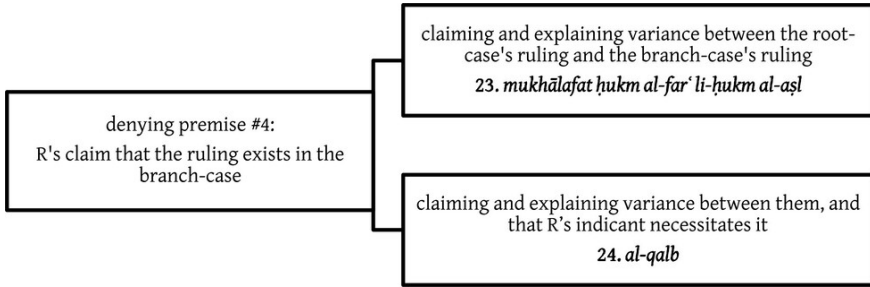


FIGURE 12.8 Al-Ījī's sixth species description as active quality-based derivation

branch-case. [The fifth species] is by rebutting its existence either by way of *man'* or by way of *mu'āraḍa*, or by rebutting the equivalence by considering the addition of a condition (*shart*) in the root-case, or an impeding factor (*māni'*) in the branch-case, which is called disqualifying difference (*farq*), or by considering the legal cause itself due to disagreement (*ikhti-lāf*) over the precise determiner [of the rule] (*ḍābiṭ*) or the human welfare (*maṣlaḥa*). And these are five [objections].⁸⁷

The sixth species of objections is what is brought against the fourth premise, namely, [R's] saying: 'Thus, the ruling exists in the branch-case.' Since he has furnished an indicant (*dalīl*) for it, there is no path to denying it. On the contrary, [Q] claims contrariety (*mukhālafa*) [between the rulings of root-case and branch-case] and explains it, either restricting himself to that, or claiming: 'Your indicant necessitates this,' which is called reversal (*qalb*).

Active quality-based derivation theory can thus be found justifying the delineation of subtypes as well as master-categories. Returning to the latter, we should also note that theorists sometimes take a somewhat different approach. Al-Ījī provides two excellent examples, with what we might call first- and second-tier quality-based derivations. First, when Ibn al-Ḥājjib opens his section on *qiyās*-oriented dialectic by asserting that all objections (*i'tirāḍāt*) go back to *man'* and *mu'āraḍa*, al-Ījī explains:

That is because the goal of the proof-seeker (*mustadill*) [R] is compelling [Q's] concession (*ilzām*) by way of affirming what he claims by way of

87 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:533.

his indicant (*dalīl*), while the goal of the objector (*mu'tarīd*) [Q] is not being compelled to concede (*'adam al-iltizām*), by way of denying [R] his affirmation by way of [his indicant]. And affirmation by way of [the indicant] is by the validity of its premises, in order that it be right for evidence (*shahāda*), and by its being free of counter-indicant (*mu'ārid*), in order that its evidence be implemented and the ruling (*ḥukm*) follow from it. So rebuttal (*dafʿ*) is by way of destroying one of these two. And destroying the evidence of the indicant is by critiquing (*qadh*) its validity by denying (*manʿ*) one of its premises and demanding the indicant for it (*ṭalab ad-dalīl 'alayhā*), while destroying the implementation of its evidence is by counter-indicating (*mu'āraḍa*) with what opposes it [equally] and denies the affirmation of its ruling. What is not of these two categories has no connection to the aim of objection (*i'tirād*), and is neither tolerated, nor paid any heed, nor should one bother to respond to it.⁸⁸

In sum (see figure 12.9), R's goal is to compel Q's concession; Q's goal is to not be so compelled. R's means is to affirm his claim with a *dalīl*; Q's means is to deny that affirmation by that *dalīl*. R's success is first by way of the validity of his *dalīl*'s premises and second by way of its being free of counter-indicant so that these premises may prove conclusive; Q's success is first by way of the *manʿ* of the premises of R's *dalīl* and demanding additional *dalīls* for them, and second by way of a countering *mu'āraḍa* which blocks R's *dalīl* from proving R's ruling. Thus al-Ījī's style of active quality-based derivation theory here pits R's actions against Q's at a higher (first-tier) level, producing the highest-level objection categories of *manʿ* and *mu'āraḍa*.

Following a brief digression as to why one does not respond to invalid questions, al-Ījī next zooms in on R's justification and Q's critique, deriving the core trio of master-category objections: *manʿ*, *naqd*, and *mu'āraḍa*.

Know that a premise might be denied in a particular way (*tafṣīlan*), which is clear enough,⁸⁹ and it might be denied collectively (*ijmālan*). The method [of collective denial] is that one say: 'If the premises of your indicant (*dalīl*) were valid, while they apply in such-and-such a case,⁹⁰ then the ruling (*ḥukm*) would necessarily be affirmed in [that case]—but it is not affirmed [in it].' This is [the objection of] inconsistency (*naqd*). Furthermore, if the premise is denied, and the proof-seeker (*mustadill*) [R]

88 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:473.

89 That is, Q simply says: "We do not concede premise X, what is your *dalīl* for that?"

90 That is, the counter-example case brought by Q to show the inconsistency of R's *dalīl*.

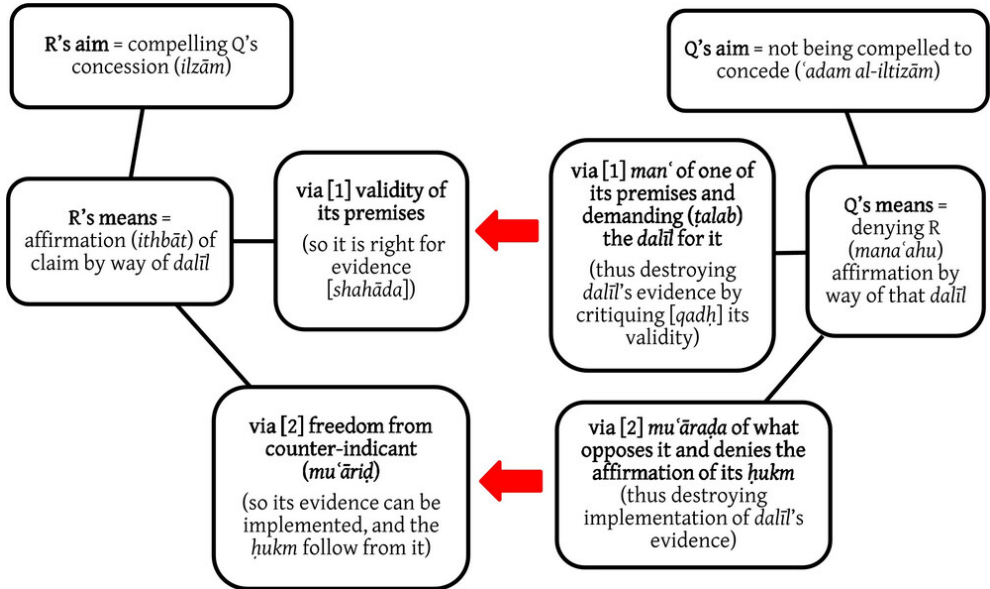


FIGURE 12.9 Al-Ījī's first-tier active quality-based derivation

rises to furnish an [additional] indicant,⁹¹ then the objector (*mu'tarīḍ*) [Q] can bring a denial (*man'*) of the premises of [R's additional] indicant, and a counter-indication (*mu'āraḍa*) of his [own] indicant against them. What the author [Ibn al-Ḥājjib] intended by *man'* and *mu'āraḍa* is what comprises all of that.⁹²

Here (see figure 12.10) we learn that Q may deny *tafṣīlan*—that is, focusing on a particular premise of R's *dalīl*—which is mere *man'*, or he may deny R's *dalīl* “collectively,” which is *naqḍ*;⁹³ and even if he concedes R's premises in the end, he may still counter-indicate with his own *dalīl*, which is *mu'āraḍa*. Thus al-Ījī at once explains what Ibn al-Ḥājjib meant when he said that all goes back to *man'* and *mu'āraḍa* (with *naqḍ* being a kind of “collective” *man'*) and also derives, at a more detailed (second-tier) level, the core trio of master-category objections.

91 That is, an additional *dalīl* in support of the denied premise.

92 Al-Ījī, *Sharḥ Mukhtaṣar al-Muntahā*, 3:473.

93 Compare this with the *ādāb al-baḥṭh* objections of particular inconsistency (*naqḍ tafṣīlī*) and collective inconsistency (*naqḍ ijmālī*), with the former synonymous with *munāqaḍa* and *man'*, a distinction which goes back at least as far as as-Samarqandī (*Risāla fī Ādāb al-Baḥṭh*, 78).

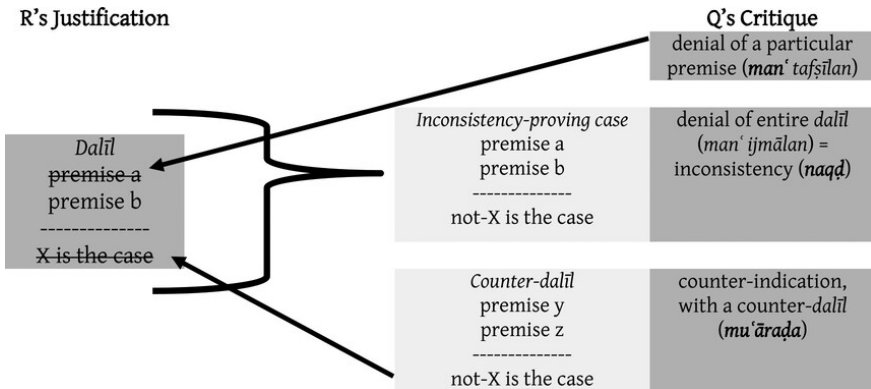


FIGURE 12.10 Al-Ījī's second-tier active quality-based derivation

Active quality-based derivations of the master-categories attained a wonderful clarity and comprehensiveness with Molla Fenārī.⁹⁴ Once again drawing on his predecessors, he synthesized and refined their theories and produced something new which, in my opinion, is as elegant as it is succinct. In the “preliminaries” (*tamhīdāt*) of his *qiyās*-oriented dialectic in the *Fuṣūl al-Badā'ī*, he says:⁹⁵

The fourth [preliminary] is that objection (*i'tirāḍ*) is either demanding explanation (*istifsār*) or denial (*man'*), which [latter] is either regarding the indicant (*dalīl*) or the indicated (*madlūl*). Regarding the indicant in a particular way (*taṣṣīlan*), it is denial (*mumāna'ā*) with or without corroboration (*sanad*), not with a drawing of proof (*istidlāl*) for the negation of what was claimed (*al-mudda'ā*), for this is usurpation (*ghaṣb*) ...

which was not countenanced by anyone except al-ʿAmīdī; and, it is said: ‘usurpation is denial of the premise along with a drawing of proof for its negation,’ but al-ʿAmīdī’s drawing of proof for [usurpation’s] acceptance points to the first [interpretation]⁹⁶ ...

94 Note, however, that in the *ādāb al-baḥṭh* genre he is preceded in this by as-Samarqandī. The second *faṣl* of as-Samarqandī’s *Risāla*, “on the proper order of inquiry” (*fī tartīb al-baḥṭh*), consists mostly in a detailed set of active quality-based derivations: one for the questioner’s moves and one for the respondent’s, followed by a detailed example in which all moves are illustrated (Samarqandī, *Risāla fī ʿĀdāb al-Baḥṭh*, 77–80 [quality-based derivations for Q and R], 81–87 [illustrative example]).

95 Al-Fanārī, *Fuṣūl al-badā'ī*, Ismāʿīl ed., 2:380–381; Fanārī, *Fuṣūl al-Badā'ī*, Hawsāwī ed., 224.

96 That is, that *ghaṣb* constitutes Q’s denial accompanied by his drawing proof for the negation of what R claimed (i.e., R’s ruling), not Q’s denial of a premise in R’s indicant accompanied by his drawing proof for the negation of that premise.

and [regarding the indicant] in a collective way (*ijmālan*), it is inconsistency (*munāqaḍa*) based on detachment [of indicant from indicated] (*takhalluf*), or on the entailment of something absurd (*luzūm al-muḥāl*). And regarding the indicated (*madlūl*): not [a denial] without qualification (*muṭlaqan*)—because the upshot of that is demanding an indicant (*ṭalab ad-dalīl*), and that requirement has been satisfied—but rather with the furnishing of an indicant for its contrary / contradictory (*khilāf*), as a counter-indication (*mu'āraḍa*). Other than this is obstinate contentiousness (*mu'ānada*). These four may be brought, with their conditions, against any drawing of proof (*istidlāl*), and these twenty-three or twenty-five revert to them.⁹⁷

Setting aside the digression on al-'Amīdī's alleged tolerance of usurpation (*ghaṣb*),⁹⁸ the gist of this compact derivation is as follows (see figure 12.11). Q's objection (*i'tirāḍ*) is either demanding explanation (*istifsār*) or denial (*man'*)—Molla Fenārī's two highest-tier master-category objections, and a departure from Ibn al-Ḥājj's highest-tier of *man'* and counter-indication *mu'āraḍa*. The category of *istifsār* is self-contained. As for Q's *man'*, it is either against R's indicant (*dalīl*) or against what it indicates (*madlūl*). If against R's indicant then it denies either in a particular way (*tafṣīlan*) or collectively (*ijmālan*). If in a particular way, then it is either without a counter-indicant for the negation of R's ruling, and thus *mumāna'a*—whether with or without corroboration (*sanad*)—or it is with a rule-negating counter-indicant and therefore, at this early stage in debate, illicit usurpation (*ghaṣb*). If, on the other hand, Q's denial of R's indicant is in a collective way (*ijmālan*), then it is a charge of inconsistency (*munāqaḍa*) either based on a proven detachment (*takhalluf*) of R's cause / indicant from its purported effect / thing indicated, or based on R's indicant entailing an absurdity (*luzūm al-muḥāl*). And as for when Q's denial is against what R's indicant indicates (*madlūl*)—namely, R's ruling (*ḥukm*)—then Q's denial is either with a counter-indicant, and thus, at this later stage of debate a licit *mu'āraḍa*, or it is without a counter-indicant, and thus (with R's indicant already conceded) mere obstinate contentiousness (*mu'ānada*).

97 That is, these four master-category objections of *istifsār*, *mumāna'a*, *munāqaḍa*, and *mu'āraḍa* subsume the twenty-three / twenty-five objection types which Molla Fenārī, drawing on predecessors like Ibn al-Ḥājj and commentators, proceeds to review in detail.

98 Al-'Amīdī seems to have attained a measure of infamy for his tolerance of *ghaṣb*, which is mentioned in a number of sources, some of which attempt to reproduce his argument. See Young, "Molla Fenārī," 527–528, and sources cited therein.



FIGURE 12.11 Molla Fenârî's active quality-based derivation

In this way, with all objection possibilities exhausted, Molla Fenârî has artfully left us with only four master-category objections of *istifsār*, *mumāna'a*, *munāqaḍa*, and *mu'āraḍa*, along with two illicit moves of *ghaṣb* and *mu'ānada*.

5 Metatheory 3. *Qiyās*-Oriented Objections Subsumption Theory

However individual objections were derived or justified, it is theories expounding *families* of objections which, in my view, suggest most directly the mechanism behind the ascendancy of master-category objections in post-classical Islamic dialectics, namely, a move to greater abstraction, prompted by a desire for an economical yet truly universal disputation theory. I have chosen to call the related metatheory “*qiyās*-oriented objections subsumption theory,” and

it is meant to cover those instances when a theorist asserts (and sometimes argues) that all of a pluralistic set of named *qiyās*-oriented objection types fall under one or another of a very limited set of master-category objections.

Such theories are not a later development, but go back at least to the “classical” juristic dialectic of the fifth/eleventh century, with Abū l-Walīd al-Bājī (d. 474/1081) providing us a prime example in his *Kitāb al-Minhāj fī Tartīb al-Hijāj*—the very title of which, with its element of *tartīb* (proper ordering), is suggestive of the meta-theorizing undertaken in this work. First we should note that in his prefatory elaboration on the five dialectical questions,⁹⁹ in particular the fifth question, whereby the entire apparatus of critique (*qadh*) comes into play, al-Bājī subdivides valid critique itself into three master categories.

Chapter on the question in the way of critique (*as-suʿāl ʿalā wajh al-qadh*) and the response (*jawāb*) to it. The question in the way of critique for the indicant (*dalīl*) is according to three kinds: demanding [evidence] (*muṭālaba*), objection (*iʿtirāḍ*), and counter-indication (*muʿāraḍa*).

As for demanding [evidence] (*muṭālaba*), it is demanding [evidence] of validation (*taṣḥīḥ*) of reports (*akhbār*) and affirmation (*ithbāt*) of their chains of transmission (*asānīd*), and demanding [evidence] of validation of consensus (*ijmāʿ*) and its affirmation, and demanding [evidence] of the legal cause's existentiatio (*īyād al-ʿilla*) and validation, and other things among the modes of demanding [evidence]. The validation of these is directed against the one being questioned (*al-masʿūl*), according to what I will clarify in its proper place.

As for objection (*iʿtirāḍ*), it is an objection with respect to the indicant (*dalīl*) itself by means of what falsifies it. This is like contesting the transmission chains of a *ḥadīth* by proving the weakness of its transmitter, or contesting consensus (*ijmāʿ*) by explaining [juristic] disagreement (*khilāf*), or contesting the legal cause (*ʿilla*) by way of inconsistency (*naqd*) and breaking (*kasr*) and other things. For the one being questioned must topple the question and rebut it by means of what stops it, in order that his indicant be preserved for him.

As for *muʿāraḍa*, it is that [R's] indicant be confronted with its like or what is stronger than it; and the one being questioned responds to it by means

99 Miller, *Islamic Disputation Theory*, 49–61; Young, *Dialectical Forge*, 129–134.

of everything which the questioner brings against the indicant of the one questioned, as pertains to demands [for evidence] (*muṭālabāt*) and objections (*i'tirāḍāt*), or he gives preponderance to (*yurajjiḥu*) his mention of the indicant over that by which it was counter-indicated.

This is the full set of modes of critique (*qadh*) and response (*jawāb*). As for the details of this, I will mention them according to the proper ordering (*tartīb*) of the indicants (*adilla*), one by one, and I will clarify the response to them, God willing.¹⁰⁰

From the start, then, critique itself—in general, against any indicant, not only *qiyās*-oriented—consists of only three master-categories: demanding [evidence] (*muṭālaba*), objection (*i'tirāḍ*), and counter-indication (*mu'āraḍa*).

Further on, after detailed treatments of the many discrete objections which may be brought against the various paths of proof-seeking (*istidlāl*) from Qur'ān, Sunna, *ijmā'*, and different modes of linguistic implication and rational inference, al-Bājī's extensive chapter on *qiyās*-oriented objections reawakens our consideration of the master-categories. Here, he argues for the subsumption of all fifteen of his *qiyās*-oriented objections beneath them.¹⁰¹ His discussion is clear and comprehensive, and worth presenting in full.

Section on the explanation of what one begins with from among these objections (*i'tirāḍāt*). We have clarified that the whole of what an indicant (*dalīl*) is critiqued by is according to three kinds: demanding [evidence] (*muṭālaba*), objection (*i'tirāḍ*), and counter-indication (*mu'āraḍa*).

As for the first kind, namely, demanding [evidence] (*muṭālaba*), it is according to seven species (*anwā'*). The first of them is that he demands of the proof-seeker (*mustadill*) [R] a validation (*taṣḥīḥ*) of the affirmation of the like of this ruling (*ḥukm*) by way of *qiyās*. The second is demanding (*muṭālaba*) of the proof-seeker an indicant (*dalīl*) for [the fact] that what he made a root-case (*aṣl*) is permitted to be a root-case. The third is demanding of him an indicant for [the fact] that what he made a ruling is

100 Al-Bājī, *Kitāb al-Minhāj*, 40–41 (§78). See also Miller, *Islamic Disputation Theory*, 57–61; Young, *Dialectical Forge*, 133–134.

101 Al-Bājī, *Kitāb al-Minhāj*, 148–151 (§§310–314); See also Young, *Dialectical Forge*, 142–143 and n. 187, 597–598 and n. 121, where I refer to the three as “first-order *topoi*” and “higher-tier categories.”

allowed to be a ruling. The fourth is demanding of him an indicant for [the fact] that what he made a legal cause (*'illa*) is allowed to be a legal cause. The fifth is demanding of him an affirmation of the property (*waṣf*) in the root-case (*aṣl*). The sixth is demanding of him an affirmation of the property (*waṣf*) in the branch-case (*far'*). The seventh is demanding of him a validation of the legal cause (*taṣḥīḥ al-'illa*) and an affirmation of its being the legal cause for the ruling to which he linked it.

We ordered demanding [evidence] (*muṭālaba*) according to this order only because it is necessary that [Q] first begin with a denial (*man'*) of the affirmation of the like of this ruling by way of *qiyās*—then, at that time, he investigates the validity (*ṣiḥḥa*) of the *qiyās*. But if he were first to investigate the validity of the *qiyās*, then deny the affirmation of the like of this ruling by way of *qiyās*, that would be a going back on what was [already] conceded, which is not allowed. And if the affirming of this disagreed-about ruling by way of *qiyās* is valid, then the first thing [Q] investigates is the root-case (*aṣl*), then the ruling (*ḥukm*) affirmed in the root-case, then the inferring (*istinbāt*) of the legal cause (*'illa*) to which the ruling is linked in the root-case. And if the questioner finishes investigating this and concedes it, then he investigates the properties (*awṣāf*) of the legal cause, and demands of [R] validation (*taṣḥīḥ*) of the properties in [the root-case],¹⁰² then in the branch-case, because we have clarified that the root-case comes first with regard to investigation (*naẓar*). After finishing with that, [Q] investigates the branch-case, and if it is equivalent to the root-case in terms of properties, he demands of the proof-seeker [R] a validation of the legal cause (*taṣḥīḥ al-'illa*) in the root-case, and [validation] that it is a legal cause for the disagreed-about ruling.

This is the last of the modes of demanding [evidence] (*wujūh al-muṭālabāt*). For if this is concluded, then that by which the proof-seeker sought proof has entered into the set of indicants (*jumlat al-adilla*) and been preserved from the modes of demanding (*muṭālaba*). But there remains its preservation from the modes of objection (*i'tirād*) and counter-indication (*mu'āraḍa*).

Section on the second kind from among the species of critique (*anwā' al-qadh*), which is objection (*i'tirād*), according to seven species. The

102 Turki's edition has [في الأوصاف], but context tells us it should be [في الأصل].

first of them is asserting the [same] necessitator of [R's] legal cause (*al-qawl bi-mūjib al-'illa*). The second is reversal of [R's] legal cause (*qalb al-'illa*). The third is objection by way of invalid production (*fasād al-waḍ'*). Because each of these is something which eliminates it [R's purported 'illa] from being a legal cause, and clarifies the invalidity for the generality [of legal causes]. The fourth is inconsistency (*naqḍ*). The fifth is breaking (*kasr*). The sixth is demanding [evidence] (*muṭālaba*) by [saying] that [R's] legal cause ('illa) does not apply to its effects (*ma'lūlāt*).¹⁰³ Because each of these is an explanation of the invalidity (*fasād*) of [R's] legal cause in a specified place (*mawḍi' mahṣūṣ*). The seventh is demanding [evidence] (*muṭālaba*) by [claiming] lack of efficiency (*'adam at-ta'thūr*). Because this is an allegation (*iddi'ā'*) of a lack of indicant (*dalīl*) for its [R's legal cause's] validity (*ṣiḥḥa*).¹⁰⁴

This is the last of the modes of critique (*qadh*) for [R's] indicant by way of objection (*i'tirāḍ*). For if [R's] indicant is preserved from this, then it has been preserved from demanding [evidence] (*muṭālaba*) and objection (*i'tirāḍ*), and entered into the set of the valid among indicants (*aṣ-ṣaḥīḥ min al-adilla*). But there remains that it be preserved from its confrontation with *mu'āraḍa*.

Section. The third kind from among the species of critique (*qadh*) is *mu'āraḍa*, which is confronting [R's] indicant with its like and what is stronger than it. This is the final domain of critique for [R's] indicant, because there is no counter-indication except after the conceding (*taslīm*) of its [R's indicant's] validity, but [then] the questioner claims that there is, in God's Law (*ash-shar'*), another indicant which counter-indicates it.

Thus al-Bājī argues—by what is in fact an early example of proper-order theory—for the subsumption of the first seven of his fifteen *qiyās*-oriented objections under *muṭālaba*, the second seven under *i'tirāḍ*, and the last in its stand-alone category of *mu'āraḍa*. Note that, at least in form, this is remarkably similar to what Molla Fenārī will conclude centuries later, with different master-categories, different content, and a different order of *qiyās*-oriented objections,

103 It is not immediately clear why this is identified as a *muṭālaba*, or why, if it is such, it does not belong to the master-category of *muṭālaba*.

104 In this case, the identification of *'adam at-ta'thūr* with *muṭālaba* appears to be explained: presumably, because it alleges that R has not supported the validity of his legal cause, it constitutes a demand for such support.

but with the same objective: to subsume a plurality of discrete, named objection types under a few master-categories—and, at least for al-Bājī, in their logical and natural sequence (i.e., the sequence in which they arguably should occur, and which the natural exigencies of argumentative dialog dictate anyway). For al-Bājī, the end result may be rendered in a simple table.

<i>muṭālaba</i>	[1] demanding validation (<i>taṣḥīḥ</i>) of the affirmation of R's kind of ruling by way of <i>qiyās</i>. [2] demanding an indicant (<i>dalīl</i>) that R's root-case (<i>aṣl</i>) can be a root-case. [3] demanding an indicant that R's ruling (<i>ḥukm</i>) can be a ruling. [4] demanding an indicant that R's legal cause (<i>'illa</i>) can be a legal cause. [5] demanding an affirmation of R's property (<i>waṣf</i>) in the root-case. [6] demanding an affirmation of R's property in the branch-case (<i>far'</i>). [7] demanding a validation of the legal cause and an affirmation that it is the legal cause for R's ruling.

<i>i'tirād</i>	[8] asserting the necessitator of R's legal cause (<i>al-qawl bi-mūjib al-'illa</i>). [9] reversal of R's legal cause (<i>qalb al-'illa</i>). [10] invalid production (<i>fasād al-waḍ'</i>). [11] inconsistency (<i>naqḍ</i>). [12] breaking (<i>kasr</i>). [13] demanding (<i>muṭālaba</i>): R's legal cause does not apply to its effects (<i>ma'lūlāt</i>). [14] demanding (<i>muṭālaba</i>): lack of efficiency (<i>'adam at-ta'thīr</i>).

<i>mu'āraḍa</i>	[15] confronting R's indicant with its like and what is stronger than it.

Some three centuries later, az-Zarkashī embarked on a similar program of subsuming *qiyās*-oriented objections under master-categories, but with a different set of objections and an entirely new set of justifications. We have seen Ibn al-Ḥāḥib claim that all of his twenty-five objections (*i'tirāḍāt*) go back to *man'* and *mu'āraḍa*, and that, in general, objections are not tolerated other-

wise. Az-Zarkashī would maintain the same over a hundred years later, arguing how at least some from his own list of sixteen objections go back to *manʿ* and *muʿāraḍa*. Again, the discussion—though at times more difficult than al-Bāji’s—is illuminating enough to produce in full.¹⁰⁵

Section. They mentioned that all [dialectical] questions (*asʿila*) go back to denial (*manʿ*) and counter-indication (*muʿāraḍa*) because when the response (*jawāb*) to denial and counter-indication is attained the indicant (*dalīl*) is completed, the goal of affirming the claim is attained, and no scope [of operation] remains to the objector (*muʿtarid*). Thus, questions beyond these are false and paid no heed, because a response to all denials cannot be attained except by furnishing an indicant (*dalīl*) for all the premises, and an explanation (*bayān*) that the ruling is entailed [from] them; otherwise, a denial would be [rightly] directed [against them]. Likewise, a response to the counter-indication is not attained except by explaining the negation, from all [the premises], of a counter-indicant (*muʿārid*).

An explanation of how they go back to [denial and counter-indication]:

As for demanding explanation (*istifsār*), it is because if [R’s] words are such as bear multiple interpretations (*muḥtamalan*), then the proof-seeker’s (*mustadill*’s) [R’s] objective is not attained except by way of its explanation (*tafsīr*), and the demand for its explanation entails a withholding of the property’s verification (*manʿ taḥqīq al-waṣf*) and a withholding of the ruling’s being entailed from it (*manʿ luzūm al-ḥukm ʿan-hu*)¹⁰⁶—so it goes back to denial (*manʿ*).

As for division (*taqsīm*), it goes back to [either] *manʿ* or *muʿāraḍa*, because if [R’s] words are such as possibly bear two things (*muḥtamalan li-amrayn*), then a denial compels him to choose [between] the two divi-

105 Among other challenges, apparent errors of transmission / transcription frequently cloud the text in all consulted editions.

106 Bearing in mind that the non-technical senses of *manʿ* include, among others: preventing, hindering, impeding, arresting, withholding, etc. (see Edward William Lane, *An Arabic-English Lexicon*, 8 vols. [Beirut: Librarie du Liban, 1968], 8:3024, s.v. [منع]). I have interpreted this sentence as first employing the term *manʿ* in a non-technical sense of “withholding” or “impeding”, thus describing such disputational consequences as justify *istifsār*’s subsumption under *manʿ* in its technical sense (i.e., “denial”).

sions (*ikhtiyār al-qismayn*), and at such a time [either] denial or counter-indication are directed against him.

As for demanding [validation of the legal cause] (*muṭālaba [bi-taṣḥīḥ al-ʿilla]*),¹⁰⁷ it is a denial of the ruling's being entailed from the property (*manʿ luzūm al-ḥukm ʿan al-waṣf*),¹⁰⁸ so it is subsumed by [charge of] inconsistency (*naqḍ*).

As for *naqḍ*, it is a *muʿāraḍa*, because it falsifies [R's] legal cause (*ʿilla*).

As for disqualifying difference (*farq*), it is likewise [a counter-indication], because it constitutes, in the root-case or the branch-case, a quality (*maʿnā*) different from the quality by which the proof-seeker (*mustadill*) [R] made causal justification [for the ruling].¹⁰⁹

As for breaking (*kasr*), it is a species of *naqḍ*, and *naqḍ* is a *muʿāraḍa*.

As for asserting the [same] necessitator (*al-qawl bi-l-mūjib*), it goes back to *manʿ*, because it denotes concession of the indicant (*taslīm ad-dalīl*) while maintaining contention (*nizāʿ*) over the ruling,¹¹⁰ which is a denial of the ruling's being entailed by what the proof-seeker (*mustadill*) [R] claimed.

¹⁰⁷ Elsewhere, in his discussion on *manʿ*, az-Zarkashī notes: "The second [mode of denial in the root-case] is denying that what the opponent claimed as a legal cause (*ʿilla*) is a legal cause, after conceding to [R's] causal-justification (*taʿlīl*); and it is called 'demanding' (*muṭālaba*), that is, [demanding] validation of the legal cause. If [the term] *muṭālaba* is used alone in the customary usage of the dialecticians (*ʿurf al-jadaliyyīn*), then what they mean is this; and wherever something else is meant, it is mentioned with a restrictive qualification, for one says: 'demanding existence of the property' or '[demanding] affirmation of the ruling in the root-case' and the like" (az-Zarkashī, *al-Baḥr al-Muḥīṭ*, al-ʿĀnī ed., 5:324; az-Zarkashī, *al-Baḥr al-Muḥīṭ*, Tāmir ed., 4:283).

¹⁰⁸ Reading [منع لزوم الحكم عن الوصف] instead of [مع لزوم الحكم عن الوصف], as is found in all the editions consulted. This reading is supported by the phrase [تحقيق الوصف ومنع لزوم الحكم عنه] in the preceding explanation of *istifsār*, and [منع لزوم الحكم مما ادعاه] in the following explanation of *al-qawl bi-l-mūjib*.

¹⁰⁹ Reading [... يكون بدع معنى ... عن], rather than [... يكون بدا معنى ... عن], as it occurs in all consulted editions: [لأنه ما يكون بدا معنى في الأصل أو في الفرع عن المعنى الذي علل به المستدل].

¹¹⁰ Reading [استيفاء النزاع في الحكم] instead of [استبقاء النزاع في الحكم] as is found in all the editions consulted.

As for reversal (*qalb*), it is a *mu'āraḍa* with respect to the ruling (*ḥukm*); but it is [also] said: it goes back to *man'*.

As for lack of efficiency (*'adam at-ta'thīr*), it is a *mu'āraḍa* with respect to the premise. This is because if the proof-seeker (*mustadill*) [R] argues by way of *qiyās*, and the objector (*mu'tarīḍ*) [Q] says to him: 'What you mentioned of uniting quality (*al-ma'nā al-jāmi'*) is not right for causation, due to the ruling's affirmation without it,' then such is a counter-indication with respect to the premise, because an affirmation of the uniting property's causation (*'illiyyat al-waṣf al-jāmi'*) is a premise in the *qiyās*. The upshot of this is that it goes back to a critique (*qadh*) of the uniting factor's being a legal cause (*'illa*) by explaining the ruling's affirmation without one of the parts of the legal cause. This, in reality, is a counter-indication with respect to the legal cause, because the proof-seeker claims the compound aggregate to be a legal cause, while the objector, due to the lack of efficiency (*'adam at-ta'thīr*), explains some of the aggregate—not the whole aggregate—as a legal cause. This is a counter-indication for the all by the some, which is a subtle nicety [of language] (*latīf ghāmiḍ*).

As for giving preponderance (*tarjīḥ*), it is a *mu'āraḍa* with respect to the problem-question's ruling (*ḥukm al-mas'ala*).¹¹¹ The manner of its proper articulation is that one says: 'the necessitator (*mūjib*) of the indicant (*dalīl*) we mentioned has preponderance over what you mentioned,' and he will demonstrate it by its method. For were its necessitator not affirmed, then abandoning (*tark*) through the preponderant indicant would be entailed while it is impossible. The opponent can [also] deny that it is different from the first, because a condition of something different (*al-ghayr*) is that it be essentially dissimilar to it, in the sense that the existence of each of the two is possible without the other—a safeguard against the unqualified and the qualified (*al-muṭlaq wa-l-muqayyad*). If it

111 Bearing in mind that *qiyās*-oriented *tarjīḥ* comes into play when the opponents have conflicting causal properties which, at first glance, may seem equally weighted—that is, have equal potential to be the real *'illa*. Among other works of *jadāl* and *uṣūl*, extensive lists of *tarjīḥāt* may be found in al-Bājī, *Kitāb al-Minhāj*, 221–239 (§§ 504–548) and az-Zarkashī, *al-Baḥr al-Muḥīṭ*, al-ʿAnī ed., 6:130–194 (Tāmir ed., 4:425–485). See also Hallaq, *History of Islamic Legal Theories*, 92–94; and Young, *Dialectical Forge*, 146, 148 n. 197, 182, 570–571, 585–588, 604–607.

[the *tarjih*] is from the proof-seeker (*mustadill*) [R], then it is his counter-indication to that by which the objector (*mu'tariḍ*) [Q] objected. [This is] because *mu'āraḍa* is an expression denoting the furnishing of an indicant by which one's opponent's indicant is arrested; and [R's] *tarjih* is like that, because it necessitates the preponderant factor's affirmation, and so rebuts what the objector [Q] evinced, due to its being outweighed (*mar-jūh*).

As for invalid production (*fasād al-waḍ'*), it is a denial of the ruling's being entailed from the indicant (*man' luzūm al-ḥukm 'an ad-dalīl*), because a ruling's being affirmed by *qiyās* comes with the condition (*shart*) that no univocal scripture (*naṣṣ*) [ruling on the topic] exists—but univocal scripture [ruling on the topic] does exist.

As for invalid consideration (*fasād al-i'tibār*), it goes back to *man'*. [This is] because it denies affirmation of a *qiyās*¹¹² which is contrary to univocal scripture (*'alā mukhālafat an-naṣṣ*)—but univocal scripture has been found, and considering *qiyās* upon its existence is an invalid consideration (*i'tibār fāsīd*). So the ruling does not follow from it. Consequently, invalid consideration goes back to denial of the ruling's being entailed (*man' luzūm al-ḥukm*).

As for claiming that *qiyās* is not allowed in the site of contention (*maḥall an-nizā'*), it goes back to *mu'āraḍa* with respect to the legal cause (*'illa*) or the ruling (*ḥukm*).

And now, if you have learned that all the objections (*i'tirāḍāt*) go back to *man'* and *mu'āraḍa*, know that some [scholars] claim that *mu'āraḍa* goes back to *man'* (!)¹¹³

Thus az-Zarkashī, with a relatively detailed set of arguments, manages to reduce twelve of his objections, plus the category of *tarjih* principles, to only two master-category objections of *man'* and *mu'āraḍa*.

112 Reading [لأنه منع ثبوت القياس], instead of [لأنه مع ثبوت القياس] as is found in the consulted editions.

113 Az-Zarkashī, *al-Baḥr al-muḥīṭ*, al-Ānī ed., 5:350–351; az-Zarkashī, *al-Baḥr al-muḥīṭ*, Tāmīr ed., 4:305–306.

<i>manʿ</i>	[either/or]	<i>muʿāraḍa</i>		
– <i>istifsār</i> – <i>al-qawl bi-l-mūjib</i> – <i>qalb</i> [according to some] – <i>fasād al-waḍʿ</i> – <i>fasād al-iʿtibār</i>	– <i>taqsīm</i>	<table><tr><td><i>naqd</i></td><td> – <i>muṭālaba</i> [bi-taṣḥiḥ al-ʿilla] – <i>kasr</i> </td></tr></table> – <i>farq</i> – <i>qalb</i> – <i>ʿadam at-taʿthīr</i> – <i>tarjīḥ</i> – <i>daʿwā kaww maḥall an-nizāʿ lā yajūzu fīhi al-qiyās</i>	<i>naqd</i>	– <i>muṭālaba</i> [bi-taṣḥiḥ al-ʿilla] – <i>kasr</i>
<i>naqd</i>	– <i>muṭālaba</i> [bi-taṣḥiḥ al-ʿilla] – <i>kasr</i>			

Some decades later Molla Fenârî clearly asserted a *qiyaṣ*-oriented objections subsumption theory. Somewhat surprisingly, though, he neither provides a set of justifications (as we see with al-Bājî and az-Zarkashî), nor tells us precisely which discrete objections belong to which master-categories. In fact, having derived his four master-categories in the active quality-based derivation theory we reviewed above, he says only the following, and leaves the rest to us.

These four [*istifsār*, *muʿāraḍa*, *munāqaḍa*, *mumānaʿa*] may be brought, with their conditions, against any drawing of proof (*istidlāl*), and these twenty-three or twenty-five revert to them. For one of them is demanding explanation (*istifsār*), five are counter-indications (*muʿāraḍāt*), two are charges of inconsistency (*munāqaḍāt*), and the remainder are denials (*mumānaʿāt*).¹¹⁴

Hence—at least in the case of Molla Fenârî—“four moves to rule them all.” And fortunately, thanks to Molla Fenârî’s derivations, species descriptions, and detailed reviews of discrete objections, it is a relatively simple matter to determine which of his twenty-three go back to which of his four. The subsumption may be rendered as follows.

¹¹⁴ Al-Fanârî, *Fuṣūl al-Badāʾiʿ*, Ismāʿîl ed., 2:381; Al-Fanârî, *Fuṣūl al-Badāʾiʿ*, Hawsāwî ed., 224–225.

<i>istifsār</i>	1. <i>istifsār</i>

<i>mumānaʿa</i>	2. <i>fasād al-iʿtibār</i> 3. <i>fasād al-waḍʿ</i> 4. <i>manʿ al-ḥukm fī l-aṣl</i> 5. <i>taqsīm</i> 6. <i>manʿ wujūd mā yaddaʿi ʿillatan fī l-aṣl</i> 7. <i>manʿ ʿilliyatihi mujarradan</i> 8. <i>ʿadam at-taʿthīr</i> 9. <i>al-qadh fī l-ifḍāʾ</i> 11. <i>kawn al-waṣf ghayr ṣāḥib</i> 12. <i>kawnihi ghayr munḍabīṭ</i> 16. <i>manʿ wujūd al-ʿilla fī l-farʿ</i> 19. <i>ikhtilāf aḍ-ḍābiṭ</i> 20. <i>ikhtilāf jins al-maṣlaḥa fī l-aṣl wa-l-farʿ</i> 21. <i>mukhālafat al-ḥukmayn ḥaqīqatan</i> 23. <i>al-qawl bi-l-mūjib</i>

<i>munāqaḍa</i>	13. <i>naqḍ</i> 14. <i>kasr</i>

<i>muʿāraḍa</i>	10. <i>al-qadh fī l-munāsaba bi-ibdāʾ al-muḥsida al-rājiḥa aw al-musāwiya</i> 15. <i>al-muʿāraḍa fī l-aṣl</i> 17. <i>al-muʿāraḍa fī l-farʿ</i> 18. <i>farq</i> 22. <i>qalb</i>

6 Metatheory 4. Grand Subsumption Theory

We saw, in al-Bājī's treatment of the fifth dialectical question, that his three master-categories (*muṭālaba*, *iʿtirāḍ*, *muʿāraḍa*) were applicable to all types of indicants (*adilla*) of God's Law, not just *qiyās*, with examples including *muṭāl-abāt* for validating *ḥadīths* and affirming their transmission chains, and for validating and affirming instances of juristic consensus, as well as *iʿtirāḍāt* exposing the weakness of a *ḥadīth* transmitter, or exposing juristic disagreement in a supposed instance of consensus. In fact, it is a notable feature of "classi-

cal” *jadal* that certain objection types—especially subtypes of *mu‘āraḍa*—are found among objections in multiple domains of drawing indication (*istidlāl*), whether by way of Qur’ān, Sunna, Ijmā‘, *qiyās*, or other hermeneutical or rational inferences.¹¹⁵

Something like this was observed by later uṣūlists as well, who would sometimes expand the scope of their *qiyās*-oriented objection subsumptions to what constitutes our fourth category of metatheory: grand subsumption. This is meant to describe whenever an uṣūlist shows, in a chapter on *qiyās*, that certain *qiyās*-oriented objections in fact apply equally in other justificatory domains—that is, against R’s *istidlāl* from the *adilla* of Qur’ān, Sunna, Ijmā‘, etc. And this will of course entail the theorist’s showing us (whether directly or by implication) that, ultimately, objections in *all argumentative domains* are subsumed by the master-category objections.

Though brief in presentation, az-Zarkashī provides us with a first example. After completing a broad survey of sixteen modes of objection (*i‘tirāḍ*)—replete with references to other authors, problem-questions (*masā’il*), additional sections (*fuṣūl*), and notate bene (*tanbīhāt*)¹¹⁶—he divides certain categories of his list as follows.

Asserting the [same] necessitator (*al-qawl bi-l-mūjib*), counter-indication (*mu‘āraḍa*), reversal (*qalb*), inconsistency (*naqd*), and denial (*man‘*) are not specific to *qiyās*. On the contrary, they may be directed against the rest of the indicants [of God’s Law] (*adilla*), *qiyās* or otherwise. Except denial, for it is not directed against the text of The Book [i.e., the Qur’ān]. Invalid production (*fasād al-waḍ‘*), disqualifying difference (*farq*), demanding explanation of the causal efficiency (*muṭālaba bi-bayān at-ta‘thīr*), composition (*tarkīb*), breaking (*kasr*), and non-application of *qiyās* in the locus of contention (*kawn maḥall an-nizā‘ lā yajrī fihi al-qiyās*) are specific to *qiyās*.¹¹⁷

115 See Young, *Dialectical Forge*, 146–147, where, besides *mu‘āraḍa*, the objections of professing X’s necessitator (*al-qawl bi-mūjib X*), sharing the indicant (*al-mushāraka fī d-dalīl*), claiming abrogation (*da‘wā l-naskh*), preponderating exegesis (*ta’wīl*), claiming ambiguity (*da‘wā l-ijmāl*), and demanding X’s validation (*muṭālaba bi-taṣḥīḥ X*) are observed to find application in multiple justificatory domains, and it is suggested that this demonstrates “not only a terminological consistency, but a meta-logical consciousness of argument form and application.”

116 Az-Zarkashī, *al-Baḥr al-Muḥīṭ*, al-‘Ānī ed., 5:261–345; az-Zarkashī, *al-Baḥr al-Muḥīṭ*, Tāmir ed., 4:232–301.

117 Az-Zarkashī, *al-Baḥr al-Muḥīṭ*, al-‘Ānī ed., 5:345; az-Zarkashī, *al-Baḥr al-Muḥīṭ*, Tāmir ed., 4:301.

Thus az-Zarkashī distinguishes between those from among his sixteen modes of objection which are not specific to *qiyās*, but may in fact be directed against any of the other *adilla*, and those which are *qiyās*-oriented only. And we are not surprised to see that the master-category objections of *manʿ*, *naqd*, and *muʿāraḍa* are prominent among the former. Moreover, as we have seen above, az-Zarkashī proceeds to argue that all of the objections from both sets are reducible to just *manʿ* and *muʿāraḍa*—the combined discussions constituting a grand subsumption of all dialectical objections under just two master-categories.

Directed against all indicants (<i>adilla</i>)	Specific to <i>qiyās</i>
– <i>al-qawl bi-l-mūjib</i> – <i>muʿāraḍa</i> – <i>qalb</i> – <i>naqd</i> – <i>manʿ</i> *	– <i>fasād al-waḍʿ</i> – <i>farq</i> – <i>muṭālaba bi-bayān at-taʿthīr</i> – <i>tarkīb</i> – <i>kasr</i> – <i>kawn maḥall an-nizāʿ lā yajrī fīhi al-qiyās</i>

*except against Qurʾān

As for Molla Fenârî, we have seen him claim, in one breath, that “these four [*istifsār*, *muʿāraḍa*, *munāqaḍa*, *mumānaʿa*] may be brought, with their conditions, against any drawing of proof (*istidlāl*), and these twenty-three or twenty-five revert to them,” after which he parceled out five to *muʿāraḍa* and two to *munāqaḍa*, with *istifsār* standing alone and all the rest reducing to *mumānaʿa*. Thus he has already asserted a grand subsumption, with the four universally applicable to any *istidlāl*, and the twenty-three reducible, in turn, to the four. He then takes things further, however, arguing how various discrete objections function in the non-*qiyās* domains of Qurʾān, Sunna, and Ijmāʿ. Replete with examples, Molla Fenârî’s explanation is worth rendering in full.¹¹⁸

Therefore it is said that, against [justification by way of] *ijmāʿ* ...
 like our assertion that they formed consensus on [the fact] that return
 of a despoiled non-virgin [female slave] (*ath-thayyib al-mawṭūʿa*) is

118 Al-Fanârî, *Fuṣūl al-Badāʾiʿ*, Ismāʿîl ed., 2:381; al-Fanârî, *Fuṣūl al-Badāʾiʿ*, Hawsāwî ed., 225–227.

not permitted without charge (*majjānan*), because ‘Umar and Zayd obliged half of a tenth of her value, and a tenth of it for the virgin, and ‘Alī, may God be pleased with him, forbade [her] return [altogether], [all this] without [anyone’s] rejection (*min ghayr nakīr*)¹¹⁹ ... one may bring a denial (*man’*) of the existence [of *ijmā’*] due to the explicitness of mutual disagreement (*ṣarīḥ al-mukhālafa*), or a denial that silence [of opposing parties] indicates mutual agreement (*dalālat as-sukūt ‘alā l-muwāfaqa*), or a denial of the validity of [the consensus report’s] chain of transmission (*sanad*). Or [one may bring] a counter-indication (*mu‘āraḍa*)—not by way of a *qiyās* or a solitary report (*khabar al-wāḥid*), but by way of another *ijmā’*, or a report with continuous, multi-party transmission (*mutawātir*), because the first *ijmā’* is [merely] presumptive (*ẓannī*), and thus its counter-indication is possible.

And against [justification by way of] the most apparent reading of the Qur’ān (*ẓāhir al-Kitāb*) ...

like [R’s justifying] the permission of sale of the unseen (*bay’ al-ghā’ib*) by way of the generality (*‘umūm*) of “sale” (*bay’*) in “God has permitted sale” [Q. 2:275] ...

one may bring a demand for explanation (*istifsār*), or a denial (*man’*) of [the verse’s] apparentness (*ẓuhūr*) by denying the generality [of “sale”], or bringing forth a particularity (*wurūd al-khuṣūs*). Or [one may bring] a [competing] interpretation (*ta’wīl*) [by saying] that this sale is classified under what [the Prophet] said, peace be upon him, about sale involving uncertainty (*bay’ al-gharar*), since there is no specializing (*takhṣīṣ*) here—and even if conceded, its specializing is less¹²⁰—or this [Prophetic saying] counter-indicates [the verse’s] apparentness, and so it remains ambiguous (*mujmal*). Or [one may bring] a *mu‘āraḍa* by way of another verse, or a report with continuous, multi-party transmission (*ḥadīth mutawātir*), as has passed [in above discussion]. Or [one may bring] an assertion of the [same] necessitator (*al-qawl bi-l-mūjib*), since the permis-

119 That is, there is consensus that she cannot simply be returned without any kind of compensation, because ‘Umar and Zayd obliged a certain amount of compensation, and ‘Alī forbade her return entirely, and no one raised their voice in opposition to these views.

120 That is, if I understand correctly, less is required to specialize the Prophet’s dictum about sale involving uncertainty (*bay’ al-gharar*) such that it can cover the contended issue of sale of the unseen (*bay’ al-ghā’ib*) than would be required to specialize Q. 2:275 to the same end.

sibility of sale is conceded [with respect to Q. 2:275], but [this verse] does not necessitate its validity (*ṣiḥḥa*).¹²¹

And against [justification by way of] the most apparent reading (*ẓāhir*) of the Sunna ...

like if [R], by way of [the Prophet's] saying, peace be upon him, "Keep four [wives], and separate from the rest of them", drew proof for [the fact] that marriage [to the four] is not annulled ...

[one may bring] the six mentioned [above], namely, demanding explanation (*istifsār*), and denial (*manʿ*) of the generality in [the *ḥadīth*], and [competing] interpretation (*taʿwīl*)—by [saying] that what is meant is the renewal of marriage to the four, because the newly happening / accidental (*tārīʿ*) is like what was the case from the beginning / self-initiated (*mubtadaʿ*) with respect to invalidating marriage, like the foster relationship of breast-feeding (*raḍāʿ*)¹²²—and ambiguity (*ijmāl*), and *muʾāraḍa*, and asserting the [same] necessitator (*al-qawl bi-l-mūjib*). Added to these is denial (*manʿ*) of the chain of transmission's validity, by [saying] that it is stopped (*mawqūf*),¹²³ or there is a critique (*qadh*) with respect to its narration, because its narrator is weak due to some defect in his record of integrity (*ʿadāla*), or his accuracy (*ḍabt*), or by accusing his shaykh of being a liar; just as we say the narrator of "Both parties to a sale have the right of option (*khiyār*) so long as they have not separated" is Mālik, may God have mercy on him, but he has contradicted it; and the narrator of "Whichever woman has married herself off", etc. [to the end of the

121 In other words, Q concedes that the verse allows sale, but denies that it guarantees the validity of all sales. Hence, Q asserts the selfsame necessitator of R's ruling, but points out that it indicates something different from R's claim, which is the objection of *al-qawl bi-l-mūjib*.

122 In other words, R claims, based on his interpretation of the *ḥadīth*, that if a man marries more than four wives, his marriage to four of them remains valid and intact, though he must separate from the others. And, if I understand correctly, Q counters with an alternate interpretation (*taʿwīl*) that he must renew his marriage to the four, since the after-the-fact condition of too many wives invalidates his marriages just as much as the before-the-fact condition would have prevented them. Moreover, Q supports this *taʿwīl* with a *qiyās* from foster relationship, since the after-the-fact condition of foster relationship (by the husband drinking the wife's breast-milk) invalidates his marriage just as much as the before-the-fact condition (the prospective bride having nursed the groom) would have prevented it. See Wizārat al-Awqāf wa-l-Shuʿūn al-Islāmiyya, *Al-Mawsūʿa al-fiqhiyya*, 45 vols. (Kuwait: Wizārat al-Awqāf wa-l-Shuʿūn al-Islāmiyya, 1986–2000), 41:324, s.v. [التحریم بالطارئ بالرضاع].

123 That is, it goes back to a Companion, but not to the Prophet.

ḥadīth], is Sulaymān b. Mūsā ad-Dimashqī, on the authority of az-Zuhri, on 'Urwa, on 'Ā'isha, may God be pleased with her, then az-Zuhri was asked, and he said: 'I don't know him.'¹²⁴

Extracting the discrete dialectical objections from these examples, we may generate a table for Molla Fenârî's grand subsumption as follows.

Against consensus (<i>Ijmā'</i>)	Against the most apparent reading of the Qur'ān (<i>ẓāhir al-Kitāb</i>)	Against the most apparent reading of the Sunna
– <i>man'</i> of the existence [of <i>ijmā'</i>] due to the explicitness of mutual disagreement – <i>man'</i> of the indication of silence [of opposing parties] for mutual agreement – <i>man'</i> of the validity of the chain of transmission – <i>mu'āraḍa</i> by way of another <i>ijmā'</i>, or by a <i>mutawātir</i> report	– <i>istifsār</i> – <i>man'</i> of the verse's apparentness by denying the generality – <i>man'</i> of the verse's apparentness by bringing forth a particularity – <i>ta'wīl</i> – <i>ijmāl</i> – <i>mu'āraḍa</i> by way of another verse, or by way of a <i>mutawātir ḥadīth</i> – <i>al-qawl bi-l-mūjib</i>	– <i>istifsār</i> – <i>man'</i> of the generality in [the <i>ḥadīth</i>] – <i>ta'wīl</i> – <i>ijmāl</i> – <i>mu'āraḍa</i> – <i>al-qawl bi-l-mūjib</i> – <i>man'</i> of the transmission-chain's validity: it is <i>mawqūf</i> – <i>qadh</i> with respect to narration: the narrator is weak – due to some defect in his <i>'adāla</i> – due to some defect in his <i>ḍabt</i> – his shaykh is a liar

Note the prominence with which *istifsār* and various types of *man'* and *mu'āraḍa* appear, but note also the conspicuous absence of *naqd* or *munāqaḍa*.

¹²⁴ That is, az-Zuhri denied knowing Sulaymān b. Mūsā, who purportedly transmitted from him. See Abū l-Ḥasan 'Alī b. Muḥammad al-Māwardī, *Al-Ḥāwī al-Kabīr: fī Fiqh Madhhab al-Imām al-Shāfi'ī ... wa huwa Sharḥ Mukhtaṣar al-Muzanī*, 19 vols., ed. by 'Alī Muḥammad Mu'awwaḍ and 'Ādil Aḥmad 'Abd al-Mawjūd (Beirut: Dār al-Kutub al-'Ilmiyya, 1994), 9.40.

Whether this is anything more than an inconsequential omission of *naqd*-relevant examples is unclear. But it is certainly clear that, ultimately, Molla Fenârî maintained the subsumption of *all objection types and subtypes*, no matter their associated justificatory domain, beneath his four master-categories of *istifsâr*, *mumānaʿa*, *munāqaḍa*, and *muʿāraḍa*. These four moves ruled not only the plurality of *qiyās*-oriented objections, but the collective set of dialectical objections across all domains of indicants of God's Law.

7 A Few Observations and Hypotheses

Although this study represents a relatively early stage in researching dialectical metatheories, a few observations regarding what we have encountered so far are worth mentioning, and a few hypotheses worth positing. As for premise-opposition, species-derivation, it bears repeating that this category of metatheory parallels the idea of *topoi*, if we understand the latter as premise-categories under which one “locates” collections of arguments. As such, the emergence of families of objections—the “species” of our theorists—exhibit not only a practical origin, but a formative influence with respect to proper-order theory and, perhaps, a reflection of the move towards greater abstraction (with the aim of universality) which marks the ascendancy of the master-category objections.

As for quality-based derivations, whether active or passive, it first bears repeating that early Ḥanafīs like ad-Dabūsī, al-Bazdawī, and others rejected *qiyās* based on legal causes merely indicated by co-presence (*ʿilal ṭardīyya*), and so in reality presented us with only two licit categories of *qiyās*-oriented objection: *mumānaʿa* and *muʿāraḍa*, including others only for the sake of debating the supporters of co-presence (*ahl aṭ-ṭard*). The point is that, even from a very early stage, Ḥanafī objections were constrained to types of *mumānaʿa* and *muʿāraḍa*, and it is under these two master-categories that later theorists—including non-Ḥanafīs like al-Āmidī and Ibn al-Ḥāḓib—claimed that all other categories were subsumed. And, in a way, Molla Fenârî took it even further in his active quality-based derivation. True, by first positing all *iʿtirāḍāt* to be either *istifsār* or *manʿ* he isolates *istifsār* as a stand-alone highest-tier master-category, but in so doing he also subsumes all of *mumānaʿa*, *munāqaḍa*, and *muʿāraḍa*—and even the illicit moves of *ghaṣb* and *muʿānada*—under the single, highest-tier master-category of *manʿ*.

But it is with *qiyās*-oriented objections subsumption theory that we find the most direct indication as to how and why mere trios or quartets of general objections emerged as the singular foci of later dialectic, subsuming the variant

and often extensive pluralities of discrete *qiyās*-oriented objections which had been named, debated, and refined over centuries in *uṣūl* and *jadāl* texts. Bearing in mind the logicizing, synthesizing, and universalizing spirit so evident in “post-classical” legal theory and dialectic, these master categories—already of relatively singular focus in the Ḥanafī tradition—were an obvious solution for transcending complex, past pluralities and producing a general model for dialectic: a master rulebook.

And such grand subsumption theories as we find in the *qiyās*-dialectic of az-Zarkashī and Molla Fenārī simply acknowledged the universality of master-category objections at a higher level yet, covering objections in all the justificatory domains of legal theory. Considering az-Zarkashī’s and Molla Fenārī’s manifestly syncretic and synthetic practices, there are undoubtedly older grand subsumption theories to be discovered, stretching back at least as far as the seventh/thirteenth century, wherein the universal *ādāb al-baḥṭh* has its proximate roots. And going back even further, there is certainly an applied *uṣūl*-domain universality of master-categories like *muṭālaba*, *i’tirāḍ*, and *mu’āraḍa* in the “classical” *jadāl* of such figures as al-Bājī. The point here is that it is only one more step from acknowledging the master-category objections for all domains of legal theory—as is clearly the case in the *jadāl / khilāf* of Burhān ad-Dīn an-Nasafī and his immediate intellectual predecessors (especially an-Nisābūrī and al-‘Amīdī)—to acknowledging the master-category objections as governing *all* argumentative disciplines—be they positive, normative, descriptive, or speculative—as is clearly the case in the dialectic of an-Nasafī’s student, Shams ad-Dīn as-Samarqandī, who, in his *Risāla fī Ādāb al-Baḥṭh*, consciously (and famously) applied them equally in the sciences of theology (*kalām*), philosophy (*ḥikma*), and juristic disagreement (*khilāf*).

With these points in mind, we might return to the original question of what lies behind the ascendancy of master-category objections in post-classical Islamic dialectics, and posit that it was in fact the steady accumulation of metatheories, eventually brought to the fore by a synthesizing trend from at least Īlkhānid times and continuing thereafter, which contributed to the eventual, singular focus on universal, master-category objections. Already the center of attention in early Ḥanafī works, *man’ / mumāna’a*, *naqḍ / munāqaḍa*, and *mu’āraḍa* may have become the sole foci of objection-theory in Eastern Ḥanafī *jadāl* and *khilāf* soon after the logical turn.¹²⁵ Then this was not only

125 Though how soon awaits further research into the dialectic of Raḍī d-Dīn an-Nisābūrī and his circle, especially Rukn ad-Dīn al-‘Amīdī (for an important first foray, see Miller, *Disputation Theory*, 75–76, 78–85).

conveyed by as-Samarqandī, through an-Nasafī, into the early *ādāb al-baḥṭh*, but it was later reflected in the synthetic metatheories of uṣūlist-dialecticians like Molla Fenâî, who drew on both Shāfiʿī- and Ḥanafī-style approaches to *qiyās*-dialectic at both the object and meta levels of discourse.

8 Closing Questions

I would like to close this study with a trio of questions I think are important going forward. The first of them is: How do we understand these metatheories against Asad Ahmed's elucidation of metatheoretical responses to underdetermination in Islamic legal theory? In a recent paper, for example, he has determined that: (1) due to the underdetermination of many principles of Islamic legal theory—in that there was an insufficiency of certainty-producing evidence of the sort which was consensually understood by uṣūlists to be certainty-producing (e.g., univocal scripture [*naṣṣ*])—uṣūlists engaged in metatheoretical discussions to justify (and alter / refine) such underdetermined principles, and, in fact, larger structures of legal theory; and (2) secondary justificatory theories like the method of presumed continuity of a status quo ante (*istiṣḥāb al-ḥāl*) are themselves metatheoretical in relation to the primary sources and methods (*uṣūl*) for discovering God's Law.¹²⁶

It appears we may be witnessing the first phenomenon with regard to the elaboration of *qiyās*-dialectic metatheory. We certainly might say, for example, that in the domain of *qiyās*-oriented dialectic certain descriptive principles of, e.g., causality, not to mention prescriptive principles of, e.g., validity and invalidity, legitimate and illegitimate moves, proper procedure and question-ordering, etc., were underdetermined at the object level—finding less (in comparison to other methodological concerns) in the way of unequivocal support from (or exemplification in) Qurʾān, Sunna, and Ijmāʿ—and uṣūlist-dialecticians perforce took up meta-level theorizing in the course of justifying and refining them. Parallels to the second phenomenon: Ahmed's recognition of *istiṣḥāb al-ḥāl* as itself metatheoretical with regard to the primary *uṣūl*, may be trickier to discern at this stage, however. If we understand correctly that *istiṣḥāb* was developed with the consideration that it would come into play as a last resort, only when the more epistemically authoritative, scripture-linked

126 Asad Q. Ahmed, "The Structure of *Istiṣḥāb* in Classical *Uṣūl al-Fiqh*," in *Islamic Legal Theory: Intellectual History and Uṣūl al-Fiqh*, ed. by R. Gleave and M. Bedir (Leiden: Brill, [forthcoming]). See also Asad Q. Ahmed, "Underdetermination in Late Postclassical Ḥanafī Legal Theories," *Oriens* 46, no. 1–2 (2018): 129–158.

(at the object level) primary sources and methods could not be brought to bear, then nothing similar is immediately apparent in juristic dialectics.¹²⁷ It may be that, despite the best efforts of Najm ad-Dīn aṭ-Ṭūfī and others to show otherwise,¹²⁸ the larger enterprise of juristic dialectic—apart from a general sanctioning of its practice in its “good” form,¹²⁹ and a short catalog of argumentative moves which might be claimed as divinely sanctioned paradigms¹³⁰—was underdetermined to the extent that its broader justifications and epistemic underpinnings were entirely metatheoretical, processing object-level concepts grounded mostly in the historical practices and teachings of predecessors, and the natural, practical exigencies of dialogical argument.

This brings us to a second important question going forward: How do we understand these metatheories against Shahid Rahman’s notion of “dialogical constitution of meaning”?¹³¹ In the course of a series of email discussions,¹³² Rahman suggested that complex assertions and arguments such as we find in *qiyās*-dialectic metatheory can certainly be declined into series of component

127 Apart, of course, from the more comprehensive *jadāl* treatises’ discourses on the *adilla* of God’s law, which include *istidlālāt* from primary and secondary *uṣūl* [including *istiṣhāb*] and the *i’tirādāt* ranged against them.

128 Aṭ-Ṭūfī contributed significantly to linking the machinery of juristic dialectic—what we might call object-level argument forms—with authoritative (Qur’anic) precedents. In fact, the greater part of his *‘Alam al-Jadhal fī ‘Ilm al-jadal* is dedicated to a *sūra* by *sūra* analysis of Qur’anic argumentation in the technical language of *jadāl*. See Najm ad-Dīn Sulaymān b. ‘Abd al-Qawī aṭ-Ṭūfī, *‘Alam al-Jadhal fī ‘Ilm al-jadal*, ed. by Wolfhart Heinrichs (Wiesbaden: F. Steiner Verlag, 1987), 90–209. See also Rosalind Ward Gwynne, *Logic, Rhetoric, and Legal Reasoning in the Qur’ān: God’s Arguments* (London: Routledge Curzon, 2004).

129 *Al-Jadal al-Ḥasan* (see Hallaq, *History*, 136; Belhaj, *Argumentation et Dialectique*, 42 ff.) presumably sanctioned by the likes of Q. 16:125: “Debate with them in the best way” (*wa jādilhūm billatī hiya aḥsan*).

130 For example, the *reductio* argument in the form of a *modus tollens* is apparent in [Q. 21:22]: “If there were, in [heaven and earth], gods besides God, then [heaven and earth] would have been corrupted”. See Walter Edward Young, “On the Logical Machinery of Post-Classical Dialectic: The *Kitāb ‘Ayn al-Nazar* of Shams al-Dīn al-Samarqandī (d. 722/1322),” *Methodos* (online) 22 (2022), <https://journals.openedition.org/methodos/9053> (accessed March 6, 2023), ¶¶11, 17, 21, *passim*; and Gwynn, *Logic, Rhetoric, and Legal Reasoning*, 176.

131 Rahman coined and developed the notions of “dialogical constitution of meaning” and “dialogical meaning explanation” in several papers and chapters. See especially chapters 10–11 of Shahid Rahman, Zoe McConaughy, Ansten Klev and Nicolas Clerbout, *Immanent Reasoning or Equality in Action: A Plaidoyer for the Play Level* (Cham: Springer, 2018). For these notions in Islamic contexts, see Shahid Rahman and Walter Edward Young, “Argumentation and Arabic Philosophy of Language: Introduction,” *Methodos* (online) 22 (2022), <https://journals.openedition.org/methodos/8833> (accessed March 6, 2023), ¶¶24–29.

132 16–18 April 2022.

expressions (e.g., “if A then B”), the meanings of which are dialogically constituted, and, after such a process, the larger assertion or argument may be justified. However, much trickier is the question of whether there is a kind of dialogical constitution of meaning that happens at the meta level, where the meaning of a complex dialectical objection, for example, or at least some critical part of that meaning, is constituted (as we see in *qiyās*-dialectic metatheory) by past dialectic about how that objection relates to other objections beneath an overarching set of higher principles also forged in past dialectic.

Rahman observed that, while seemingly meta level concerns—like, e.g., establishing the relation of concepts before the connectives, or determining how one concept relates to another in defining a type of *qiyās* objection—in fact are made explicit at the object level, assertions such as “all *i’tirāḍāt* go back to either *istifsār* or *man*” are indeed happening at the meta level and thus correspond to what is called in dialogical logic the “strategy level.”¹³³ The justifications of such assertions, however, being prone to infinite regress, prompted Paul Lorenzen to break the cycle with the determining factor of “admissibility” (Zulässigkeit).¹³⁴ Given these considerations, Rahman suggests that an admissibility rule in the case of assertions like “all *i’tirāḍāt* go back to *istifsār* or *man*” would consist in reducing individuals among the plurality of *qiyās*-objection subtypes (e.g., *fasād al-i’tibār*, or *qalb*, or *kasr*) to formulations consisting only in demands for explanation and/or denials—the further elaboration and detailing of which constitute an exciting avenue for exploration.

A third and final question emerges from an understanding that *qiyās*-dialectic metatheories all evolved in manifestly (and dialectically) disputa-

133 As distinct from the “play level.” See Nicolas Clerbout and Zoe McConaughy, “Dialogical Logic,” *The Stanford Encyclopedia of Philosophy* (Fall 2022 Edition), ed. by Edward N. Zalta and Uri Nodelman, <https://plato.stanford.edu/archives/fall2022/entries/logic-dialogical/> (accessed March 6, 2023), especially where the authors note: “The game rules (particle rules and structural rules) constitute what is called the *play level* of the dialogical approach—constituting the backbone of dialogical logic in the Lorenzen and Lorenz tradition—which should be distinguished from the *strategy level*, the dialogical counterpart to demonstration The play level is constituted by individual plays developed according to the game rules, whereas the strategy level consists in a certain perspective on all the possible plays regarding the same initial thesis. Validity belongs to the strategy level, but the meaning of statements and determining what logic is currently being used both belong to the play level through the game rules.”

134 Whereby admission of new rules is contingent upon showing, step by step, how the new rule can be formulated in terms of the old. In the concluding section of Rahman and Young, “Outside the Logic of Necessity,” Rahman argues that many *qiyās* arguments involve not logical but semantics admissibility—admitting not new logic rules, but new ways of constituting the ruling’s meaning.

tious contexts (i.e., scholarly debates). What do the first two questions suggest of an interrelation between (1) Ahmed's elucidation of metatheory filling the gaps of underdetermination, (2) Rahman's notion of "dialogical constitution of meaning," and (3) general and specific notions of "the dialectical forge"?¹³⁵ Is the dialectical forge simply the broader, formative dynamic within which the more particular processes of dialogical constitution of meaning and metatheory mitigating underdetermination played out? Or are these latter in fact more fundamental, more axiomatic, themselves key dynamics which, along with others,¹³⁶ powered the engine of the dialectical forge?

Wherever these questions lead, perhaps the best way forward in resolving the relations and interactions between these at-first-glance complementary theories may have already been indicated by our premodern uṣūlī-dialecticians themselves. That is, perhaps these questions are best approached through the same sort of metatheorizing, syncretizing, and synthesizing by which al-Ījī, az-Zarkashī, Molla Fenârî, et al., elaborated upon the master-category objections, and thus disclosed the secret of their ascendancy.

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135 As most fully elaborated at the end of Young, *Dialectical Forge* (530–535; 543–551).

136 For example, "(1) the 'three-stage cycle,' whereby *uṣūl* premises are forged in dialectic, then used in *ijtihād*, then employed in the dialectical testing of that *ijtihād* (in both R's justification of *istidlāl*, and in Q's *i'tirāḍ*); (2) a consequence of this cycle: the 'bequeathing of dialectical axioms' (both 'givens' and 'motives') from the *jadāl* argumentation episteme to the *uṣūl al-fiqh* argumentation episteme; and (3) the augmented effect: the 'dynamic symbiosis and co-evolution' of *jadāl* and *uṣūl al-fiqh* systems towards greater and greater degrees of refinement." Or the "*ijtihād*ic anticipation of *jadāl*," whereby "the public procedure of *jadāl* may be said to intrude into the private procedure of *ijtihād*, insofar as we assume the *mujtahid* to anticipate the publication and subsequent debate of his *ijtihād*ic solution, whether face-to-face, or through a literary medium," which process engendered "another crossing of currents between the argumentation epistemes of *jadāl* and *uṣūl al-fiqh*—another entry point for the argument axioms of dialectic." Or "dialectic defining what is *endoxon*," whereby "juridical *jadāl* ... at once depended upon and determined what was *endoxon* for the Muslim jurist." Or other components of the dialectical forge model (Young, *Dialectical Forge*, 532–533, 547, and pages cited in previous note).

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Bibliography

- Ahmed, Asad Q. "The Structure of *Istiṣhāb* in Classical *Uṣūl al-Fiqh*." In *Islamic Legal Theory: Intellectual History and Uṣūl al-Fiqh*. Ed. by R. Gleave and M. Bedir. Leiden: Brill, [forthcoming].
- Ahmed, Asad Q. "Underdetermination in Late Postclassical Ḥanafī Legal Theories." *Oriens* 46, no. 1–2 (2018): 129–158.
- Bāji, Abū l-Walīd Sulaymān al-. *Kitāb al-Minhāj fī Tartīb al-Ḥijāj (L'art de la Polémique: Édition Critique d'al-Minhāj de Bāji)*. Ed. by 'Abd al-Majīd Turkī. Paris: Maisonneuve et Larose, 1978.
- Baṣrī, Abū l-Ḥusayn Muḥammad al-. *Kitāb al-Mu'tamad fī Uṣūl al-Fiqh*. Ed. by Muḥammad Ḥamīd Allāh, Muḥammad Bakīr, and Ḥasan Ḥanafī. Damascus: al-Ma'had al-'Ilmī al-Faransī li-d-Dirāsāt al-'Arabiyya bi-Dimashq, 1964–1965.
- Baṣrī, Abū al-Ḥusayn Muḥammad al-. *Kitāb al-Qiyās ash-Shar'ī*. In *idem. Kitāb al-Mu'tamad fī Uṣūl al-Fiqh*. Ed. by Muḥammad Ḥamīd Allāh, Muḥammad Bakīr, and Ḥasan Ḥanafī. Damascus: al-Ma'had al-'Ilmī al-Faransī li-d-Dirāsāt al-'Arabiyya bi-Dimashq, 1964–1965, 2:1029–1050.
- Bazdawī, Abū l-Ḥasan Fakhr al-Islām 'Alī b. Muḥammad al-. *Uṣūl al-Bazdawī: Kanz al-Wuṣūl ilā Ma'rifat al-Uṣūl ... wa ma'ahu Takhrīj Aḥādīth Uṣūl al-Bazdawī* Ed. by Sā'id Bakdash. Third Printing. Cairo: Dār as-Salām, 2021.
- Belhaj, Abdessamad. *Argumentation et Dialectique en Islam: Formes et Séquences de la Munāẓara*. Louvain: Presses Universitaires de Louvain, 2010.
- Calder, Norman. "Uṣūl al-Fiqh." *Encyclopædia of Islam*, 2nd Edition. 12 vols. with indexes, etc. Edited by P.J. Bearman, Th. Bianquis, C.E. Bosworth, E. van Donzel, W.P. Heinrichs et al. Leiden: E.J. Brill, 1960–2005.
- Clerbout, Nicolas and Zoe McConaughy. "Dialogical Logic." *The Stanford Encyclopedia of Philosophy* (Fall 2022 Edition). Ed. by Edward N. Zalta and Uri Nodelman. <https://plato.stanford.edu/archives/fall2022/entries/logic-dialogical/>. Accessed March 6, 2023.
- Dabūsī, Abū Zayd 'Ubayd Allāh b. 'Umar ad-. *Taqwīm al-Adilla fī Uṣūl al-Fiqh*. Ed. by Khalīl Muḥyī d-Dīn al-Mays. Beirut: Dār al-Kutub al-'Ilmiyya, 2001.

- Fallūsī, Mas'ūd. *Al-Jadal 'inda l-Uşūliyyīn: bayna n-Nazariyya wa-t-Taṭbīq*. Riyadh: Maktabat al-Rushd Nāshirūn, 2003.
- Fanārī, Shams ad-Dīn Muḥammad b. Ḥamza al- [Molla Fenārī]. *Fuṣūl al-Badā'ī' fī Uşūl ash-Sharā'ī'*. 2 vols. Ed. by Muḥammad Ḥasan Muḥammad Ḥasan Ismā'īl. Beirut: Dār al-Kutub al-'Ilmiyya, 2006.
- Fanārī, Shams ad-Dīn Muḥammad b. Ḥamza al- [Molla Fenārī]. *Tahqīq Kitāb Fuṣūl al-Badā'ī' fī Uşūl ash-Sharā'ī' li-Shams ad-Dīn Muḥammad b. Ḥamza al-Fanārī* [d. 834 H] *min awwal al-ijmā' ilā nihāyat al-kitāb*. Ed. by Yāsir b. Muḥammad b. Şāliḥ Hawsāwī. MA Thesis, Jāmi'at Umm al-Qurā, 1428 [2007].
- Gelenbevi [al-Kalanbawī], Shaykh Zādah Ismā'īl b. Muṣṭafā. *Risālat al-Ādāb fī Ādāb al-Baḥṭh wa-l-Munāzara ... muḍāfān ilayhā Ḥāshiyatā li-l-'Alāmatayn ash-Shaykh 'Abd al-Raḥmān b. Muḥammad al-Baynjūnī* [sic], *ash-Shaykh 'Umar b. Muḥammad Amīn al-Qarah Dāghī*. Ed. by Markaz al-Hāshimiyya li-d-Dirāsāt wa Tahqīq at-Turāth. Istanbul: al-Maktaba al-Hāshimiyya, 2018.
- Gwynne, Rosalind Ward. *Logic, Rhetoric, and Legal Reasoning in the Qur'ān: God's Arguments*. London: Routledge Curzon, 2004.
- Hallaq, Wael. *A History of Islamic Legal Theories: An Introduction to Sunni Uşūl al-Fiqh*. Cambridge; New York: Cambridge University Press, 1997.
- Hallaq, Wael. "A Tenth-Eleventh Century Treatise on Juridical Dialectic." *Muslim World* 77 (1987): 197–228.
- Hasan, Ahmad. *Analogical Reasoning in Islamic Jurisprudence: a Study of the Juridical Principle of Qiyās*. Islamabad: Islamic Research Institute, 1986.
- Ījī, 'Aḍud ad-Dīn al-, et al. *Sharḥ Mukhtaṣar al-Muntahā al-Uşūlī li-Abī 'Umar 'Uthmān ibn al-Ḥāḍib al-Mālikī; Sharaḥu 'Aḍud ad-Dīn 'Abd al-Raḥmān al-Ījī wa 'alā l-Mukhtaṣar wa-sh-Sharḥ Ḥāshiyat Sa'd ad-Dīn at-Taftāzānī wa-Ḥāshiyat as-Sayyid ash-Sharīf al-Jurjānī wa-'alā Ḥāshiyat al-Jurjānī Ḥāshiyat Ḥasan al-Harawī l-Fanārī wa-'alā l-Mukhtaṣar wa-Sharḥu wa Ḥāshiyat as-Sa'd wa-l-Jurjānī Ḥāshiyat Muḥammad Abū l-Faḍl al-Warrāqī l-Jīzāwī*. 3 vols. Ed. by Muḥammad Ḥasan Muḥammad Ḥasan Ismā'īl. Beirut: Dār al-Kutub al-'Ilmiyya, 2004.
- Lane, Edward William. *An Arabic-English Lexicon*. 8 vols. Beirut: Librarie du Liban, 1968.
- Māwardī, Abū l-Ḥasan 'Alī b. Muḥammad al-. *Al-Ḥawī al-Kabīr: fī Fiqh Madhhab al-Imām ash-Shāfi'ī ... wa huwa Sharḥ Mukhtaṣar al-Muzanī*. 19 vols. Ed. by 'Alī Muḥammad Mu'awwaḍ and 'Ādil Aḥmad 'Abd al-Mawjūd. Beirut: Dār al-Kutub al-'Ilmiyya, 1994.
- Miller, Larry Benjamin. *Islamic Disputation Theory: The Uses & Rules of Argument in Medieval Islam*. Cham: Springer, 2020.
- Rahman, Shahid, and Walter Edward Young. "Argumentation and Arabic Philosophy of Language: Introduction." *Methodos (online)* 22 (2022). <https://journals.openedition.org/methodos/8833>. Accessed March 6, 2023.
- Rahman, Shahid, and Walter Edward Young. "In Existence and in Nonexistence: Types,

- Tokens, and the Analysis of *Dawarān* as a Test for Causation.” *Methodos* (online) 22 (2022). <https://journals.openedition.org/methodos/8838>. Accessed March 6, 2023.
- Rahman, Shahid, Muhammad Iqbal, and Youcef Soufi. *Inferences by Parallel Reasoning in Islamic Jurisprudence: Al-Shīrāzī’s Insights into the Dialectical Constitution of Meaning and Knowledge*. Cham: Springer, 2019.
- Rahman, Shahid, and Walter Edward Young. “Outside the Logic of Necessity: Deontic Puzzles and ‘Breaking’ Compound Causal Properties in Islamic Legal Theory and Dialectic.” In *Fallacies in the Arabic, Byzantine, Hebrew and Latin Traditions*. Ed. by Laurent Cesalli, Leone Gazziero, Charles Manekin, Shahid Rahman, Tony Street, and Michele Trizio. *Ad Argumenta. Quaestio special issues*. Turnhout: Brepols, 2023, 153–185.
- Rahman, Shahid, Zoe McConaughy, Ansten Klev and Nicolas Clerbout. *Immanent Reasoning or Equality in Action: A Plaidoyer for the Play Level*. Cham: Springer, 2018.
- Samarqandī, Shams ad-Dīn Muḥammad al-. *Risāla fī Ādāb al-Baḥth*. In Zakariyyā’ b. Muḥammad al-Anṣārī, *Faṭḥ al-Wahhāb bi-Sharḥ al-Ādāb: wa-huwa Sharḥ ‘alā l-Ādāb fī l-Baḥth wa-l-Munāzara li-l-Imām Muḥammad b. Ashraf as-Samarqandī ... wa-ma’ahu Ḥāshiyat al-‘Allāma Muḥammad b. Aḥmad b. ‘Arafah ad-Dasūqī*. Ed. by ‘Arafah ‘Abd ar-Raḥmān Aḥmad ‘Abd ar-Raḥmān an-Nādī. Kuwait: Dār aḍ-Ḍiyā’ li-n-Nashr wa-t-Tawzī’, 2014, 73–94.
- Sānū, Quṭb Muṣṭafā. *Mu’jam Muṣṭalahāt Uṣūl al-Fiḥ, ‘Arabī-Inkilizī*. Beirut: Dār al-Fikr al-Mu’āṣir, 2000.
- Sighnāqī, Ḥusām ad-Dīn Ḥusayn b. ‘Alī as-. *Al-Kāfī Sharḥ al-Bazdawī*. 5 vols. Ed. by Fakhr ad-Dīn Sayyid Muḥammad Qānat. Riyadh: Maktabat al-rushd, 2001.
- Taftāzānī, Sa’d ad-Dīn at-. *Ḥāshiyat Sa’d ad-Dīn at-Taftāzānī* [‘alā Sharḥ Mukhtaṣar al-Muntahā]. In ‘Aḍud ad-Dīn al-Ījī et al. *Sharḥ Mukhtaṣar al-Muntahā al-Uṣūlī li-Abī ‘Umar ‘Uthmān ibn al-Ḥāḍib al-Mālikī; Sharaḥahu ‘Aḍud ad-Dīn ‘Abd al-Raḥmān al-Ījī wa ‘alā l-Mukhtaṣar wa-sh-Sharḥ Ḥāshiyat Sa’d ad-Dīn at-Taftāzānī wa-Ḥāshiyat as-Sayyid ash-Sharīf al-Jurjānī wa-‘alā Ḥāshiyat al-Jurjānī Ḥāshiyat Ḥasan al-Harawī l-Fanārī wa-‘alā l-Mukhtaṣar wa-Sharḥuhu wa Ḥāshiyat as-Sa’d wa-l-Jurjānī Ḥāshiyat Muḥammad Abū l-Faḍl al-Warrāqī l-Jizāwī*. 3 vols. Ed. by Muḥammad Ḥasan Muḥammad Ḥasan Ismā‘īl. Beirut: Dār al-Kutub al-‘Ilmiyya, 2004.
- Tūfī, Najm ad-Dīn Sulaymān b. ‘Abd al-Qawī aṭ-. *‘Alam al-Jadhal fī ‘Ilm al-Jadal*. Ed. by Wolfhart Heinrichs. Wiesbaden: F. Steiner Verlag, 1987.
- Wizārat al-Awqāf wa-sh-Shu’ūn al-Islāmiyya. *Al-Mawsū’a al-Fiḥiyya*. 45 vols. Kuwait: Wizārat al-Awqāf wa-sh-Shu’ūn al-Islāmiyya, 1986–2000.
- Young, Walter Edward. *The Dialectical Forge: Juridical Disputation and the Evolution of Islamic Law*. Cham: Springer, 2017.
- Young, Walter Edward. “On the Logical Machinery of Post-Classical Dialectic: The *Kitāb ‘Ayn al-Nazar* of Shams al-Dīn al-Samarqandī (d. 722/1322).” *Methodos* (online) 22 (2022). <https://journals.openedition.org/methodos/9053>. Accessed March 6, 2023.

- Young, Walter Edward. "Molla Fenârî and Pre-Imperial Ottoman Argumentation Theory." In *Osmanlı'da İlm-i Mantık ve Münazara*. Ed. by Mehmet Özturan, Yusuf Daşdemir, and Furkan Kayacan. Üsküdar, İstanbul: İSAR Yayınları, 2022, 493–550.
- Zarkashî, Abū 'Abd Allāh Badr ad-Dīn Muḥammad az-. *Al-Baḥr al-Muḥīṭ fī Uṣūl al-Fiqh*. 6 vols. Ed. by 'Abd al-Qādir 'Abd Allāh al-'Ānī et al. Kuwait: Wizārat al-Awqāf wa-sh-Shu'ūn al-Islāmiyya, 1992.
- Zarkashî, Abū 'Abd Allāh Badr ad-Dīn Muḥammad az-. *Al-Baḥr al-Muḥīṭ fī Uṣūl al-Fiqh*. 4 vols. Ed. by Muḥammad Muḥammad Tāmir. Beirut: Dār al-Kutub al-'Ilmiyya, 2000.

The Negative-Predicate Proposition in Later Arabic Logic

Asad Q. Ahmed

1 Introduction

This brief article explores an invention in the field of post-classical (ca. 1200–1900 CE) Arabic logic that was meant to circumvent various problems related to propositional semantics. In view of the collection of various entrenched and general rules established in the tradition, certain seemingly-true claims emerged as problematic, leaving one with the limited possibility that they should be abandoned as false, be declared to be exceptions to the rules, or determined to be nonsensical. Similarly, in preserving a set of such rules and principles, certain other equally well-established ones appeared compromised. In other words, as a whole, the system appeared to be strained under the weight of its own principles. Post-classical logicians invented various ways to engage such issues; and one among them was the negative-predicate proposition (*qaḍiyya sālibat al-maḥmūl*).¹

The article's anchor is the presentation of the negative-predicate proposition in the *Sullam al-ʿulūm* of Muḥibballāh al-Bihārī (d. 1119/1707).² I focus on this late reception and engagement with the topic via some of the commentaries on this work. Insofar as the *Sullam* was part of a continuous dialectical tradition, I also explore discussions of this topic in three works of logic that played an influential role in the South Asian tradition.³ Thus, the article is divided in the following manner. In the first part, I highlight the relevant principles whose common validity produced the problems that motivated the

1 I use “negative-predicate proposition” as a shorthand for “a proposition whose predicate is a negative proposition.”

2 On the author and this work, see Asad Q. Ahmed, *Palimpsests of Themselves: Logic and Commentary in Postclassical Muslim South Asia* (Oakland/Berkeley: University of California Press, 2022), Chapters 1 and 2.

3 On works central to the study of logic in South Asia, See Asad Q. Ahmed, “Logic in the Khayrābādī School of India,” in *Law and Tradition in Classical Islamic Thought: Studies in Honor of Professor Hossein Modarressi*, ed. Michael Cook, Najam Haider, Intisar Rabb, and Asma Sayeed (New York: Palgrave Macmillan, 2013), 227–245.

invention of the new kind of proposition; here I rely mostly on the tradition of the *Sullam*. In the second part, I present discussions of the negative-predicate proposition in Quṭb ad-Dīn at-Taḥṭānī's (d. 766/1365) *Sharḥ al-Maṭālī'* of Sirāj ad-Dīn al-Urmawī (d. 682/1283), As-Sayyid ash-Sharīf al-Jurjānī's (d. 816/143) supercommentary on the *Shamsiyya* of Najm ad-Dīn al-Kātibī (d. 675/1276), and Jalāl ad-Dīn ad-Dawānī's (d. 908/1502/3) commentary on the *Tahdhīb al-Manṭiq* of Sa'd ad-Dīn at-Taftāzānī (d. 793/1390). These three texts constituted the textual Sitz im Leben of the discussion in the *Sullam* tradition. In the third and final part, I summarize the discussion of this topic in the *Sullam* tradition mainly via the commentary of Mullā Mubīn (d. 1225/1810).

2 Basic Principles and Problems

In late logic—especially in the *Sullam al-'Ulūm*—a major feature of the discipline emerges as the defense of recognizable propositional claims and semantics that appear to produce systemic inconsistencies. In a large number of cases, such propositional features are brought under scrutiny by virtue of their breach of some established principle of logic. In reflecting on these issues, the texts take up any number of strategies to find a solution: they highlight a formal fallacy in the argument; or they readjust the ontological commitments underlying the claim; or they deploy some other established principle of argumentation and marginalize the principle that produced the aporia; or they demonstrate that the untenable outcome is due to different modes of the mental consideration of the same object of knowledge; or they invent a novel paradigm of analysis. In various ways, the most dogged and recurring problem of propositional semantics that the *Sullam* engages concerns the subject terms of affirmative propositions. The principle that a number of cases militate against is spelled out by al-Bihārī in the following recognizable terms.

2.1 Principle 1

[In the proposition 'Every J is A'] by J we do not mean that whose reality is J. Nor [do we mean] that which is described by it. Rather, [we mean] something more general than these two [senses]. [We mean] those individual instances of which J is true. These individual instances may be real, such as the particular instances or species instances. Or they may be [instances] that are [a product of mental] consideration, such as animal-genus. For [the latter] is more specific than animal *simpliciter*.⁴

4 Ahmed, *Palimpsests*, 166.

An early commentator, Qāḍī Mubārak (d. 1162/1749), explains this lemma by pointing out that the basic requirement in one's interpretation of "J" is that it must refer to individual instances, whether these latter have a particular nature that is mind-independent (*ḥaqīqī*) or by virtue of a mental consideration (*i'tibārī*); other commentators remind us that this interpretation reduces to the demand for the existence of the instances of "J" in *some* form.⁵ Now we are familiar with the challenges such a requirement poses in the history of logic. Primarily, the difficulties are most vexing in cases where "J" is an impossibility or absurdity or where the predicate is existential. For in the former case, "J" has no underlying instances; and in the latter, if existence is taken to be superadded to the subject in the manner of a predicate, then the subject cannot have existential import prior to the inherence of existence. This latter case is relevant for the discussions of the negative-predicate proposition, and so I take it up briefly before turning to the main topic of this article. The conundrum is grounded in a second important principle, namely, that the ontological status of the subject term's referent must be at least of the same grade as that of the predicate. The *Sullam* tradition highlights this in the following terms.

2.2 Principle 2

It is commonly-held (*mashhūr*) that the existence of a thing for a thing in a locus is derivative of the existence of that for which it exists (*thubūtu sh-shay'i li-shay'in fī ḥarfīn far'u thubūti l-muthbat lahu*).⁶

In other words, if B were to exist for A, then A must exist within the same ontological plane as B; in this sense, the existence of B is dependent on the existence of A. The tradition then problematizes the statement "Zayd exists", since in such a case and if existence is superadded to Zayd as a predicate, then Zayd must already be existent for existence to apply. For a claim of existence to apply to that prior Zayd, he must also have a prior existence. And so on *ad infinitum*.⁷

5 Qāḍī Muḥammad Mubārak, *Kitāb Sullam al-'Ulūm wa-ḥāshiyatuhū l-mashhūra bi-l-Qāḍī ma'a minḥuyātihī*. (Al-Maṭba'a al-Malikiyya, 1887), 187.

6 Fīrūz b. Maḥabba, *Sirāj Wahhāj sharḥ Sullam al-'Ulūm* (Raza Rampur Library MS 3400/4341M (lacks folio numbers); 'Abdallāh Muḥammad as-Sā'inpūrī, *Sharḥ Sullam al-'Ulūm* (Rampur Raza Library MS. 3399/588D), 82r. Both these commentators mention this principle to highlight that al-Bihārī adopted a modified version, in order to overcome the problems associated with this articulation. For further, see below.

7 Mubārak, *Kitāb Sullam*, 19.

Thus the requirement that the referent of the subject term must exist, coupled with the principle that the existence of the predicate is derivative of this existence of the subject, leads to a conundrum. In this case, as I hinted just above, refuge is found in the adoption of a different ontology that undergirds propositional semantics. Thus another commentator of the *Sullam*, Baḥr al-ʿUlūm (d. 1225/1810), writes:

It is a commonly-held view that the existence of a thing for a thing is derivative of the existence of that for which the thing exists; indeed they claim necessity [for this doctrine]. Then a refutation was leveled against them by means of examples such as 'Zayd is existent'. So the Verifier ad-Dawānī reverted from this [position] and held fast to [the doctrine] of entailment. The author [of the *Sullam*] changed this rule, following the author of the *Ufūq Mubīn*, stating 'The existence of a thing for a thing in an ontological locus is derivative of the actuality of that for which it exists ... and it entails its existence in that ontological locus.' When the author of the *Ufūq Mubīn* [had] sensed [the refutation of the common view] by examples such as 'Every man is an animal' and 'Zayd is possible', he stated, 'The nature of the affirmative copula requires derivation/dependence (*al-far'īyya*) with a view to the establishment (*taqarrur*) of the subject and [it requires] entailment [with a view] to its existence' ... He then stated, 'As for one who does not believe in [the doctrine of] simple generation (*ja'l basīṭ*), well, it is more befitting that he be content with [the doctrine of] entailment [i.e., that the existence of that which is said of something entails the existence of that of which it is said].'⁸

In the briefest of terms, the solution accepted by the *Sullam* is rooted in the work of Mīr Dāmād, the author of the aforementioned *Ufūq Mubīn*. It suggests that, if one adopts the ontology of simple generation, namely, that the establishment and actuality of the quiddity *is* its very existence—not that existence is superadded—then the existence of something for it is dependent on and derivative of this actuality. As such, one does not need a prior existence of Zayd for existence to be predicated of him. Further, the existence of this predicate of existence for Zayd as a true propositional claim entails that Zayd should be existent in at least the same ontological grade. In this case, the solution being offered is by means of an adjustment to the ontology of sim-

8 Muḥammad b. Muḥammad Baḥr al-ʿUlūm, *Sharḥ Sullam Baḥr al-ʿUlūm ma'a minhuyāt* (Delhi: Maṭba'ī Mujtabā'ī, 1892), 153.

ple generation. Nevertheless, as we will observe below, this approach does not offer a full arsenal of solutions to problems associated with Principles 1 and 2.

A similar set of problems presents itself when the subject term is empty due to its impossibility, thus violating both the aforementioned principles in affirmative propositions. Such cases are especially troublesome as they appear to be intuitively true. Examples include “The absurd entails the absurd”, “The absurd has no form in the mind”, “The absurd is impossible”, and the ubiquitous “The Participant with the Creator is impossible”. A resolution of such cases is especially important, since some of them constitute principles of proof. For example, “the absurd entails the absurd” is the lynchpin condition in *ad absurdum* proofs, where the absurdity of the conclusion that is derived from the combination of a given premise and the assumption of the contradictory of an earlier conclusion entails that the latter itself must have been absurd. Or the resolution is required, so that universal logical rules are maintained; for example, if it is true that “the possible is a thing” then it must also be true, by contradictory conversion, that “That which is not a thing is non-possible”. This simple contradictory conversion violates Principle 1, since that which is not a thing has no instances and cannot be the subject of an affirmative proposition. How can one parse these propositions without undoing the foundational rules for affirmative propositions? It is in view of these vexing impasses that al-Bihārī introduces the negative-predicate proposition in the section on predication. He writes:

The later [logicians] invented a proposition and called it a negative-predicate [proposition]. They distinguished it from a [traditional] negative [proposition] in that, in the [traditional] negative [proposition], the two extremes are conceptualized and a judgment of negation is passed, whereas, in the negative-predicate [proposition,] the latter negation reverts, and is predicated of the subject. They judged that the truth of affirmation in [this proposition] does not require the existence [of the subject], just as in the case of a [traditional] negative [proposition]. Rather, it is the negative [negative-predicate proposition] that requires [the existence of the subject], just as in [the case of a traditional] affirmative [proposition]. Your natural inclination judges that the affirmative copula *simpliciter* requires the existence [of the subject]. Given this [latter view], it is said that the truth is that [this new type of proposition] is a mental proposition; all conceptualized senses exist with respect to the way things are given, either as obtaining or as determined [to obtain]. Thus there is a mutual entailment with respect to truth between [the negative-predicate

affirmative proposition] and the [traditional] negative [proposition]. Yet [this position] has its problems. So recall [them]!⁹

Al-Bihārī leaves the fuller explication of this invention and the issues associated with it to his commentators. Before turning to the latter exercises on this lemma in the *Sullam* tradition, I offer a few remarks on their prehistory by means of a summary examination of three relevant earlier texts.

3 Three Engagements with the Negative-Predicate Proposition

3.1 *At-Taḥṭānī on al-Urmawī's Maṭālī'*

In the section on divested and invested propositions, al-Urmawī briefly expounds on the correlations among the four kinds of propositions, namely, the affirmative and negative invested and the affirmative and negative divested. The four forms of the proposition are: A is B (affirmative invested); A is not B (negative invested); A is non-B (affirmative divested); A is not non-B (negative divested). Three relations are asserted by him. First, the invested affirmative is the contradictory of the invested negative and the divested affirmative is the contradictory of the divested negative. In either pair, when one is true, the other is false. Second, in a pair of an affirmative invested and an affirmative divested proposition, both cannot be true, but both can be false. In his commentary, at-Taḥṭānī explains that this is so because a subject cannot have two contradictory premises; however, both premises can be false, because the subject can be non-existent. In a pair of a negative invested and negative divested proposition, both cannot be false, although both may be true. At-Taḥṭānī explains that their mutual falsity cannot be granted, because this would amount to the mutual truth of the affirmative invested and affirmative divested propositions; but this was just shown to be impossible. However, both the negative invested and negative divested propositions can be true, since the subject of both can be non-existent. Third, an affirmative invested proposition is more particular than a negative divested proposition and an affirmative divested proposition is more particular than a negative invested proposition. At-Taḥṭānī explains that this is so, for example, because the propositions that are particular require the existence of the subject, whereas the general ones do not. This of course implies that if the particular is true, so is the general, but not vice versa.¹⁰ Two key ideas

⁹ Ahmed, *Palimpsests*, 170.

¹⁰ Quṭb ad-Dīn at-Taḥṭānī, *Sharḥ al-Maṭālī' fī l-Mantiq* (Intishārāt-i Quṭbī Najafī: Qom, nd), 139 ff.

may be extracted in these discussions: that the particular-general relations are broadly conceived to be such that the particular is restricted by a requirement that does not restrict the general; and in a number of cases, the requirement of the existence of the subject term and the absence of such a requirement determines such particular-general relations.

It is in line with these considerations, along with the introduction of a distinguishing mark of divested propositions, namely, that the predicate in such cases must be a privative of the sort that would otherwise belong to the subject by an aspect of its nature (e.g., non-seeing for human), or belong to the nature of some layer of universal under which it falls, that a challenge from Avicenna is introduced into the discourse.¹¹ Al-Urmawī and at-Taḥṭānī consider the following syllogism from him: “substance is not an accident; everything that is not an accident can dispense with a substrate; so a substance can dispense with a substrate”. Avicenna points out that this conclusion is valid by the first figure, by virtue of the fact that substance is included among those things that are not accidents. The problem, however, is that moods of first figure syllogisms require that the minor premise be an affirmative proposition; such is not the case here. A possible solution, therefore, is to interpret the minor premise as a divested affirmative proposition. However, this cannot be granted, since “substance is non-accident” would require accident to be within the scope of the nature of substance, much as “man is non-seeing” requires that “seeing” be within the scope of the nature of “man”.¹²

A problem with this analysis is then highlighted from the *Kashf al-Asrār* of Afḍal ad-Dīn al-Khūnājī (d. 646/1248). If a divested affirmative interpretation of the minor premise were to be granted in view of the requirement that the minor premise must be affirmative, then one would have to grant that the minor premise in the following syllogism is also an affirmative divested proposition: “the void is not existent; everything that is not existent is not sensed; so the void is not sensed”. Yet, if the minor premise is interpreted as an affirmative divested proposition, as required by the rules of syllogistic productivity, then it would necessitate the existence of the subject (the void), which does not obtain in this case. As we can see, despite the instrumentalization of divested propositions, the crux of the conundrum has reverted to the issue of the existential import of the subject term, i.e., Principle 1 noted above. In such cases, then, the minor premise must be read as some kind of negative, while still satisfying the condition of syllogistic productivity. This would require an instrument that

11 Various scopes of the same idea are presented in the text.

12 At-Taḥṭānī, *Sharḥ al-Maṭālī*, 140.

would also allow the relation in the minor premise to be repeated in the major premise; in other words, the minor term must be included in the middle term of a negative proposition—one that still satisfies syllogistic rules—in such a manner that the middle can serve as the repeated subject of the major premise. It is at this juncture that the negative-predicate proposition is introduced. We read as follows.

The affirmative negative-predicate [proposition] does not require the existence of the subject because it resembles a [traditional] negative [proposition]. For if you say that when we say that 'J is not B' and if the negation is part of the predicate, then the proposition is an affirmative divested; and if [the negation] is extraneous to the predicate, then it is a negative [proposition]; so the negative-predicate [proposition] cannot be conceptualized [given that all options have been exhausted]. We say that the negation is external to the predicate in the negative [proposition] and in the negative-predicate [proposition], except that, in the negative-predicate [proposition], there is an additional consideration. For in a negation, we conceptualize the subject and the predicate, and then [we conceptualize] the affirmative relation between the two; [then] we remove this relation [in a traditional negative proposition]. In¹³ the negative-predicate [proposition] we conceptualize the subject, the predicate, and the affirmative relation; and then we remove it. *Then* we revert and predicate this negation of the subject. For when the affirmation of the predicate is not true of the subject, its negation is true of it. Thus the consideration of the negation is repeated in [the proposition], as opposed to the case of the [traditional] negative [proposition]. For in the latter, there are four things: the conceptualization of the subject, the conceptualization of the predicate, the conceptualization of the affirmative relation, and [the conceptualization] of its negation. In the negative-predicate [proposition] there are five [things]: these four [aforementioned] things, along with the predication of the negation for the subject.¹⁴

Thus a divested proposition is different from a traditional negative one in that, in the former, the particle of negation is included in the predicate, whereas, in the latter, it is extraneous to it. Further, in a traditional negative proposition, one conceptualizes the subject, the predicate, the link between the two, and

¹³ Reading *wa-fī* for sense.

¹⁴ At-Taḥṭānī, *Sharḥ al-Maṭālī*, 141f.

then the negation of this link. In the negative-predicate proposition, one takes the negation of the link between the two extremes and predicates this negation of the subject. This is tantamount to affirming a negative propositional claim of the same subject term.

Next, at-Taḥṭānī proceeds to outline some differences between a traditional negative proposition and an affirmative negative-predicate one: if the subject is J and the predicate is B, then the former is interpreted to mean that B is negated of J, whereas the latter is interpreted to mean that one affirms that J is a thing of which the predicate is negated. Further, as the two propositions are considered equivalent, the latter would also not require the existence of the subject, although it is an affirmative. At-Taḥṭānī then reminds the reader that this kind of proposition is mentioned precisely to overcome the syllogistic difficulty noted above: the minor premise, as an affirmative, only requires the existence of the subject when it is a traditional affirmative proposition; as an affirmative negative-predicate proposition, this requirement does not hold. The latter type of proposition affirms the fact of the negation of the tie between the predicate and the subject *of* the subject; in the major premise, the subject is repeated as *this* predicate. In other words, the syllogism might be read as follows: “J is such that the fact of negation of B is true of it; whatever is such that the fact of the negation of B is true of it is A”. At-Taḥṭānī mentions some issues related to this device, but we will concern ourselves with them more fully following its expositions in two other sources.

3.2 *Al-Jurjānī's Gloss on the Shamsiyya*

A discussion of this matter is also found in al-Jurjānī's gloss on at-Taḥṭānī on the *Shamsiyya* of al-Kātibī in the section on contradictory conversions.¹⁵ Again, as noted above, the motivation for introducing this instrument is to overcome a serious challenge to this fundamentally important logical move. The crux of the issue lies with endorsing a universal proof for the validity of the rule of contradictory conversion. The proof generally runs as follows.

1. Whatever is J is B
 2. Whatever is non-B is not J (contradictory conversion)
- Otherwise
3. Some of what is non-B is J (contradictory of 2)

¹⁵ As-Sayyid ash-Sharīf al-Jurjānī, *Shurūḥ ash-Shamsiyya: Majmū'at ḥawāshin wa-ta'liqāt* (Maṭba'at Kurdistān al-'Ilmiyya, 1327 AH), 2: 169ff.

4. Some J is non-B (conversion)
5. But 1 contradicts 4
6. Therefore 2 must be true by *ad absurdum*

Now according to later logicians, as reported by al-Jurjānī, the move from 2 to 3 cannot be universally granted. Al-Jurjānī is not explicit about the reasons for this denial; however, he hints that the matter pertains to the existential import of the subject term and that the solution lies in interpreting the contradictory conversion not as a traditional negation, but as an affirmative negative-predicate proposition. It appears that the issue centers on the following kind of limitation.

1. Whatever is a 'thing' is 'possible'
2. Whatever is 'impossible' is not a 'thing' (contradictory conversion)

Now 2 does not pose immediate problems, since a negation allows for the subject term to have no existential import. However, the contradictory of 2 would be as follows; and it would require existential import as an affirmation.

3. Some of what is 'impossible' is a 'thing'

It is to avert the failure of this critical proof that al-Jurjānī explains, "I say that this [challenge] has already been averted, because we take the two contradictories of the two extremes in the sense of a negation, not in the sense of divestment. You already know that the affirmative negative-predicate [proposition] is equivalent to the negative [traditional proposition]". In other words, 2 is to be modified to be read as follows.

- *2. Whatever is 'impossible' is such that 'thing' is denied of it.

In other words, the propositional claim of the negation of the predicate of the subject applies truly to the subject as an affirmation. And its contradictory, in turn, is a negation of this very propositional claim. This is to be rendered as follows.

- *3. It is not the case that whatever is 'impossible' is such that 'thing' is denied of it.

The tradition is not committed to the virtue of this interpretive manipulation, as we will observe below. However, an important point ought to be highlighted

here, especially since it conforms to various moves in the tradition in later logic that are meant to overcome impassés in the system: the solution turns on the mental consideration of a proposition as *itself* a predicate for a given subject; put differently, the fact of the negation of a conceptualized tie between a conceptualized predicate and a conceptualized subject is itself a mental object. It is this mental object that is then affirmed of the subject as a second-order affirmative propositional claim; and the subject is already restricted by the truth of that negation in the first-order claim. This point is made in the following terms by ‘Abd al-Ḥakīm as-Siyālkūtī (d. 1067/1656) on al-Jurjānī on at-Taḥṭānī on the *Shamsiyya*.

For the meaning [of a negative-predicate] proposition is the negation of the predicate from the subject and *then* the existential assertion of that negation for [the subject]. There is no difference between the denial of a thing for a thing and the existential assertion of that denial for it except by virtue of the mere consideration of the intellect. [Now] if this description [of the existential assertion] were real [i.e., non-mental], then, from the negation of a thing for a thing would follow the existence of infinite [such] descriptions by virtue of the very given. This is what as-Sayyid as-Sanad—may his secret be sanctified—mentioned—namely, that the truth [of such a proposition] does not require the existence of the subject, since its reality reverts to the sense of the negative [*simpliciter*], given the necessity of the fact that the denial of a thing of another entails the description of the latter [in the manner described, i.e., that an existential affirmation of the denial follows]. And vice versa. Rather, there is no difference between the two, exception by virtue of mental consideration.¹⁶

Thus in the first case, the denial of a predicate of a subject corresponds to the scope of extramental reality. The mental consideration of this denial and the claim that *it* exists for the subject is the outcome of the recognition that such a denial is true of the subject.

3.3 *Ad-Dawānī on at-Taftāzānī's Tahdhīb*

The context of the most extended discussion of negative-predicate propositions in ad-Dawānī's commentary on the *Tahdhīb* is the discourse on the various relations of entailments between universals. It is also this commentarial

¹⁶ ‘Abd al-Ḥakīm as-Siyālkūtī, *Shurūḥ ash-Shamsiyya: Majmū‘at ḥawāshin wa-ta‘līqāt* (Maṭba‘at Kurdistān al-‘Ilmiyya, 1327 AH), 2: 58.

engagement with the topic that was the main point of reference in the *Sul-lam* tradition. The details that are relevant for our investigation emerge in cases when two universals are equivalent to each other with respect to all instances, i.e., when one is true of all instances of which the other is also true. In such a case, their respective contradictories are also equivalent to each other. Ad-Dawānī then offers a proof of this latter claim, stating that, should this not be the case, then one contradictory would be false of at least some of that of which the other contradictory would be true. This consequence, in turn, would mean that one of the two contradictories would be both true and false of at least some of that of which the other contradictory is only true. The following example is offered to clarify this argument: “non-human” and “non-rational” are the two contradictories of “human” and “rational” respectively. Thus just as every human is rational and every rational is human—since each picks out all the instances that the other picks out—so every non-human is non-rational and every non-rational is non-human. If this were not the case, then it would be true that some non-human is not non-rational, i.e., that some non-human is rational. This latter converts to “some rational is non-human”. But it was posited that every rational is human.

It is at this juncture that a familiar doubt is mentioned. Ad-Dawānī explains:

There is a well-known doubt [about this matter]. And it is that “some non-human is not non-rational” does not entail that “some non-human is rational”. [This is so] because the negative [proposition] whose predicate is divested is more general than the affirmative invested proposition, since the former can be true due to the absence of the subject, whereas the latter cannot. [Since] sometimes the two contradictories of the two equal [propositions] may be such as not to have an instance with respect to the very given (*fī nafsi l-amr*), such as the contradictories of encompassing concepts—such as non-thing and non-possible—then when it is said that “some non-thing is not non-possible” it would entail that “some non-thing is possible”. [In this case] the aforementioned problem would apply. One may respond by making the claim specific to cases that are not contradictories of encompassing [concepts]. For the contradictories of other things are undoubtedly true of something. Thus the subject would be existent; and when the subject is existent the negative [proposition] with the divested predicate and the affirmative invested [proposition] entail each other.¹⁷

17 Muḥammad b. Asʿad ad-Dawānī, *Sharḥ al-Muḥaqqiq ad-Dawānī wa-Mullā ʿAbdallāh al-*

Thus the issue is again that, at a critical step in the proof, an entailment is denied because of the absence of instances of the subject term. And it is added that such a situation would present itself in the case of encompassing notions, such as “thing” and “possible”, whose contradictories have no instances; as such, affirmations that contain them as subject terms would not be granted. A solution offered by ad-Dawānī is to limit the discourse to cases that do not involve such encompassing notions; and yet, he is aware of the general demand of the discipline of logic that propositional claims must be applicable universally. He responds to this latter critique in the following manner.

That the rules of a discipline must be general [for all cases] is [possible] only to the extent of [human] capacity. And we have no capacity to include [these exceptional cases] within the [given] rules, because their status is different from the status of other cases. There is no worthy objective in one’s independent investigation of such contradictories. So one should forget about them¹⁸

However, the author realizes that this concession is not acceptable to most logicians, and it is here that he introduces the negative-predicate proposition as a potential solution. He states, rather succinctly, that the initial proposition that appears to be a traditional negative proposition with a divested predicate, is actually a negative negative-predicate proposition. In other words, “Some non-thing is not non-possible” is interpreted to be its equivalent, “Some non-thing is not such that possibility is denied of it”; this negative negative-predicate proposition has the same force as a traditional affirmative proposition, namely, “Some non-thing is possible”. And insofar as the former does not require the existence of the subject, the latter does not either. Yet this is clearly a problematic move, if one grants that the affirmative negative-predicate proposition does not require the existence of the subject due to its equivalence with a traditional negative proposition. Ad-Dawānī does not press the matter.

Ad-Dawānī does not explore the negative-predicate proposition in any great detail until he arrives at the topic of the existence of the subject term of propositions. At this later juncture, his reflections generally center on whether the suitable interpretation of propositions is that the subject must be posited by the mind such that, were it to exist extramentally, the predicate would apply

Yazdī ‘alā Tahdhībī l-Manṭiq li-t-Taftāzānī, ed. ‘Abd an-Naṣīr Aḥmad ash-Shāfi‘ī al-Malyābārī (Kuwayt: Dār ad-Ḍiyā’, 2014), 138.

18 Ad-Dawānī, *Sharḥ al-Muḥaqqiq ad-Dawānī wa-Mullā ‘Abdallāh al-Yazdī*, 138.

to it; or it is valid to understand that the predicate would apply were the subject to exist mentally, its possible extramental existence being irrelevant to the claim. A third possibility is to take existence as something more general than the mental or extramental. In such an interpretation, the instances are neither specified to be possible nor those of which the subject term would be possible. Rather, the predicate would apply in such cases on the hypothesis that were such instances to fall under the tag, then the predicate would apply to them; that such instances are actually possible or whether it is possible for the tag to apply to them is not taken into consideration. This position is represented by a proposition such as, "Everything that is absolutely unknown is such that judgment about it is impossible." The claim resolves to the predicate of impossibility applying on the mental determination of the subject's being absolutely unknown; it does not assert impossibility in actual existence for the existent or actual subject. This latter interpretation of propositions is attributed to al-Urmawī and is presented as a solution to Avicenna's reported parsing of *ḥaqīqī* propositions which require both that the subject term J at least possibly picks out its instances and that the intellect supposes J in actuality, both with respect to the very given, as a condition for the actual predication of B of J. Avicenna's propositional semantics fails in cases such as "The Partner with the Creator is impossible", since the subject term does not possibly apply to any instance, with respect to the very given; al-Urmawī's reading is meant to overcome such empty tags.¹⁹

As it can be anticipated, it is in this context that the negative-predicate proposition is introduced as a possible solution to such problematic subjects in affirmative propositions. Ad-Dawānī explains as follows.

The third [investigation] is that the later [scholars] considered the negative-predicate [proposition] and judged that the truth of its affirmative does not entail the existence of the subject. And they distinguished between it and the [traditional] negative [proposition] in that there is an additional consideration [in the former], since in the [traditional] negative the two extremes are conceptualized and one judges the negation [of one for the other]. In the negative-predicate [proposition], one reverts [following the same steps], and *this* negation is predicated of the subject. They say that the meaning of the negative-predicate is that J is a thing of which R is negated; the meaning of a [proposition] that is negative with respect to the two extremes is that there is a thing of

19 Ad-Dawānī, *Sharḥ al-Muḥaqqiq ad-Dawānī wa-Mullā 'Abdallāh al-Yazdī*, 189–191.

which J is negated, which is a thing of which R is negated; and the meaning of the [traditional] negative is that R is negated of J. So just as the truth of the negation does not entail the existence of the subject, so the truth of the existence of the negation [for the subject does not entail it].²⁰

The explanation is familiar: the difference between a traditional negative proposition and an affirmative negative-predicate proposition is that the former denies a predicate of the subject whereas the latter asserts that there is a subject for which the denial of the predicate exists. And since the two are equivalent and the former does not require the existence of the subject, the latter does not require it either. At this point, ad-Dawānī mentions a number of objections to this solution proposed via the negative-predicate proposition. For example, he appeals to Principle 2 above, namely, that the existence of a thing for a thing entails the existence of that for which it exists. This universal rule, he argues, does not admit of exceptions even in cases when a second-order negation, i.e., the claim that B is such that A is denied of it (or B is such that the denial of A of B is a true claim), is predicated of the subject. And second, he points out that, if the affirmative negative-predicate proposition is suitable for such an exception, then one should grant it also for divested affirmative propositions; not to do so would be to offer arbitrary interpretations to the two types of propositions. Both critiques reduce to the idea that an affirmation, in an absolute sense, requires the existence of the subject. The position is buttressed by a quotation from Avicenna that reminds us that a traditional negative proposition may be true in the absence of a subject whereas an affirmative proposition—including an affirmative divested proposition—may not be so. In this sense, the former is more encompassing than the latter. Ad-Dawānī concludes, referring to Avicenna:

So the gist of his discourse is that he [i.e., Avicenna] did not differentiate between what they called the negative-predicate [proposition] and a divested [proposition] and that the affirmative, in an absolute sense, requires the existence of the subject, due to the meaning of the copula, not because the predicate [of a certain special sort] requires this [in some way].²¹

20 Ad-Dawānī, *Sharḥ al-Muḥaqqiq ad-Dawānī wa-Mullā 'Abdallāh al-Yazdī*, 192–193.

21 Ad-Dawānī, *Sharḥ al-Muḥaqqiq ad-Dawānī wa-Mullā 'Abdallāh al-Yazdī*, 194.

An intriguing response to this critique is next offered by ad-Dawānī. While he accepts Avicenna's assertion that affirmations require the existence of the subject, he also argues that the negative-predicate proposition is to be parsed as a mental proposition, according to the understanding of the later logicians. Such propositions neither make claims about an extramental existent reality nor do they posit the application of the predicate on the determination of the existence of the subject in extramental reality. Rather, in the case of mental propositions, the subject is *supposed* to exist only in the mind *on the condition* of its mental supposition in a certain manner, without being determined to exist extramentally. The mode of its existence is supplied by the very predicate: thus the proposition "The Partner with the Creator is impossible" is parsed to mean that anything that *were* to exist in the mind and is *supposed* by the mind to be the Partner with the Creator is *described* in the mind with impossibility.²² A gloss on the text explains further that this interpretation was deployed by logicians in cases of subjects that have no possible instances extramentally. And here an interlinear note adds helpfully that they have no possibility to obtain in the mind either; their mental instances are merely supposed and determined, presumably by virtue of the description applied to them.²³ In other words, there are three kinds of propositions based on one's account of the existence of the subject: those where an extramentally existent instance of the subject has an extramental predicate; those where the instance—which must have a possible existence—does not exist extramentally, but were it to do so as the subject, this existence as such would determine the extramental application of the predicate; those where the instance is impossible and where the subject exists as a mere supposition of the mind, conditioned by mental descriptions (such as a non-animal human). It is this last that is the aforementioned mental proposition. Now there is one remaining element in this discussion that needs attention, namely, that the supposition of a thing as existent appears to contradict the claim that it is described in the mind as impossible. A gloss at this juncture, therefore, adds that the predicate of impossibility applies to this subject in an absolute sense and with respect to the very given, i.e., that the subject is supposed as existent insofar as it is judged of it that it is impossible with respect to the very given.²⁴ Put differently, the mental object is supposed

22 'Abdallāh Yazdī, *Sharḥ Tahdhīb ma'a ḥāshiyatihi Tadhhīb at-Tahdhīb* (Lahore: Maktaba Raḥmāniyya, nd), 73.

23 Yazdī, *Sharḥ Tahdhīb*, 73.

24 Yazdī, *Sharḥ Tahdhīb*, 73, n. 2. This same idea is expressed in the following terms in Gelenbevi's treatise on God's knowledge: "On the basis of what we have verified, the reason for the Verifiers' claim—that all conceptualized notions, even the joining of two con-

such that it is described within the scope of this supposition as impossible with respect to the very given.

A quotation from the commentary by ‘Ubaydallāh b. Faḍlallāh al-Khabīṣī (d. 1050/1640?) on the *Tahdhīb* may be helpful here. He writes:

Know that mental propositions are of [different] types. Among them are those whose instances are existent in the mind and are described by their predicates in the mind in a manner that corresponds to actuality. [Among these types are] the problemata of logic, since their predicates are mental accidentals that occur for the primary intelligibles in the mind. Two mental existences occur for their subjects: one of them is the ground for the judgment, namely, a derivative existence whereby the subject is distinguished from the predicate; the other is the original existence whereby the predicate is united with the subject. This latter is the ground of truth and falsity and that whereby an affirmative [proposition] is differentiated from the negative [proposition]. Among [mental propositions are also] those whose predicates entail existence, such as “The Partner with the Creator is impossible”, “The joining of two contradictories is absurd”, “The absolutely unknown is such that no judgment is passed of it”, and “The absolutely non-existent is the opposite of the absolutely existent”. The verification [of this matter] is that the ground of the judgment is their conceptualization by means of the tag of the subject and the ground of their truth is the supposed existence that obtains by virtue of the consideration of the subject being an instance. It is as if one were to say, “That which is conceptualized by means of the tag ‘Participant with the Creator’ and the truth of [this tag] is supposed for it, is impossible with respect to the very given.”²⁵

The gist of this key passage is that mental propositions of one type posit predicates of subjects, both of which exist in the mind, and such that the predication corresponds to what is mind-independent. Within the scope of this predication, two cases may be noticed. In one case, the predicate is an accidental of the mind by virtue of the very given existence of an item of knowledge in it; thus,

trading together in the mind, exist with respect to the very given—is known. [They mean] that [these notions] are described with respect to the very given by notions that have existential import. The least [of such descriptions] is that [these notions] are known and understood.” See Ismā‘īl b. Muṣṭafā Gelenbevī, *Rasā’il intihān* (Istanbul: al-Maṭba‘a al-‘Āmira, 1846), 174.

25 ‘Ubaydallāh b. Faḍlallāh al-Khabīṣī, *Sharḥ at-Tahdhīb* (Cairo: Būlāq, 1879), 138.

the subjecthood or predicatehood of a primary intention are predicated of such items with respect to their very givenness, and are the ground for judgment. The second case within this same category is the mental existence of that which exists mind-independently. It is with respect to propositions related to such mental objects that truth and falsity are relevant. The second type of mental proposition is the one relevant to our interest. This type of mental proposition is such that the application of the predicate *entails* the hypothetical existence of the subject. The propositional claims simply reduce to saying that the predicate applies to whatever *may be hypothesized* to be captured by the subject tag.²⁶

It is in this sense that ad-Dawānī's parsing of the negative-predicate proposition as a mental proposition is to be understood. The negative-predicate proposition supposes a subject and predicates the denial of a predicate of it (A is hypothesized such that *p* is true of it). As with the mental proposition, two consequences follow from this: first, the hypothesized entity is mentally supposed to have certain extramental features by virtue of the description that captures it; and second, the mind supposes the existence of such a thing as modulated by this description. And so the rule of affirmative propositions, namely, that the subject must exist, is not jettisoned. The discussion ends with that claim that "All conceptualized notions may present themselves equally in that they exist with respect to the very given. So inevitably, they would be posited [as subjects] for true, affirmative propositions."²⁷

4 The Negative-Predicate Proposition in the Tradition of the *Sullam*

The general contours of the discussions about the negative-predicate propositions remain fundamentally similar in the tradition of the *Sullam*. However,

26 A critique of this position is offered by Baḥr al-'Ulūm in his self-commentary on his commentary on the *Sullam*: "The discourse of the Verifier Dawānī in his gloss on the *Tahdhīb* is explicit in not positing either the possibility or actuality of the truth of the tag [for the substrate] as a condition. Against this, one may argue that, in this case, *ḥaqīqī* affirmative propositions would not be true at all." The reason for this outcome is that such propositions require the possibility of the application of the tag; since ad-Dawānī does not posit this as a condition, *ḥaqīqī* propositions would not be true. See Baḥr al-'Ulūm, *Sharḥ Sullam*, 164 and 164 n. 2.

27 Whether one can claim that such supposed items can exist with respect to the very given is discussed further in the glosses on ad-Dawānī on the *Tahdhīb*. See, for example, Ad-Dawānī (MS), *Sharḥ Tahdhīb al-Manṭiq*, 146 f. Ad-Dawānī does not claim that instances of such subjects exist with respect to the very given; it is rather the notions themselves that exist in this fashion. See Ad-Dawānī (MS), *Sharḥ Tahdhīb al-Manṭiq* (MS), 146, margins.

refinements in the proofs and presentations and a more robust set of critiques is easily witnessed. Here I provide a brief summary of key moments in the discussion, mainly by appeal to the extended commentary of Mullā Mubīn. The commentator begins his discussion with a thoughtful reflection on the history of the topic. He writes:

The reason for the invention of this proposition [among later logicians] was their inability to overcome the refutations of their general rules. [Examples are:] that the two contradictories of two equivalent [propositions] are equivalent with respect to their truth values; the conversion of the affirmative into [an affirmative] in a contradictory conversion—according to the doctrine of the ancients—as in the encompassing notions, such as “thing” and “possible”. So when they invented this proposition, the refutation [of their general rules] was averted and the relational [equivalences of propositions] and conversions was maintained. Now since this proposition was similar to the [traditional] negative [proposition], it was necessary to explain the difference between the two, so that one may be distinguished from the other.²⁸

The discussion next turns to Mubīn’s outline of the difference between the negative-predicate proposition and the traditional negative proposition, on the one hand, and the former and a divested affirmative proposition, on the other. In the case of the former set, he informs us that the difference between the two lies in that the traditional negative proposition simply denies the link between two conceptualized items, whereas the negative-predicate proposition reverts to this negation and predicates it of the subject as an additional step in an affirmation. For the latter set, he explains that the affirmative divested proposition has the particle of negation as internal to the predicate, such that there are no two extremes whose link is being denied. In the case of the negative-predicate proposition, the negation is external to the two extremes, so that it may be extracted as a distinct conceptual item, i.e., the denial of something of something; it is this denial that is then affirmed of the subject. This much is already familiar from above.²⁹

Following the brief presentation of an objection to the idea that a negation can serve as a predicate, Mubīn turns to the main issue, namely, that the affirmative negative-predicate proposition does not require the existence of

28 Mullā Muḥammad Mubīn, *Mir’āt ash-shurūḥ sharḥ Sullam al-‘Ulūm* (Egypt: Maṭba‘ as-Sa‘āda, 1321AH), 216.

29 Mubīn, *Mir’āt*, 216 f.

the subject. We might recall that it is precisely in granting this possibility that the negative-predicate proposition served as a useful tool for overcoming the problems in propositional semantics noted above. The crux of the argument is grounded in showing that the affirmative negative-predicate proposition and the traditional negative proposition both have the same truth values; and if this is so and if the latter does not require the existence of the subject, then the former would not require it either. Here is one leg of the proof: if it is true that B is negated of J, then it is true that J is such that B is denied of it. Otherwise, J would not be such that B is denied of it. This contradicts the original posit.

The proof is weak, as Mubīn quickly recognizes. He argues that negation is more general than the existence of negation. Presumably, this is based on the analogy that a thing, insofar as it exists, is more particular than the thing itself. Once this is granted, he states that the negative-predicate proposition affirms the existence of the negation, whereas the traditional negative proposition asserts negation itself. Thus, the former is more particular than the latter. And since the contradictory of the particular does not necessitate the contradictory of the general, the contradictory of the negative-predicate proposition may be compatible with the traditional negative proposition. As such, no absurdity follows for the proof to be effective.³⁰

Yet Mubīn presents an argument endorsing the idea of the mutual entailment of the affirmative negative-predicate proposition and the traditional negative proposition, especially since several key propositional claims depend on such an equivalence. An impasse that he now faces is that his arguments have established that affirmative propositions, in an absolute sense, require the existence of the subject. Yet negative propositions do not require the existence of the subject, and as such, they are more general than affirmative propositions. Thus there cannot be a necessary mutual entailment with respect to their truth values. The tactic Mubīn employs has two steps, both of which were available in the tradition. His first move, like that of the base text, is to recognize ad-Dawānī's interpretation of the affirmative negative-predicate proposition as a mental proposition. As noted above, the subjects of such propositions are conceptualized notions that are hypothesized insofar as they are conditioned by the predicate; and whatever is conceptualized in the mind exists as such with respect to the very given. Second, Mubīn embraces the idea that a negation also requires the existence of the subject in an identical fashion: it is conceptualized in some way, and whatever is conceptualized exists as such with respect to the

³⁰ Mubīn, *Mir'āt*, 216f.

very given.³¹ The circuitous solution, therefore, appears to be not that the affirmative negative-predicate proposition does not require a subject. Rather, the reduction of the affirmative negative-predicate proposition to a mental proposition allows for any subject to be supposed as a conditioned hypothesis. Insofar as the equivalence between the two types of propositions is granted, so is also the recognition that traditional negative propositions have mental subjects of the same sort. Mubīn and other commentators follow up this argument with a refutation, including the observation that the traditional negative proposition would require the hypothesized notion as subject only at the time of the judgment; this is not the case for affirmations. But I leave the analysis of these arguments for another occasion.

5 Concluding Remarks

The invention of the negative-predicate proposition for the purpose of overcoming major disruptions in propositional semantics had ultimately failed. Reflecting the orientations of earlier works, the *Sullam* tradition generally recognized that the negative-predicate affirmative proposition was redundant as a mental proposition and that, on this reading and due to its shared truth value with traditional negative propositions, the requirement of the existence of the subject term applied in the latter case as well. The negative-predicate proposition, therefore, offered no real gains.

The frustration with the effort is perhaps best expressed by Baḥr al-ʿUlūm. I quote him to offer a closing expression of the disappointment of the tradition in this endeavor:

31 This same conclusion is asserted in other texts of the *Sullam* tradition. For example, a gloss by the late nineteenth/early twentieth century scholar, Saʿīd Aḥmad, on the commentary of Baḥr al-ʿUlūm explains that, in cases where the requirement is that the subject be with respect to the very given, affirmative propositions whose subjects exist by mere supposition cannot be true. An example of such a case is “The void is non-existent”, if the aim is to pass judgment on a subject with respect to the very given. On the other hand, when these subjects are the constructs of mental consideration, then negative propositions also require their existence. The crux of the matter is that description, in an absolute sense, requires both the existence of that which is described and the description of a substrate by a tag; and so a negative proposition with mentally-considered subjects that are impossible would only be true if these latter exist in some way. It appears that this existence is on the level of a mere hypothesized notion, which, when posited in the fashion described above, obtains with respect to the very given, as conditioned by the predicate. See Baḥr al-ʿUlūm, *Sharḥ Sullam*, p. 164 marginal note and 164 n. 1.

This slave [of God] does not know what they intend [by this new proposition]. If they mean that the negation is external to the predicate—as the discourse of the commentator of the *Maṭālī'* requires—then to take it as an affirmation makes no sense. Rather it [simply] reduces to a traditional negative [proposition]. If they mean that [the negation] is part of the predicate and that the compound of the negative relation and the predicate is predicated [of the subject], then it reduces to a divested [proposition], unless the divested [proposition] is specified as that where a negation other than a negative relation is a part of the predicate. God knows best!³²

Bibliography

- Ahmed, Asad Q. "Logic in the Khayrābādī School of India." In *Law and Tradition in Classical Islamic Thought: Studies in Honor of Professor Hossein Modarressi*. Ed. Michael Cook, Najam Haider, Intisar Rabb, and Asma Sayeed. New York: Palgrave Macmillan, 2013, 227–245.
- Ahmed, Asad Q. *Palimpsests of Themselves: Logic and Commentary in Postclassical Muslim South Asia*. Oakland/Berkeley: University of California Press, 2022.
- Baḥr al-'Ulūm, Muḥammad b. Muḥammad. *Sharḥ Sullam Baḥr al-'Ulūm ma'a minhuyāt*. Delhi: Maṭba'-i Mujtabā'ī, 1892.
- Ad-Dawānī, Jalāl ad-Dīn Muḥammad b. As'ad. *Sharḥ al-Muḥaqqiq ad-Dawānī wa-Mullā 'Abdallāh al-Yazdī 'alā Tahdhīb l-Mantiq li-t-Taftāzānī*. Ed. 'Abd an-Naṣīr Aḥmad ash-Shāfi' al-Malyabārī. Kuwayt: Dār ad-Ḍiyā', 2014.
- Dawānī, Jalāl ad-Dīn Muḥammad b. As'ad (MS). *Sharḥ 'alā Tahdhīb al-Mantiq*. (Internet Archive: https://archive.org/details/20200804_20200804_2338/page/n147/mode/2up).
- Fīrūz b. Maḥabba. *Sirāj wahhāj sharḥ Sullam al-'ulūm*. Raza Rampur Library MS 3400/4341M.
- Gelenbevī, Ismā'il b. Muṣṭafā. *Rasā'il Imtiḥān*. Istanbul: al-Maṭba'a al-Āmira, 1846.
- Al-Jurjānī, as-Sayyid ash-Sharīf. *Shurūḥ ash-Shamsiyya: Majmū'at ḥawāshin wa-ta'līqāt*. Maṭba'at Kurdistān al-'Ilmiyya, 1327 AH.
- Al-Khabīṣī, 'Ubaydallāh b. Faḍlallāh. *Sharḥ at-Tahdhīb*. Cairo: Būlāq, 1879.
- Mubārak, Qāḍī Muḥammad. *Kitāb Sullam al-'Ulūm wa-ḥāshiyatuhū l-mashhūra bi-l-Qāḍī ma'a minhuyātihī*. Al-Maṭba'a al-Malikiyya, 1887.

32 Baḥr al-'Ulūm, *Sharḥ Sullam*, 162–163.

Mubīn, Mullā Muḥammad. *Mir'āt ash-shurūḥ sharḥ Sullam al-'ulūm*. Egypt: Maṭba' as-Sa'āda, 1321 AH.

As-Sā'inpūrī, 'Abdallāh Muḥammad. *Sharḥ Sullam al-'ulūm*, Rampur Raza Library ms. 3399/588D.

As-Siyālkūtī, 'Abd al-Ḥakīm. *Shurūḥ ash-Shamsiyya: Majmū'at ḥawāshin wa-ta'liqāt*. Maṭba'at Kurdistān al-'Ilmiyya, 1327 AH.

At-Taḥṭānī, Quṭb ad-Dīn. *Sharḥ al-Maṭālī' fī l-Manṭiq*. Intishārāt-i Quṭbī Najafī: Qom, nd.

Yazdī, 'Abdallāh. *Sharḥ Tahdhīb ma'a ḥāshiyatihī Tadhhīb at-Tahdhīb*. Lahore: Maktaba Raḥmāniyya, nd.

Prolegomena to a Critical Edition of Sāwī's *Baṣā'ir*

Osama Eshera, Fateme Savadi and Robert Wisnovsky

In this article, we offer some preliminary remarks about the reception-history of 'Umar ibn Sahlān as-Sāwī's (d. ca. 566/1170) logic text, *al-Baṣā'ir an-Naṣiriyya* ([*Logical*] *Insights for Naṣir* [*al-Dīn*]), and we append a sample of what a critical edition of that text could look like. In so doing, we hope both to contribute to future research on Sāwī's place in the history of post-Avicennian logic, and to pay tribute to Tony Street's fundamental contributions to the study of that history.

1 Sāwī and 'Abduh

Not much is known about Sāwī. The fullest bio-bibliographic source is Ṣaḥīr ad-Dīn 'Alī ibn Zayd al-Bayhaqī's (d. 565/1169–1170) *Tatimmat Ṣiwān al-Ḥikma*, but even that is only two folio sides in length. In Bayhaqī's entry, Sāwī's name is given as Zayn ad-Dīn 'Umar ibn Sahlān as-Sāwī. He is described as "*al-qāḍī al-imām al-faylasūf*" ('the judge, leader and philosopher'), and as someone who wove together (*sarrada*) *shar'ā* and *ḥikma*. He was born in Saveh (in modern-day Iran) but ended up residing in Neyshabur (also in modern-day Iran), where he earned a living making copies of Avicenna's *Shifā'*, copies that he used to sell for 100 dinars apiece. The only work of Sāwī's that Bayhaqī lists by name is the *Baṣā'ir*.¹ However, we know of a handful of other essays by Sāwī. In one of these, which remains unedited, Sāwī defended several of Avicenna's

1 Sāwī was associated with Sulṭān Sanjar, who died 552/1157; and the vizier to whom the *Baṣā'ir* is dedicated apparently held the office from 521/1127 to 526/1132. Bayhaqī, who died in 565/1169–1170, mentioned in the *Tatimma* that he was acquainted with Sāwī and that Sāwī's library burned down after his funeral so, evidently, Sāwī died before Bayhaqī. See al-Bayhaqī, *Kitāb Tatimmat Ṣiwān al-Ḥikma*, ed. by Muḥammad Shafī' (Lahore: Panjab University Publications, 1351/1935), no. 68, 127,1–129,3 = Max Meyerhof, "'Alī al-Bayhaqī's *Tatimmat Ṣiwān al-Ḥikma*: A biographical work on learned men of the Islam [*sic*]," *Osiris* 8 (1948), 180–181. The two most recent synopses of the sources for Sāwī's life, and of his place in the evolution of Avicennism, are Frank Griffel, *The Formation of Post-Classical Philosophy in Islam* (New York: Oxford University Press, 2021), 199–202; and *ibid.*, "'Umar b. Sahlān al-Sāwī (d. after 536/1141)," in *Philosophy in the Islamic World: Vol. 2/1: 11th–12th Centuries: Central and Eastern Regions*, ed. by Ulrich Rudolph and Peter Adamson (Leiden: Brill, 2023), 463–472.

ideas—key among them Avicenna's conception of God as the sole intrinsically necessary being (*wājib al-wujūd bi-dhātihi*)—against some *ad hoc* objections (*i'tirāḍāt*) raised by Abū al-Faṭḥ Muḥammad ibn 'Abd al-Karīm ash-Shahrastānī (d. 550/1153).² A century after Sāwī, Naṣīr ad-Dīn aṭ-Ṭūsī (d. 672/1274), in a work entitled *Maṣā'irī' al-Muṣā'irī'* (*Knocking Down the Wrestler*), emulated Sāwī by composing a systematic and comprehensive rebuttal of the criticisms laid out by Shahrastānī in his *Muṣā'ara'at al-Falāsifa* (*Wrestling with the Philosophers*). In addition, Ṭūsī cited Sāwī's *Baṣā'ir* explicitly several times in his *Ḥall Mushkilāt al-Ishārāt* (*Resolving the Problems of* [Avicenna's] *Pointers*), when addressing technical problems in Avicenna's modal syllogistic. But it would be wrong to infer from this that Ṭūsī cited Sāwī in the *Ḥall* solely out of a sense that they were comrades in the battle against wrongheaded critiques of Avicenna: in Sāwī's case, to defend Avicenna against Shahrastānī's *I'tirāḍāt*, and in Ṭūsī's case, to defend Avicenna against Fakhr ad-Dīn ar-Rāzī's (d. 606/1209) commentary on Avicenna's *Ishārāt*. Upon closer examination, it turns out that in the *Ḥall*, Ṭūsī cited Sāwī's *Baṣā'ir* simply because Rāzī had cited him first.³ What is more, Rāzī himself had earlier cited Sāwī in order to defend Avicenna against

- 2 Sāwī's responses to Shahrastānī's critiques of Avicenna are contained in three manuscript witnesses: *I'tirāḍāt ash-Shahrastānī 'alā kalām Ibn Sīnā arsalah ilā al-qāḍī 'Umar ibn Sahl* [sic] *multamisan jawāban ma'a aḥwibat Ibn Sahl*, MS Tehran, Dānishgāh-i Tihirān, Kitābkhāna-yi Markazī 227 f./222, 351–352 (which is itself a microfilm of MS Istanbul, Revan Köşkü 2042) = *I'tirāḍāt Muḥammad ash-Shahrastānī 'alā kalām Ibn Sīnā wa-jawāb al-qāḍī 'Umar ibn Sahl* [sic], MS Bursa, Genel Kitaplığı 4363, 123a1–133b, ult. = *Shukūk su'ila al-qāḍī 'Umar ibn Sahlān Sāwī min jihat al-Imām Muḥammad ash-Shahrastānī wa-ṭuliba ḥalluhā*, MS Kazan 1125a, 98a1–135b, ult.
- 3 For citations of Sāwī's *Baṣā'ir* in Rāzī's *Sharḥ al-Ishārāt*, see Fakhr ad-Dīn ar-Rāzī, *Sharḥ al-Ishārāt*, vol. 1, ed. 'Alī Riḍā Najaf-zāda (Tehran: Anjuman-i Āthār wa-Mafākhir-i Farhangī, 1384 [Sh.]/2005), 182, 14 (ad Nahj IV.2: *Ishāra ilā jihāt al-qadāyā wa-l-farq bayna l-muṭlaqa wa-l-daruriyya*): *wa-ṣāḥibu l-Baṣā'iri* ja'ala hādha l-qisma min jumlati l-darurati l-ghayri l-mashrūṭati; 240, 11–12 (ad Nahj V.4: *Ishāra ilā 'aks al-muṭlaqāt*): *fa-za'ama ṣāḥibu l-Baṣā'iri anna 'aksahā yakūnu wujūdiyyan; qāla "law kāna 'aksuhā ... ma dāma aswada"* (this appears to be a paraphrase rather than a direct quotation from the *Baṣā'ir*, contrary to the use of quotation marks by the editor of Rāzī's *Sharḥ*); 244, ult. (ad Nahj V.4: *Ishāra ilā 'aks al-muṭlaqāt*): *wa-dhakara ṣāḥibu l-Baṣā'iri anna hādha t-takḥṣṣa ghayru muḍīdīn*; 307, 7 (ad Nahj VII.4: *Ishāra ilā aṣnāf al-iqtirānāt al-ḥamliyya*): *qāla ṣāḥibu l-Baṣā'iri ammā l-ḥukmu bi-anna hādha l-ikhtilāfa ghayru muntajin fa-huwa ṣāḥiḥun*; 323, ult. (ad Nahj VII.4: *Ishāra ilā aṣnāf al-iqtirānāt al-ḥamliyya*): *fa-qāla ṣāḥibu l-Baṣā'iri an-natijatu mūjibatun juz'iyatun mumkinatun 'ammātun*. For citations of Sāwī's *Baṣā'ir* in Ṭūsī's *Ḥall*, see Sulaymān Dunyā, *al-Ishārāt wa-t-Tanbīhāt li-Abī 'Alī Ibn Sīnā, ma'a Sharḥ Naṣīr ad-Dīn aṭ-Ṭūsī* (Cairo: Dār al-Ma'ārif, 1960), vol. 1, 374, 20: *wa-qāla l-qāḍī s-Sāwīyyu ṣāḥibu l-Baṣā'iri*; 375, 5: *li-allā yalzama mā awradahu ṣāḥibu l-Baṣā'iri*; 379, 9: *qāla ṣāḥibu l-Baṣā'iri*; 451, ult.: *wa-mā dhahaba ilayhi ṣāḥibu l-Baṣā'iri*; and 467, 12: *wa-za'ama ṣāḥibu l-Baṣā'iri anna iqtirāna ṣ-ṣughrā l-urfīyyati l-wujūdiyyati s-sālibati*.

a separate attack by al-Mas'ūdī.⁴ As Tony Street showed, the fact that Ṭūsī's explicit appeals to Sāwī aligned directly with Rāzī's earlier appeals to Sāwī, helps us understand that Sāwī, Rāzī and Ṭūsī—and not just Sāwī and Ṭūsī, as Rescher had maintained—should all be seen as engaging in a common effort to identify and repair vulnerabilities in Avicenna's logical system, vulnerabilities that had themselves largely arisen as a result of Avicenna's own innovative attempts to correct serious flaws in Aristotle's modal syllogistic.⁵

Yet despite the crucial role that Sāwī played in the formation of the post-Avicennian logical tradition, he remained in relative obscurity until the end of the 19th century, when the Egyptian educational reformer Muḥammad 'Abduh (d. 1323/1905) came across a copy of the *Baṣā'ir* in 1304/1886–1887. At that time, 'Abduh was teaching in Beirut at the recently founded al-Madrassa as-Sulṭāniyya (Imperial [Ottoman] Gymnasium).⁶ In the Preface to his printed edition of the *Baṣā'ir*, 'Abduh tells the story of his first encounter with Sāwī's book:

When I was in Beirut, during my period of residence there, I saw, in the year 1304AH, a book on logic called *al-Baṣā'ir an-Naṣīriyya*, by the leader, judge and ascetic, Zayn ad-Dīn 'Umar ibn Sahlān as-Sāwī. I looked through it, and lo and behold, despite being condensed, it contained the kind of true, logical investigations that the lengthy treatises [*muṭawwalāt*] I had in my possession did not contain; and despite covering many topics, it was devoid of the conjectural controversies [*al-munāqashāt al-wahmiyya*] that are inappropriate in logic, which is the gauge of the sciences—[controversies] of the kind that we find in the *Maṭālī'* [*al-*

4 Sāwī is cited explicitly in Rāzī's rebuttal of Sharaf ad-Dīn al-Mas'ūdī's critique of Avicenna's theory of the perception of particulars; see Ayman Shihadeh, "Fakhr al-Dīn al-Rāzī's Response to Sharaf al-Dīn al-Mas'ūdī's Critical Commentary on Avicenna's *Ishārāt*," *The Muslim World* 104 (2014), 43,6; 44,5; 44,15. Sāwī also influenced the logic of Shihāb ad-Dīn as-Suhrawardī (d. 1191); see Hossein Ziai, "Ebn Sahlān Sāvajī, Qāzī Zayn-al-dīn 'Omar," in *Encyclopaedia Iranica*, vol. VIII, fasc. 1 (New York, Encyclopaedia Iranica Foundation, 1997), 52–53. Like Rāzī, Suhrawardī had been a student of Sāwī's own student Majd ad-Dīn al-Jilī (d. after 1175); see Griffel, *Formation*, 240–243.

5 Tony Street, "Arabic logic," in *Handbook of the History of Logic*, ed. by Dov M. Gabbay and John Woods (Amsterdam: Elsevier, 2004), 1: 571–574; and *ibid.*, "Logic," in *The Cambridge Companion to Arabic Philosophy*, ed. by Peter Adamson and Richard Taylor (Cambridge: Cambridge University Press, 2005) 247–265.

6 'Abduh had been forced to leave Egypt after being implicated in 'Urābī Pāshā's failed anti-British revolt. 'Abduh obtained the teaching job at al-Madrassa as-Sulṭāniyya through a younger contemporary and fellow alumnus of al-Azhar, the Beirut scholar Aḥmad 'Abbās al-Azharī (d. 1345/1927), who was the *madrassa*'s founding director. On al-Azharī, see Niqūlā Ziyāda (Nicola Ziadeh), *A'lām 'Arab Muḥdathūn* (Beirut: al-Ahliyya li-n-Nashr wa-t-Tawzī', 1994), 180–186 (al-Azharī's connection to 'Abduh is mentioned on p. 184).

anwār of Urmawī] and its commentaries, and [in] the *Sullam al-'Ulūm* [of Bihārī] and [the commentaries and glosses] that have been written on it. I found it [i.e., the *Baṣā'ir*] to be well structured in a way that I had not encountered in the books I had come across of the later [scholars] from [the period] after the Head Master Avicenna and those scholars who hold his rank in this discipline. I had a copy made of it, [a copy] that remained in my possession (like other books [I possessed]) until the time when consideration of what students of al-Jāmi' al-Azhar needed by way of books appropriate for the intermediate-level [students] among them, prompted me to go back and survey the book. I read it closely [lit., "word by word"], and its value increased in my mind and its rank rose in my opinion. I showed it to His Excellency the Great Professor, Rector of al-Jāmi' al-Azhar, and those members of his Executive Council who were present. They were astonished at it and thought that it was among the most excellent books brought to al-Jāmi' al-Azhar, the Venerable, to be established in the curriculum there. In view of the fact that the book (even though it is eloquently articulated and correctly expressed) contains terms and expressions and problems that the people from its [i.e., the book's] time, who had attained a certain degree of knowledge, relied on when employing them, yet which today stand in need of some explication and clarification, I prayed to God Above to help me choose correctly in authoring some annotations on whatever I thought required this. I ask God that students may benefit by it [the book] and find abundant reward in it.⁷

'Abduh's Preface can be divided into two halves. The first half describes his discovery of Sāwī's *Baṣā'ir* and the reasons why he found the text so compelling. The second half describes his publication of an annotated edition of Sāwī's *Baṣā'ir* and his success at incorporating the text into the logic curriculum at al-Azhar. Let us begin with what 'Abduh says in the first half. The manuscript that, at the very beginning of his Preface, 'Abduh says he came across in Beirut in 1304/1886, almost certainly had a Syrian-Christian provenance. This will become clear when, later in this article, we describe the different manuscript families that collectively constitute the *Baṣā'ir*'s recension-history. It thus seems plausible to hypothesize that 'Abduh was first introduced to Sāwī's text by Christian colleagues, possibly teaching at the Syrian Protestant College (the precursor of the American University of Beirut), whose founding twenty years earlier had provided much of the impetus for Sunni notables attached to the

7 Muḥammad 'Abduh, [*at-Ta'liqāt 'alā*] *Kitāb al-Baṣā'ir an-Naṣirīyya fī 'Ilm al-Mantiq Taṣnīf ash-Shaykh al-Imām al-Qāḍī az-Zāhid Zayn ad-Dīn 'Umar ibn Sahlān as-Sāwī* (Cairo: al-Maṭba'a al-Amīriyya, 1316–1317/1898–1900), 2.

Jam'īyyat al-Maqāṣid al-Khayriyya (Maqāṣid Charitable Organization) to establish al-Madrasa as-Sultāniyya in the first place.⁸

But what made the *Baṣā'ir* stand out in 'Abduh's mind as a logic text? In the Preface, 'Abduh remarks that the *Baṣā'ir*, despite its relative brevity, contains logical research whose quality is unmatched even in the much longer "extended [treatises]" (*muṭawwalāt*). The particular *muṭawwalāt* that 'Abduh had in mind are indicated in the next line, where 'Abduh compares Sāwī's *Baṣā'ir* favorably with Sirāj ad-Dīn al-Urmawī's (d. 682/1283) *Maṭālī' al-Anwār* and Muḥibb-Allāh al-Bihārī's (d. 1119/1707–1708) *Sullam al-'Ulūm*, two highly influential works that became standard components of post-Avicennian logic curricula, including the logic curriculum of al-Azhar, 'Abduh's alma mater.⁹ The two texts were also among the works that Jamāl ad-Dīn al-Afghānī (d. 1314/1897) taught to 'Abduh and a few other Azhar prodigies during Afghānī's extracurricular seminars in his flat near Khān al-Khalīlī.¹⁰ In his Preface, 'Abduh criticizes al-Urmawī's *Maṭālī'* and al-Bihārī's *Sullam*, along with the commentaries, supercommentaries and glosses written on them, for spinning off in the direction of metaphysical and epistemological debates that do not properly belong in a logic textbook.

8 On al-Madrasa as-Sultāniyya, see Jens Hanssen, *Fin de Siècle Beirut: The Making of an Ottoman Provincial Capital* (Oxford: Clarendon Press, 2005), 171–178.

9 On Bihārī's *Sullam*, see Asad Q. Ahmed, *Palimpsests of Themselves: Logic and Commentary in Postclassical Muslim South Asia* (Berkeley: University of California Press, 2022). On the Ottoman, Safavid and Mughal curricula, see Francis Robinson, "Ottomans-Safavids-Mughals: Shared knowledge and connective systems," *Journal of Islamic Studies* 8/2 (1997), 151–184 (esp. 174–184). On al-Azhar's curriculum, see James Heyworth-Dunne, *An Introduction to the History of Education in Modern Egypt* (London: Luzac, 1939), 41–65. Heyworth-Dunne's long list is based mostly on information reported by 'Abd ar-Rahmān al-Jabartī (d. 1825): cf. 41 and 42, fn. 3.

10 'Abduh referred to his off-campus studies with Afghānī (*wa-kānat madrasatuhu baytahu*) in his biographical introduction to the Arabic translation that he undertook (in collaboration with Afghānī's companion, Abū Turāb) of Afghānī's Persian-language *Ḥaqīqat-i Madhhab-i Naychirī wa-Bayān-i Ḥāl-i Naychiriyān*: Afghānī, *Risāla fi Ibtāl Madhhab ad-Dahriyyīn*, trans. Muḥammad 'Abduh (with the assistance of 'Ārif Afandī Abū Turāb) (Beirut: n.p., 1303 [1885–1886]), 7, 13. The texts that 'Abduh studied with Afghānī were listed by Rashīd Riḍā, on the basis of an earlier conversation that 'Abduh had with him; the list is contained in Riḍā's obituary of 'Abduh published in *al-Manār* on 16 Jumādā al-Ūlā 1323/19 July 1905, i.e., eight days after 'Abduh's death: *wa-akhbarani* [viz., 'Abduh]—*rahimahu Allāhu ta'ālā—annahu qara'a 'alā s-Sayyidi Kitāba z-Zawrā'i li-d-Dawāniyyi fi t-taṣawwufi wa-sharḥa l-Quṭbi 'alā s-Shamsiyyati wa-l-Maṭālī'a wa-Sullama l-'Ulūmi min kutubi l-manṭiqi wa-l-Hidāyata wa-l-Ishārāti wa-Ḥikmata l-'Ayni wa-Ḥikmata l-Ishrāqi minā l-falsafati wa-'Aqā'idā l-Jalālī d-Dawāniyyi wa-t-Tawḍīḥa ma'a t-Talwīḥi fi l-Uṣūli wa-l-Jaghminiyya fi l-Hay'ati l-Qadīmati wa-kitāban ākhara fi l-hay'ati l-jadidati nasaytu smahu: Rashīd Riḍā, "Muṣāb al-Islām bi-Mawt al-Ustādh al-Imām," *al-Manār* 8 (1323/1905), 388, 19–389, 3.*

'Abduh's impatience with what he calls the "conjectural controversies" (*munāqashāt wahmiyya*) that (in his opinion) plagued the later scholastic tradition of logic texts and commentaries, was a feeling shared by earlier North African logicians. They too found that post-Avicennian Eastern (*'ajamī*) logical works overemphasized epistemological and metaphysical issues, resulting in a kind of textual bloating that caused the traditional concerns of logicians—such as the conversion and contradiction of modalized propositions, and problems arising from the modal syllogistic more generally—to shrink in comparison.¹¹ The specific concerns that 'Abduh shared with earlier North African logicians regarding the *muṭawwalāt* in logic, were reinforced by the view expressed by Ibn Khaldūn in his *Muqaddima*, a text that 'Abduh taught at the Dār al-'Ulūm, the newly founded teachers' college where he held his first proper teaching position—in between his graduation from al-Azhar and his exile in Beirut. Ibn Khaldūn laments the turn that logical studies took in becoming increasingly focused on, and distracted by, extra-logical concerns such as the epistemic distinction between conceptualization (*taṣawwur*) and assent (*taṣdīq*), and the ontological status of pure possibilities.¹²

Another factor prompting 'Abduh to seize upon Sāwī's *Baṣā'ir* with such enthusiasm (that is, in addition to 'Abduh's specific concerns about the decline of Arabic logic) was of course a Neoclassical tendency common to Nahḍa-era thinkers. 'Abduh's interest in rescuing Sāwī's *Baṣā'ir* from obscurity and promoting it as a lost classic of Arabic logic, a classic that compared favorably with the bloated post-classical *muṭawwalāt*, aligned closely with his interest in rescuing classical texts of the literary *turāth*. Some of these classical texts were theoretical works of *balāgha*, such as 'Abd al-Qāhir al-Jurjānī's (d. 471/1078) *Dalā'il al-Ijāz fi 'Ilm al-Ma'anī* and *Asrār al-Balāgha fi 'Ilm al-Bayān*, whose elegance and acuity were viewed by 'Abduh as comparing favorably with the baroque superstructure of the *muṭawwalāt* in the field of rhetoric, including (especially) Sa'd ad-Dīn at-Taftāzānī's (d. 792/1390) aptly named *Muṭawwal*, a commentary that itself spawned a vast supercommentary tradition.¹³ Others

11 See Khaled El-Rouayheb, "The Transformation of Eastern Arabic Logic in the Fourteenth and Fifteenth Centuries," in *In the House of Understanding: Histories in Memory of Kamal S. Salibi*, ed. by Abdul Rahim Abu Husayn, Tarif Khalidi and Suleiman A. Mourad (Beirut: American University of Beirut Press, 2017), 389–404.

12 Ibn Khaldūn, *Kitāb al-Ibar*, vol. 1, ed. by Yūsuf Dāghir (Beirut: Dār al-Kitāb al-Lubnānī, 1961), 837,2–4; cf. 836,6–8 and, more generally, 921,8–923,12.

13 See Rashīd Riḍā's remarks in the Introduction to his edition of Jurjānī's *Asrār al-Balāgha*, where he refers to 'Abduh's efforts to edit the *Dalā'il al-Ijāz* critically and to acquire a copy of the *Asrār al-Balāgha*: 'Abd al-Qāhir al-Jurjānī, *Asrār al-Balāgha fi 'Ilm al-Bayān*, ed. by Muḥammad Rashīd Riḍā (Cairo: Maṭba'at at-Taraqīq, 1319–1320/1901–1902), "hā", l. 10—

were themselves classical literary masterpieces, such as the *Maqāmāt* of al-Hamadhānī (d. 398/1008) and the *Nahj al-Balāgha* of ‘Alī ibn Abī Ṭālib, both of which ‘Abduh considered to be models of eloquence and style, and therefore useful to advanced students of Arabic composition and rhetoric.¹⁴

The anti-scholastic sentiment expressed in the Preface to ‘Abduh’s edition and annotation of Sāwī’s *Baṣā’ir* is echoed in the Preface to his *Risāla at-Tawhīd*. There, ‘Abduh expresses a similar frustration with the *muṭawwalāt*, but this time combined with a rueful acknowledgement that hardly any of his students at al-Madrasa as-Sulṭāniyya in Beirut possessed enough of a mastery of the technical vocabulary of post-Avicennian philosophical theology to make sense of them. This factor, he says, motivated him to compose the *Risāla at-Tawhīd* in a more accessible, modern idiom.¹⁵ What prompted ‘Abduh to seize so enthusiastically upon Sāwī’s *Baṣā’ir* was, therefore, a disdain for the lengthy scholastic treatises and commentaries that dominated post-classical Arabic logic, as well as a desire to rescue a lost classic of Arabic logic from the obscurity into which it had fallen.

Now to the second half of ‘Abduh’s Preface. Here ‘Abduh makes clear that the copy of the *Baṣā’ir* that he commissioned in Beirut came back with him to Cairo in 1306/1888, when he returned from exile. The manuscript appears to have remained untouched in ‘Abduh’s personal library until around 1313–1314/1895–1896, when, as a member of al-Azhar’s newly established Executive Council (*majlis al-idāra*), he campaigned for Sāwī’s text, supplemented by his own *Ta’līqāt*, to be adopted as an intermediate-level logic textbook. As the frontispiece of the annotated edition makes clear, ‘Abduh’s campaign succeeded:

“wāw”], l. 3. ‘Abduh’s disdain for the tradition of at-Taftāzānī’s *Muṭawwal* is expressed in a blurb (*taqrīṣ*) that he wrote on the occasion of the publication of al-Barqūqī’s edition of al-Qazwīnī’s *Talkhīṣ al-Miftāḥ*: Muḥammad ibn ‘Abd ar-Raḥmān al-Qazwīnī, *at-Talkhīṣ fi ‘Ulūm al-Balāgha*, ed. and comm. by ‘Abd ar-Raḥmān al-Barqūqī (Cairo: Dār al-Fikr al-‘Arabī, n.d.), 18 (containing a photostatic reproduction of ‘Abduh’s handwritten note) and 19–20 (containing Barqūqī’s transcription).

14 See the Preface to ‘Abduh’s edition of the *Nahj al-Balāgha*, where he starts by extolling the work’s pure, beautiful Arabic, and then appends a note directed at school principals, guiding them in how to use the work as a teaching text: *Kitāb Nahj al-Balāgha wa-Huwa Mā Jama’ahu as-Sayyid al-Murtaḍā min Kalām Sayyidinā Amīr al-Mu’minīn ‘Alī ibn Abī Ṭālib Karrama Allāhu Wajhahu*, ed. and comm. by Muḥammad ‘Abduh al-Miṣrī (Beirut: al-Maṭba’a al-Adabiyya, 1885), 2–5; and the Preface to his edition of Hamadhānī’s *Maqāmāt*: *Maqāmāt Abī al-Faḍl Badī’ az-Zamān al-Hamadhānī*, ed. and comm. by Muḥammad ‘Abduh al-Miṣrī (Beirut: al-Maṭba’a al-Kāthūlikiyya li-l-Ābā’ al-Yasū’iyyīn, 1889), 5–8.

15 Muḥammad ‘Abduh, *Risāla at-Tawhīd* (Cairo: al-Maṭba’a al-Amīriyya, 1315–1316/1897–1898), 2, 7–10; cf. ‘Abduh, ed., *Kitāb Nahj al-Balāgha*, 3, 22–4, 8.

Book of *Insights for Naṣīr* [*ad-Dīn*] on the Science of Logic, the work of the Master, the Leader, the Judge, the Ascetic, Zayn ad-Dīn 'Umar ibn Sahlān as-Sāwī

{By way of realizing the benefit of this book, and making it easier for students to grasp it, His Excellency the scholar and eminent Professor "Muḥammad 'Abduh" the Egyptian has written on it some worthy annotations and some lofty verifications that will clarify its methods and shed light on its obscurities. We have set them down opposite their passages in the book, at the foot of the pages in small letters.}

The Executive Council of al-Azhar decided on 5 Rajab of the year 1316/19 November of the year 1898—that the Book of *Insights for Naṣīr* [*ad-Dīn*] along with its *Annotations* be included among the logic texts that are studied in the Venerable Azhar Mosque.

(Publication rights are reserved by the author of the aforementioned *Annotations*, may God preserve him.)

{Sold through the agency of His Excellency Mr 'Umar al-Kashshāb, at the New Avenue}

{First Printing}

at the Greater Princely Press in Bulaq, Cairo Protectorate

1316 A.H.

1898 A.D.

(by the Literary Department)¹⁶

Despite the publication date of 1316 given on the frontispiece, a completion date of Dhū al-Ḥijja 1317 (i.e., late April 1900) for this first printing is given in the colophon by the corrector, Maḥmūd Muṣṭafā.¹⁷ Following the colophon is an endorsement, at the end of which a chronogram appears, confirming that the print was completed in 1317/1900.¹⁸ Variances between earlier publica-

16 'Abduh, [*at-Ta'liqāt 'alā*] *Kitāb al-Baṣā'ir*, frontispiece.

17 Ibid., 186, 11–12. On the role of the corrector (*muṣaḥḥiḥ*), see Ahmed El Shamsy, *Rediscovering the Islamic Classics: How Editors and Print Culture Transformed an Intellectual Tradition* (Princeton: Princeton University Press, 2022), 79–83.

18 'Abduh, [*at-Ta'liqāt 'alā*] *Kitāb al-Baṣā'ir*, 187, ult.

tion dates on frontispieces and later print-completion dates in the colophons were not uncommon in books published at this time. The same discrepancies can also be found in the first printings of ‘Abduh’s *Risāla at-Tawhīd* and his *Hāshīya* on Dawānī’s *Sharḥ* on Ījī’s *al-Aqā’id al-Aḍudiyya*. The frontispiece of ‘Abduh’s *Risāla at-Tawhīd* (which, like his *Ta’līqāt* on Sāwī’s *Baṣā’ir*, was published by the Bulaq Press) lists the publication date as 1315 (June 2, 1897–May 21, 1898), whereas in the colophon on the last page, the publication is said by the corrector, again Maḥmūd Muṣṭafā, to have happened “during the first [days] of the month of Sacred Muḥarram 1316” (i.e., late May 1898).¹⁹ Similarly, the frontispiece of ‘Abduh’s *Hāshīya* lists the publication date of 1322 (March 18, 1904–March 6, 1905), whereas in the colophon on the last page, the publication is said by the corrector, ‘Abd al-Jawād Khalaf, to have happened “towards the end of Sha’bān 1323” (i.e., late October 1905).²⁰ Another common factor linking together these three publications by ‘Abduh is the appearance of ‘Umar Ḥusayn al-Khashshāb, who served as the sales agent at Bulaq for ‘Abduh’s *Ta’līqāt* on Sāwī’s *Baṣā’ir* as well as his *Risāla at-Tawhīd*, and who later, as the proprietor of the Khayriyya Press, published ‘Abduh’s *Hāshīya* on Dawānī’s *Sharḥ* on Ījī’s *al-Aqā’id al-Aḍudiyya*.²¹ The endorsement that appears at the end of ‘Abduh’s edition and annotation of Sāwī’s *Baṣā’ir*, proclaiming that ‘Abduh “took possession of it” in Beirut and “brought it back with him to Egypt as a magnificent prize for his Egyptian compatriots—nay, for all mankind”, is by Ṭahā Maḥmūd, a senior Bulaq corrector.²²

Although ‘Abduh was the first scholar to succeed in publishing the complete text of the *Baṣā’ir*, some bibliographical sources indicate that he was not the first to make the attempt. Louis Cheikho’s 1901 inventory of printed books in Mount Lebanon reports that an incomplete print of the *Baṣā’ir* was made in 1891 at the ‘Uthmāniyya (Ottoman) Press in Baabda.²³ Cheikho (d. 1927) did

19 ‘Abduh, *Risāla at-Tawhīd*, 134,9–10.

20 Muḥammad ‘Abduh, *al-Hāshīya ‘alā Sharḥ ad-Dawānī ‘alā al-Aqā’id al-Aḍudiyya*, in Muḥammad ‘Abduh and ‘Abd al-Ḥakīm as-Siyālki, [Kitāb] *Hāshiyatay ... as-Siyālki wa-... Muḥammad ‘Abduh ... ‘alā Sharḥ ... ad-Dawānī ‘alā al-Aqā’id al-Aḍudiyya* (Cairo: al-Maṭba‘a al-Khayriyya, 1322–1323/[1904–1905]), 212,11–12.

21 On Khashshāb, see Maḥmūd Muḥammad at-Ṭanāḥī, *al-Kitāb al-Maṭbū‘ bi-Miṣr fī l-Qarn at-Tāsi’ ‘Ashar* (Cairo: Dār al-Hilāl, 1996), 47 and 94.

22 ‘Abduh, [at-*Ta’līqāt ‘alā*] *Kitāb al-Baṣā’ir*, 186,28–30.

23 The ‘Uthmāniyya Press at Baabda was founded in 1891 by Ibrāhīm al-Aswad (d. 1359/1940), the author of *Tanwīr al-Adhhān fī Tārīkh Lubnān*. Ibrāhīm al-Aswad was a litterateur, historian, journalist, and concession lawyer who held administrative positions in the Governorate of Mount Lebanon and was the proprietor of the periodical *Lubnān*. See

not identify a corrector, nor did he specify the extent of the *Baṣā'ir* that was published, other than to say that the print comprised 160 pages.²⁴ In *Mu'jam al-Maṭbū'āt*, Yūsuf Ilyān Sarkīs (d. 1932) provides further details about this publication.²⁵ Sarkīs claims that it was 'Īsā Iskandar al-Ma'lūf²⁶ (d. 1956) and Jirjis Ṣafā²⁷ (d. 1933) who “undertook to correct (*taṣḥīḥ*) this book by collat-

Louis Cheikho, “*Tārīkh Fann aṭ-Ṭibā'a fī l-Mashriq*,” *al-Machriq* 4, no. 10 (1901), 474; no. 11 (1901), 520.

- 24 So far, we have not succeeded in locating a copy of this print, which, according to Cheikho, comprised the first “part” (*juz'*) of the *Baṣā'ir*. We note, however, that the *Baṣā'ir* was not divided into “parts” by Sawī, so Cheikho must be using *juz'* in a general sense.
- 25 Yūsuf Ilyān Sarkīs (Joseph Elian Sarkis) was a Syrian bibliophile and bibliographer. Raised in Lebanon, Sarkīs moved to Cairo in 1912, where he stayed for the rest of his life, and occupied himself with bookselling and writing his famous *Mu'jam al-Maṭbū'āt al-'Arabīyya wa-l-Mu'arraba*. Sarkīs wrote the *Mu'jam* in the library of the Egyptian nobleman and bibliophile, Aḥmad Taymūr Pāshā (d. 1348/1930), and subsequently dedicated it to him. See El Shamsy, *Rediscovering*, 110; Michael Albin, “Sarkīs, Yūsuf Ilyān,” in *Encyclopedia of Library and Information Science*, ed. by Allen Kent, Harold Lancour, and Jay E. Daily, vol. 39, suppl. 4 (New York: Marcel Dekker, 1985), 395.
- 26 Born in Kfār Akab (Matn, Mount Lebanon) and based in Zahle (Mount Lebanon), 'Īsā Iskandar Ma'lūf was a historian and litterateur. He was the founder of *al-Āthār* (in 1911), a periodical devoted to history, archeology, and literature, to which many scholars throughout the Arab world contributed. He was also a prolific writer in his own right: Ṭarrāzī lists almost 40 journals and magazines to which Ma'lūf contributed on a wide variety of subjects. Ma'lūf was a manuscript collector as well. Part of his personal manuscript collection was recently digitized and made publicly available by the British Library in collaboration with the American University of Beirut. See “Safeguarding the Issa Iskandar Al Maa'luf Manuscript Collection (EAP1423),” Endangered Archives Programme (British Library, 8 July 2021). Retrieved January 25, 2024, via <http://eap.bl.uk/project/eap1423>; Yūsuf Dāghir, *Maṣādir ad-Dirāsāt al-Adabīyya*, vol. 3, part 2 (Beirut: American University of Beirut, 1972), 1251–1255; Filib Dī Ṭarrāzī, *Tārīkh aṣ-Ṣaḥāfa al-'Arabīyya*, (Beirut: al-Maṭba'a al-Adabīyya, 1913), 2: 234–238. See C. Nijland and A.G. Karam, “al-Ma'lūf,” in *Encyclopaedia of Islam, Second Edition*, vol. 6 (Leiden: Brill, 1991), 305–306.
- 27 Born and educated in Deir al-Qamar (Mount Lebanon), Jirjis (also known as Jurjī) ibn Ṣafā ibn Nāṣif ibn Fāris Abī 'Akar ibn Ni'ma was a judge, lawyer, historian, and collector of manuscripts. After his appointment as a judge in a regional district (Matn, Mount Lebanon), he served as a member, and eventually the head, of the Courts of Appeals in Mount Lebanon and Beirut. He authored works on the history of Lebanon, dialectics, grammar, and Hanafi law. See Ibrāhīm Bak al-Aswad, *Tanwīr al-Adhḥān fī Tārīkh Lubnān* (Beirut: Maṭba'at al-Qiddīs Jāwurjīyūs, 1925), 1: 571–572, 2: 715–719; Joseph Elian Sarkis, *Mu'jam al-Maṭbū'āt al-'Arabīyya wa-l-Mu'arraba* (Cairo: Librairie J.E. Sarkis et Fils, 1928), 685; Khayr ad-Dīn az-Ziriklī, *al-A'lām*, vol. 2 (Cairo: n.p., 1959), 116. Some of Ṣafā's memoirs were published posthumously in Riyāḍ Ḥusayn Ghannām, *Lamaḥāt min al-Ḥayāt al-Āmma fī Mutaṣarrīfiyya Jabal Lubnān min khilālī Mudhakkirāt Jirjis Ṣafā Ni'ma* (Beirut: Dār Ma'n, 2013).

ing it (*bi-muqābalatihi*) with an old manuscript, but only half of it was completed.”²⁸

Ma'lūf's involvement in the pre-ʿAbduh *Baṣāʾir* edition seems plausible, since he was hired in 1891 as a corrector at the ʿUthmāniyya Press and as a writer for its periodical, *Lubnān*.²⁹ For his part, by 1891, Ṣafā was a member of the Court of Appeals in Mount Lebanon and a well-known scholar. If Sarkīs's report is accurate and Ṣafā was in fact involved in this early publication of the *Baṣāʾir*, then the “old manuscript” was probably the one held in Ṣafā's personal library. Ṣafā introduced his *Baṣāʾir* manuscript in the June 1913 issue of *al-Machriq*, where he published a serialized partial inventory of his personal manuscript collection.³⁰ The manuscript, which is dated 606/1209, is now held as MS Cairo, Dār al-Kutub, Taymūr, Mantīq 148 (hereafter MS Taymūr), as part of the collection bequeathed to the library by the nobleman and bibliophile, Aḥmad Taymūr Pāshā (d. 1348/1930).³¹ It was likely through Sarkīs, who had purchased a sizable portion of Ṣafā's manuscripts on behalf of Taymūr Pāshā, that this manuscript arrived in Cairo.³² But, as we shall see, this did not occur until well after the Bulaq Press published the *Baṣāʾir*, and MS Taymūr did not directly factor into ʿAbduh's publication.

Ṣafā dedicated part of the description of his manuscript to situating it with respect to the Bulaq print, which had been published thirteen years earlier. He characterized his manuscript as “fully vocalized, of the utmost precision and perfection, [written] in an excellent hand.” By contrast, Ṣafā criticized the Bulaq print for its numerous flaws, which he recognized by collating the Bulaq print (*an-nuskha al-maṭbūʿa*) with his manuscript (*hādhihi an-nuskha*). He observed that even though the Bulaq print was based on a correct transcrip-

28 Sarkīs, *Muʿjam al-Maṭbūʿāt*, 123.

29 Aswad, *Tanwīr al-Adhhān*, 1:532.

30 Jirjis Ṣafā, “*Taʾrīf Baʿd Makhtūʿāt Maktabatī*,” *al-Machriq* 16, no. 6 (1913): 435–436.

31 An autograph note by Ṣafā appears at the beginning of the codex (see Fig. 3), and Taymūr Pāshā's endowment stamp appears on folio 1a.

32 In the entry about Ṣafā in the *Muʿjam al-Maṭbūʿāt*, Sarkīs stated that he purchased Ṣafā's manuscripts on behalf of Taymūr Pāshā. See Sarkīs, *Muʿjam al-Maṭbūʿāt*, 685. Sarkīs also supplied Arabic manuscripts to European libraries, especially the Vatican, and facilitated Taymūr's acquisition of photographic copies of manuscripts from European libraries. See El Shamsy, *Rediscovering*, 111; Albin, “Sarkīs,” 395. One example of a manuscript in Taymūr's collection that previously belonged to Ṣafā is MS Taymūr, Buldān 103, which preserves a copy of *Dalāʾil al-Qibla* by Ibn al-Qāṣṣ (d. 335/946). A facsimile edition of this work has been published: Fuat Sezgin, “*Kitāb Dalāʾil al-qibla li-Ibn al-Qāṣṣ*: Das Buch über die Orientierung nach Mekka von Ibn al-Qāṣṣ,” in *Zeitschrift für Geschichte der arabisch-islamischen Wissenschaften* 4 (1988): 7–91.

tion of an accurate manuscript (*‘an nuskhatin maḍbūtatin*), produced under ‘Abduh’s supervision, he found in the print (*nuskhat aṭ-ṭab’*) “many misreadings and variant readings with respect to the source copy (*al-aṣl*) and, indeed, many phrases omitted, such that the meaning is not conveyed and the connections between some [phrases] are missing.”³³ This implies that Ṣafā was aware of the transcription commissioned by ‘Abduh in Beirut, and considered his own manuscript as the ultimate source of ‘Abduh’s copy. In other words, Ṣafā appears to assert a genealogical descent from his personal manuscript, through what we shall call the ‘Mount Lebanon family of manuscripts’, down to the manuscript commissioned by ‘Abduh and the one used by Bulaq to prepare the print. Ṣafā was certain of the accuracy of these manuscripts, including ‘Abduh’s commissioned copy, which he explicitly described as an “accurate copy.” Therefore, Ṣafā’s criticism was directed neither at ‘Abduh nor at ‘Abduh’s commissioned manuscript, but at the Bulaq Press.

When praising his manuscript and criticizing Bulaq’s print, Ṣafā made no mention of the ‘Uthmāniyya Press’s partial publication, despite the fact that it might have been directly based on his manuscript. On the one hand, Ṣafā’s silence on this matter could appear to contravene Sarkīs’s report of Ṣafā’s involvement in the 1891 print. On the other hand, Ṣafā’s statements imply that he was aware of ‘Abduh’s early interest in the *Baṣā’ir* and perhaps even facilitated ‘Abduh’s commissioned copy in 1304/1886. ‘Abduh’s evident interest in the *Baṣā’ir* might have factored into the ‘Uthmāniyya Press’s motivation for attempting to publish the text in 1891. News of their efforts likely reached ‘Abduh back in Cairo, where, prompted by the demands of al-Azhar’s students and aided by an industrial governmental press, ‘Abduh got his publication out before Ṣafā and Ma’lūf could finish their project.³⁴

Ṣafā and Ma’lūf were firmly embedded in a centuries-long Christian-Arabic tradition of studying and teaching Avicennian logic. From their perspective, the *Baṣā’ir* was part and parcel of their logic tradition for, as we shall see, several generations of Arab Christians in Syria and Mount Lebanon had been active in preserving and copying Sāwī’s text. For his part, ‘Abduh saw the potential to restore the *Baṣā’ir*’s status among Muslim readers by formally

33 Ṣafā, “*Ta’rīf*,” 435.

34 Perhaps Ma’lūf and Ṣafā’s preoccupations also prevented them from completing the second half. Ma’lūf was employed at the *Lubnān* periodical office from 1891–1893. Then, he was appointed a teacher at the National Orthodox College in Bkeftine, in the far north of Mount Lebanon, where he stayed until 1897. Ma’lūf resumed working for *Lubnān* in 1897 while he was teaching at College Oriental Basillien of Zahle. See Aswad, *Tanwīr al-Adhḥān*, 1: 532.

incorporating it into the curriculum at the largest institution of higher education in the Arab world.³⁵

2 Early Modern Circulation of the *Başā'ir* in Mount Lebanon

The Christian-Arabic tradition of logic in Lebanon and Syria goes back at least to the 17th century, when Buṭrus al-Tūlāwī (d. 1745), a graduate of the Maronite College of Rome, wrote and taught several works on logic in Aleppo. These include an introductory work, *Kitāb al-Isāghūjī*, completed in 1688, and a more advanced work, *Kitāb al-Manṭiq*, completed in 1693. He also authored several works on natural philosophy and metaphysics.³⁶ Tūlāwī's works indicate that he was influenced by both the Latin scholastic tradition and the Arabic Avicennian logical tradition.³⁷

Tūlāwī's students also contributed to the Arabic Avicennian logical tradition. Most prominent among them was 'Abd Allāh Zākhir (d. 1748), who wrote a

35 Evidence of the subsequent circulation of Sāwī's *Başā'ir* as a teaching text in Egypt can be found in 'Abd ar-Raḥmān Badawī's autobiography, where he describes being introduced to the *Başā'ir* by 'Abduh's follower Muṣṭafā 'Abd ar-Rāziq: 'Abd ar-Raḥmān Badawī, *Sīrat Ḥayātī*, vol. 1 (Beirut: al-Mu'assasa al-'Arabiyya li-d-Dirāsāt wa-n-Nashr, 2020), 58.

36 A list of sources on al-Tūlāwī's life can be found in Teymour Morel, "Buṭrus al-Tūlāwī (1657–1746). Présentation de son oeuvre philosophique. Édition critique et traduction commentée des deux premiers examens (baḥṭ-s) du *Livre de la Logique (al-Manṭiq)*," (Ph.D. diss., University of Geneva, 2018), 9, fn. 6. For an edition of al-Tūlāwī's *Kitāb al-Isāghūjī*, see Ameen Albert Rihani, *Boutros AL-TOULAWY (Pietro Oliva Tulense). A Lebanese Philosopher from the 17th Century: Isagoge or Introduction to Logic. A Manuscript from 1688* (Zouk Mosbeh: Notre Dame University Press, 2001). The manuscript copy used by Rihani for his diplomatic edition and facsimile reproduction was in fact transcribed by the renowned *naḥḍawī*, Aḥmad Fāris ash-Shidyāq: see Teymour Morel, "Lorsque Aḥmad Fāris al-Šidyāq copiait un traité de logique arabe chrétien," *Mélanges de l'Université Saint-Joseph* 67 (2017–2018): 533–536. For a critical edition and French translation of the first two discussions of *Kitāb al-Manṭiq*, see Morel, "Buṭrus al-Tūlāwī," 201–326. For a comprehensive survey of al-Tūlāwī's philosophical works and their manuscripts, see *ibid.* 17–76; Teymour Morel and Maroun Aouad, "Les manuscrits de l'œuvre philosophique de Buṭrus al-Tūlāwī (1657–1746): Éléments anciens et nouveaux," in *Les Maronites aux temps des croisements culturels (xvii–xix siècle), Actes du 2e colloque du CEDRAC Zouk Mikaël (Liban), 6–7 décembre 2010*, ed. by Ronney El Gemayel (Cordoba: Cordoba University Press, 2016) 163–207.

37 Maroun Aouad and Hamidé Fadlallah, "Philosophies chrétiennes de langue arabe aux xvii^e–xviii^e siècles en Syrie et au Liban," *Parole de l'Orient* 34 (2009): 461–462; Morel, "Buṭrus al-Tūlāwī," 185–189. See also Khaled El-Rouayheb, *The Development of Arabic Logic (1200–1900)* (Basel: Schwabe, 2019), 260–267.

commentary on Athīr ad-Dīn al-Abharī's (d. after 660/1263) *Kitāb al-Isāghūjī*.³⁸ Zākhīr composed this work at the Monastery of Saint John in Khenchara, Mount Lebanon, where he had access to, and likely drew upon, earlier commentaries on Abharī's *Isāghūjī* written by Shams ad-Dīn al-Fanārī (d. 834/1431) and Ḥusām ad-Dīn al-Kātib (d. 760/1359), as well as the supercommentaries on Kātib's work written by Muḥyī ad-Dīn at-Tālīshī (d. 884/1479) and Muḥammad Barda'ī (d. 927/1520–1521).³⁹ By the time he died, Zākhīr had worked his way through approximately half of Abharī's *Isāghūjī*, up to the chapter on the contradiction of propositions (*tanāquḍ al-qaḍāyā*).⁴⁰ His student, Yuwākīm al-Muṭrān (d. 1772), finished Zākhīr's commentary and wrote several of his own original works on logic, including a widely-circulated teaching textbook, *aṣ-Ṣaḥīfa al-Abqariyya fī l-Uṣūl al-Manṭiqiyya*, which was completed in Aleppo in 1754; it survives in at least three dozen manuscript witnesses.⁴¹ His more extensive exposition of logic, *Kitāb al-Īdāhāt an-Nuṭqīyya fī Sharḥ al-Uṣūl al-Manṭiqiyya*, completed in 1751, served as a reference book for the *Ṣaḥīfa* and itself survives in at least a dozen manuscript witnesses.⁴²

Abharī's *Isāghūjī* and its commentary tradition was not the Syrian Christians' sole point of access to the Arabic Avicennian logical tradition. Sāwī's *Baṣā'ir* also circulated among them. Several manuscripts of the *Baṣā'ir* were prepared and transmitted in Mount Lebanon, including MS Khenchara, Ordre Basilien Choueirite 320 (hereafter MS Choueir). This manuscript was tran-

38 Paul Bachel, "Abdallah Zakher. Ses premiers travaux (1680–1722)," *Échos d'Orient* 11, no. 71 (1908): 218–226; idem, "Abdallah Zakher et son imprimerie arabe," *Échos d'Orient* 11, no. 72 (1908): 281–287; idem, "Dernières années d'Abdallah Zakher," *Échos d'Orient* 11, no. 73 (1908): 363–372.

39 Aouad and Fadlallah, "Philosophies chrétiens," 461–463. For more on the circulation and availability of works on logic in Mount Lebanon, see Maroun Aouad, Philippe Roisse, Emma Gannagé, and Hamidé Fadlallah, "Les manuscrits de philosophie en langue arabe conservés dans les bibliothèques du Liban. Protocole. Catalogue raisonné des manuscrits de philosophie en langue arabe de la Bibliothèque Saint-Paul de Harissa," *Mélanges de l'Université Saint-Joseph* 61 (2008): 193–341; Teymour Morel, "La diffusion d'un ouvrage de logique arabe de la fin du XVII^e siècle: La *Logique (al-Manṭiq)* de Buṭrus al-Tūlāwī," *Journal of Islamic Manuscripts* 9 (2018), 242–263.

40 MS Lebanon, Harissa, Basilique Saint-Paul, MS 186, fols. 3–5.

41 Digital images of nearly three dozen manuscripts are publicly available via the Hill Museum and Manuscript Library's online reading room. A copy of the *Ṣaḥīfa* was in Ma'lūf's possession and is now held at the American University of Beirut Library: MS Beirut, AUB Library 160:M993iA. For a study of this work, see Sophie Glutz von Blotzheim, "Traité ingénieux sur les principes de la logique," *Parole de l'Orient* 34 (2009): 469–479. For more information on Yuwākīm al-Muṭrān, see also El-Rouayheb, *Development*, 275–284.

42 Digital images of these manuscripts are publicly available via the Hill Museum and Manuscript Library's online reading room.

scribed by one Filibbus and completed on 29 November 1739 at the Monastery of Saint Ephrem Raghm (Chbaniyeh, Mount Lebanon).

Filibbus's transcription was twice collated with the source manuscript: once by Filibbus himself, probably shortly after the initial transcription, and a second time ten years later by Yuwākīm al-Muṭrān at the Monastery of Saint Isaiah (Broummana, Mount Lebanon). This is conveyed in a note (*tanbīh*) that Yuwākīm wrote below the colophon on fol. 169b (see Fig. 2):

أعلم أنه قد قوبل هذا المؤلف ثانياً وبلغ عرضاً مقدار الجهد والطاقة على أصله المنسوخ عنه وهو أصل مضبوط محرّك موثوق به وذلك بيدي أنا القسّ يواكيم وقد أصلحت ما وقع به من الغلط والتحرّيف سهواً من قلم الكاتب وعلّمت به بعض مواطن بقلم أحمر للفصل وأثبتت بعض شكالات على بعض كلمات يوهّم لفظها فانطق بها كما تراها محرّكة لأنّها مصوّرة عن دستوره الأصلي وكان ذلك في دير مار أشعيا الروم في ٩ آذار سنة ١٧٤٩ والجمعة الرابعة من الصوم الأربعيني المقدّس

Know that this composition was collated a second time and its comparison was carried out to the extent of [human] effort and capability with the source manuscript from which it was copied, which is a correct, vocalized, and reliable source copy. This [is] by my hand, I being the priest Yuwākīm; I corrected whichever errors and misreadings inadvertently occurred in it from the pen of the scribe. I [also] marked some places in it using a red-inked pen to separate [units of the text] and I wrote some vocalization on some words whose pronunciation is uncertain, so read them as you see them vocalized, for this [i.e., the vocalization] is copied from the authentic source copy. This is in the Monastery of Saint Isaiah of Rūm on 9 March of the year 1749, the fourth Friday of Holy Lent.

Yuwākīm also indicated that it was Zākhīr who donated the manuscript to the Basilian Regular Monastic Order:

وهو من الكتب الموقوفة من الشّماس عبد الله زاخري إلى الرهبنة القانونية الباسيلية

It is among the books endowed by the deacon 'Abd Allāh Zākhīr to the Basilian Regular Monastic Order.

Zākhīr's bequest must have occurred right before his death in 1748. This means that Yuwākīm, who carried out his collation pass in 1749 at the Monastery of

Saint Isaiah following Zākhīr's death, probably completed the endowment process by taking the manuscript to Khenchara, where it is still held today. This is confirmed by the presence on fol. 2a of the stamp, dated 1882, of the Monastery of Saint John (Khenchara).

In 1881, MS Beirut, American University of Beirut Library 75 (hereafter MS Beirut) was transcribed from an immediate descendant of MS Choueir. This intermediary manuscript linking MS Choueir to MS Beirut is represented as MS B' in the preliminary *stemma codicum* below (Fig. 4). MS Beirut's scribe was Jabbūr al-Khūrī, Abū Sa'd, of the Evangelical Theological Seminary (Beirut).⁴³ Jabbūr's source preserved Filibbus's colophon and Yuwākīm's collation note. In turn, Jabbūr copied Filibbus's colophon verbatim, as well as Yuwākīm's collation note, omitting only a few sentences.

Stemmatological and codicological evidence indicates that MS Choueir was transcribed from the very manuscript that later ended up in Ṣafā's personal collection, MS Taymūr. Filibbus, the scribe of MS Choueir, inscribed the work's title

43 We could not concretely identify Jabbūr al-Khūrī, Abū Sa'd. He might be the same Jabbūr al-Khūrī who is named among the Beirut-based members of *al-Jam'iyya as-Sūriyya* (the Syrian Society) in their 1853-published bylaws; see Buṭrus al-Bustānī, *A'māl al-Jam'iyya as-Sūriyya* (Beirut: n.p., 1853), ii. In his *Tārīkh Ādāb al-Lughā al-'Arabīyya*, Jurjī Zaydān (d. 1914) mentioned that the Society was established in 1847. Zaydān named some of the Society's prominent members, including Jabbūr al-Khūrī, and said that at the time of writing, they were all dead, but that at the time the Society was founded, most of them were young adults (*wa-kulluhum tuwuffū al-ān, wa-kāna aktharuhum yawma'idhin fī muqtabali l-'umr*). See Jurjī Zaydān, *Tārīkh Ādāb al-Lughā al-'Arabīyya*, vol. 4 (Cairo: Maṭba'at al-Hilāl, 1914), 79. This Jabbūr cannot be the father of Khalīl al-Khūrī (1836–1907), as claimed in Anthony Edwards, "Serializing Protestantism: The Missionary Miscellany and the Arabic Press in 1850s Beirut," *British Journal of Middle Eastern Studies* 49, no. 1 (2022): 100. This is because Khalīl al-Khūrī's father was named Jibrā'il, not Jabbūr; see Ṭarrāzī, *Tārīkh aṣ-Ṣaḥāfa*, 1: 102. Given what Zaydān said, we can infer that Jabbūr al-Khūrī was at least in his seventies in 1881, when MS Beirut was copied. As for the copying place, *al-Madrasa al-Lāhūtiyya al-Injīliyya* (i.e., the evangelical theological seminary), only one institution fits the description of having been an "evangelical theological seminary," active in 1881, in the Beirut and Mount Lebanon area, and where it is reasonable to suppose that MS Choueir was temporarily located so that MS Beirut could have been copied from it. This institution was founded in Abeih in 1869, and it was the first of its kind; see American Board of Commissioners for Foreign Missions, "Syria Mission," *The Missionary Herald* 66, no. 4 (1870): 159. The evangelical theological seminary at Abeih graduated its first class in 1871, but was suspended the next year. It reopened in 1873 at Beirut, as part of the "preparatory department" of the Syrian Protestant College (*al-Madrasa al-Kullīyya as-Sūriyya al-Injīliyya*), the predecessor of the American University of Beirut. See William A. Holliday, *Historical Sketch of the Missions in Syria, Under the Care of the Board of Foreign Missions of The Presbyterian Church* (Philadelphia: Woman's Foreign Missionary Society of the Presbyterian Church, 1881), 14–20.

and the author's name on the frontispiece of MS Taymūr. Filibbus also restored the first page of the *Baṣā'ir* text in MS Taymūr, presumably because the original first folio was either damaged or missing by the time Filibbus encountered it. The rest of MS Taymūr was written by Muḥammad ibn Mūsā ibn Mufarraǵ al-Andalusī al-Ḥarrānī in 606/1209, just as Ṣafā described.

In addition to MS Choueir, it is likely that at least one other manuscript was copied from MS Taymūr in and around Mount Lebanon in the late 19th century. In particular, given that the 1891 print of the *Baṣā'ir* at Baabda was prepared on the basis of an "old manuscript," and given Ṣafā's reported involvement in the project, it is possible that a draft copy was made from MS Taymūr for use at the 'Uthmāniyya Press. (This draft copy is represented as MS C in the preliminary *stemma codicum* below).

We do not know exactly when Sarkīs purchased Ṣafā's *Baṣā'ir* manuscript for Taymūr Pāshā's library, but it must have occurred after 1913, when Ṣafā published a description of it in *al-Machriq*. This means that Ṣafā's manuscript did not arrive in Cairo until well after the Bulaq Press published the *Baṣā'ir* in 1900 and 'Abduh's death in 1905.

3 The Bulaq Print and MS Azhar

On the frontispiece of the Bulaq print, 'Abduh is credited as the author of the *Ta'liqāt* and is identified as the copyright holder of the print in its entirety, i.e., both the *Baṣā'ir* text and his own *Ta'liqāt*. As 'Abduh mentioned in the Preface, he commissioned the print and provided the Press with the manuscripts. Maḥmūd Muṣṭafā, in his capacity as the corrector at the Press, was responsible for preparing the print by first making a draft copy of 'Abduh's manuscript(s) for use within the printing house; then collating it against the source-copy; then preparing the printed proof; and finally collating the proof against the draft copy. We do not know whether 'Abduh provided Bulaq with the very copy of the *Baṣā'ir* that he had acquired in Beirut, or a copy of that copy. We also do not know in what form 'Abduh conveyed his *Ta'liqāt* to the Press, and whether it was written in the margins of a *Baṣā'ir* manuscript, or separately.

Fortunately, we have identified a modern manuscript of the *Baṣā'ir* whose text is nearly identical to that of Bulaq: MS Cairo, al-Maktaba al-Azhariyya 15982 (hereafter MS Azhar). Most of the textual differences between MS Azhar and the Bulaq print are identified in pencil in the margins of MS Azhar. But what is the precise stemmatological relationship between the two witnesses? One possibility is that MS Azhar was simply copied from the Bulaq print. This possibility is worth considering not only for the sake of thoroughness, but because we also

know of at least one other manuscript that was copied directly from Bulaq, namely, MS Mashhad, Kitābkhāna-yi Markazī-yi Āstān-i Quds 6501 (hereafter MS Mashhad). However, in the case of MS Azhar, it is unlikely that it was copied from Bulaq, because MS Azhar does not contain Bulaq's unique variant readings. This means that MS Azhar is stemmatologically prior to Bulaq, and that Bulaq thus descends from MS Azhar either directly or through an intermediary. If Bulaq is indeed a direct descendant of MS Azhar, then it may be the case that this manuscript was used by Muṣṭafā at the Press and the marginal notes written in pencil might have been added before the print was produced. However, it is important to note that MS Azhar could not have been Muṣṭafā's sole manuscript source because it does not contain the *Ta'liqāt*. (In fact, we have yet to locate any manuscript witness of the *Ta'liqāt*.⁴⁴)

How, then, does MS Azhar relate to the copy 'Abduh commissioned of the *Baṣā'ir* in Beirut? There is no evidence that MS Azhar once belonged to 'Abduh's personal library, since there is no recognizable trace of 'Abduh's hand or of his annotations in the codex. Therefore, it is unlikely that MS Azhar is the very manuscript 'Abduh had commissioned in Beirut. So our working hypothesis is that MS Azhar was prepared in Cairo based on 'Abduh's commissioned manuscript.

Although we have not succeeded in locating 'Abduh's commissioned copy, we know that it emerged from the Mount Lebanon family of manuscripts. It is not certain, however, from which specific manuscript it was produced. One possibility is that it was copied from the intermediary manuscript linking MS Choueir to MS Beirut (i.e., MS B' in the preliminary *stemma codicum*). Another possibility is that it was transcribed from a draft copy that was made from MS Taymūr in preparation for the Baabda print (i.e., MS C in the preliminary *stemma codicum*). We can eliminate the possibility that MS Beirut was the source for 'Abduh's commissioned copy based on the differences between MS

44 In an unpublished, handwritten note entitled *Kalima Tārīkhīyya 'an al-Maktaba al-Azharīyya*, 'Abduh's student Abū l-Wafā' Muḥammad al-Marāghī (d. 1945), who became Rector of al-Azhar, bemoaned the fact that unlike other great Azharī figures, 'Abduh did not bequeath his personal library to the Azhar Library, but gave it instead to al-Jam'iyya al-Khayriyya al-Islāmiyya (42,1–43,6). Then it seems that at some point in the late 1920's or 1930's, the Jam'iyya handed 'Abduh's personal library over to Dār al-Kutub. The portion of 'Abduh's library that ended up in Dār al-Kutub comprises 108 manuscripts, 993 Arabic printed books, and 195 foreign printed books; see Ayman Fu'ād Sayyid, *Dār al-Kutub al-Miṣriyya: Tārīkhuhā wa-Taṭawwuruhā* (Cairo: ad-Dār al-'Arabiyya, 1996), 31, 60. For a partial inventory of the philosophical manuscripts in 'Abduh's personal library in Dār al-Kutub, see Robert Wisnovsky, "New materials for the study of 'Abduh's Avicennism", in *How Far Has It Gone? Muhammad Abduh and His Programme of Islamic Reform*, ed. by Walid Ghali (Berlin: Gerlach Press, forthcoming).

Azhar and MS Beirut. Nevertheless, of all the known manuscripts, MS Beirut is the one most similar to the copy that 'Abduh encountered in Beirut.

Shortly after the Bulaq print, a second edition was commissioned by the bookseller and publisher Muḥammad 'Alī Ṣabīḥ and Sons from aṣ-Ṣāwī Press (not to be confused with the author of the *Baṣā'ir*, as-Sāwī). It is a movable-type print in 372 pages. The print is undated, but it was certainly completed after 'Abduh's death in 1905, since he is referred to on the cover-page as *al-marḥūm* ('the late'). Yet 'Abduh is credited on the cover-page of this print as the *muḥaqqiq* ('editor'). This means that the second print was based on the Bulaq print, which was itself based on only one manuscript, provided by 'Abduh. Given that there is no evidence that 'Abduh intervened upon that manuscript or, indeed, that he was involved in the publication process beyond providing the manuscript to Bulaq, we can assume that the second edition was completed during the second decade of the twentieth century, when the term '*muḥaqqiq*' had not yet acquired its modern technical sense.⁴⁵ No mention is made of Muṣṭafā, the corrector of the Bulaq print, and instead 'Abd Allāh Ismā'īl aṣ-Ṣāwī is identified on the cover-page as the corrector. Moreover, at the end of the print 'Abd al-Ḥafīẓ Sa'd 'Aṭīyya, a professor at al-Azhar, is credited with having taken up the correction from the eighth quire signature (*malzama*, i.e., a quire of sixteen pages) until the end of the volume.⁴⁶

4 Preliminary *stemma codicum*

The thirteen extant manuscript witnesses of the *Baṣā'ir* form three distinct families, as outlined in the preliminary *stemma codicum* below, which is based on the samples of critically edited text appended to the present essay. All known manuscripts are listed in Table 1.

MSS Azhar, Beirut, and Choueir belong to one family of witnesses that we refer to as the 'Mount Lebanon family', the earliest known exemplar of which

45 On the modern development of the term "*muḥaqqiq*," see El Shamsy, *Rediscovering*, 137–140.

46 'Abd al-Ḥafīẓ Sa'd 'Aṭīyya was involved in a number of publications during this period. He is credited as the corrector of the 1355/1936 second printing of Fakhr ad-Dīn ar-Rāzī's *Lubāb al-Ishārāt* at the Sa'āda Press in Cairo, as well as the 1356/1937 printing of 'Alī ibn 'Abd al-Kāfi as-Subkī's (d. 756/1355) *as-Sayf as-Ṣaqīl fī r-Radd 'alā Ibn Zafīl*, which appears to have been self-published by 'Aṭīyya. He is also credited as having overseen the 1947–1949 first edition (*ashrafā 'alā ṭ-ṭab'ati l-ūlā*) of *al-Baḥr az-Zakḥkhār al-Jāmi' li-Madhāhib 'Ulamā' al-Amṣār* by Aḥmad ibn Yahyā al-Murtaḍā (d. 840/1437).

is MS Taymūr. The Bulaq print relates to MS Azhar as detailed above, and MS Mashhad was copied from the print.

The earliest surviving manuscript of the *Başā'ir*, MS Istanbul, Süleymaniye Kütüphanesi, Fatih 3217 (hereafter MS Fatih), forms a family with MSS Bursa, Bursa Yazma ve Eski Basma Eserler Kütüphanesi, Hüseyin Çelebi 1210 (hereafter MS Hüseyin Çelebi); MS Istanbul, Topkapı Sarayı Müzesi Yazma Eser Kütüphanesi, Ahmet III 3438;⁴⁷ MS Tehran, Kitābkhāna-yi Millī 265 (hereafter MS Millī); and MS Tehran, Dānishgāh-i Tihrān, Kitābkhāna-yi Markazī 2755 (hereafter MS Dānishgāh). The witness of the *Başā'ir* in MS Fatih was transcribed in 578/1182, probably just after Sāwī's death. MS Fatih also contains the earliest witness of Avicenna's *al-Mabda' wa-l-Ma'ād*.⁴⁸ It was perhaps the source copy for MS Hüseyin Çelebi, which can be roughly dated to the 7th/13th century.⁴⁹ Within this family, MSS Millī and Dānishgāh comprise a later sub-branch. MS Millī is undated, but the paleography suggests it was transcribed ca. 8th/14th century, probably in Iran. Around the same time that the *Başā'ir* was gaining attention in Mount Lebanon, MS Millī was acquired by the Qajar King Nāṣir ad-Dīn (r. 1227–1275/1848–1896) and circulated among high-ranking officials of the Qajar family, including the Qajar prince and bibliophile, Mirzā Aḥmad Khān-i Mushīr as-Saltāna (d. 1337/1918).⁵⁰ MS Millī is likely an indirect ancestor of MS Dānishgāh, which is dated Jumādā ath-Thānī 1110/December 1698–January 1699. MS Dānishgāh is a late Safavid copy, commissioned by a high-ranking cavalry commander in the service of the Safavid Sulṭān Husayn (r. 1105–1135/1694–1722).⁵¹

47 This is a pristine and seemingly untouched copy. It may have been prepared for the Library of the Ottoman sultan Bayezid II (r. 886–918/1481–1512), whose seal it bears.

48 For a description of this codex, see Osama Eshera, "The Composition and Transmission of Avicenna's *Najāt*, *Ilāhiyyāt* and *al-Mabda' wa-l-ma'ād*: Critical Edition" (Ph.D. diss., McGill University, 2022), 260–262.

49 The witness of the *Başā'ir* in MS Hüseyin Çelebi does not bear a copy date or copy place. It is bound after a witness of Abū al-Mu'īn an-Nasafī's (d. 508/1114–1115) *at-Tamhīd li-Qawā'id at-Tawhīd*, which was transcribed by another scribe and was not precisely dated (the copy date reads: *yawm al-jum'a min shahr Jumādā al-Ākhir*). The paleographic features of both handwritings, especially those of the first scribe, suggest a 7th/13th century dating for the codex. The scribe of the first witness wrote definitions of some Arabic words in Persian in the margins. This may indicate that the transcription of at least the first witness was done by a Persian-speaking copyist and/or in a Persian-speaking venue. The only ownership note in the codex is also undated. The owner, Şālih Muṣṭafā, seems to have been impressed by the content of the *Başā'ir*, given that he left many complimentary remarks, such as '*muhimm jiddan*,' in the margins of the manuscript.

50 MS Millī is austere, with glosses and annotations written in Persian, suggesting it may have been used for educational, rather than ornamental, purposes.

51 This cavalry commander was Rustam Khān Qullar-āqāsī (d. 1722), who is best known for

The third family of manuscript witnesses comprises MS Istanbul, Süleymaniye Kütüphanesi, Ayasofya 2483 (hereafter MS Ayasofya); MS Süleymaniye Kütüphanesi, Laleli 2560 (hereafter MS Laleli); and MS Cairo, Dār al-Kutub w10277 (hereafter MS Cairo). MS Ayasofya contains the third earliest copy of the *Başā'ir*, bound together with the unique witness of an abridgment by one al-Wāhibī of an anonymous 4th/10th century commentary (*tafsīr*) on the *Categories*. The two witnesses are written in two different hands, but both were transcribed in 617/1220. MS Laleli circulated among several Ottoman scholars.⁵² MS Cairo was transcribed ca. 7th/13th century and endowed to the Arghūn Shāh al-Isma'īlī Mosque in the Sayyida Zaynab district of Cairo, on behalf of the 9th/15th century scholar Shams ad-Dīn an-Nūshābādī. It is now held at Dār al-Kutub and is missing many folios. Apparently 'Abduh was not aware of the existence of MS Cairo.

As we have shown, the Bulaq print is related stemmatologically to a single branch of the *Başā'ir*'s transmission history and, within that branch, to a single manuscript. Neither Bulaq nor any of the subsequent printings of the *Başā'ir* are informed by evidence from the two other branches, or from MS Taymūr, the authoritative ancestor of the Mount Lebanon family of manuscripts.⁵³ Hence, we are undertaking a project to produce a critical edition of the *Başā'ir*—based on all extant manuscripts, as well as the Bulaq print—and of the *Ta'liqāt*. The critical editions will be published together with English translations, a more

his heroic last stand against the invading Afghans. See H.R. Roemer, "The Safavid Period," in *The Cambridge History of Iran*, vol. 6, ed. by Peter Jackson and Lawrence Lockhart (Cambridge: Cambridge University Press, 1986), 321; D.M. Lang, "Georgia and the Fall of the Ṣafavī Dynasty," *Bulletin of the School of Oriental and African Studies, University of London* 14, no. 3 (1952): 536–539.

52 MS Laleli was in the possession of Muḥammad ibn Aḥmad al-Muẓaffarī (born 879/1474), a student of Shams ad-Dīn as-Sakhāwī (d. 902/1497). Muẓaffarī gathered several important manuscripts of works on logic, including one of Fārābī's *al-Alfāz* (MS Diyarbakr 1970). MS Laleli later belonged to the Ottoman scholar Abū Bakr ibn Rustam ibn Aḥmad ash-Shirwānī (d. 1135/1733). Shirwānī also owned MS Ragıp Paşa 872, containing an early copy of Avicenna's *al-Mabda' wa-l-Ma'ād*. Both al-Muẓaffarī and ash-Shirwānī had large libraries and many of their ownership notes can be located. Cécile Bonmariage has assembled a preliminary inventory of manuscripts owned by Shirwānī: Cécile Bonmariage, "Ottoman Manuscripts Owners of the 12th–18th c.—Abū Bakr b. Rustam al-Shirwānī," 2016. Retrieved January 25, 2024, via <https://hdl.handle.net/2078.1/180386>.

53 After the Bulaq print and the second Cairo print, the *Başā'ir* and *Ta'liqāt* were published twice. Rafiq al-'Ajam (Beirut, 1993) republished the Bulaq print, making minor changes without consulting any manuscripts. Hasan Ghaffārpūr Marāghī's (Tehran, 2011) publication is based on the Bulaq print, the second Cairo print, MS Mashhad (which was copied from Bulaq), and MS Milli. However, Marāghī did not provide an *apparatus criticus* nor did he articulate a robust editorial methodology.

thorough presentation of the *Başā'ir*'s transmission history, and an *apparatus fontium* identifying Sāwī's and 'Abduh's sources. Ultimately, the project aims to provide firmer ground for understanding Sāwī's place in the history of Arabic logic, and in particular his place in the reception of Avicenna's logic before Rāzī.

We present below three samples of critically edited text from the beginning, middle, and end of the *Başā'ir*. Twelve manuscripts were collated, in addition to the Bulaq print, whose siglum (*qāf*) we have rubricated in the apparatus, for ease of reference. Our working hypothesis is that the branch represented by MSS Ayasofya (*ṣād*), Laleli (*lām*), and Cairo (*kāf*) provides a text that is closest to Sāwī's composition. Of course, this hypothesis will be reassessed as we edit more of the text. Still, even from the samples shown below, it is clear that Bulaq and the Mount Lebanon family of manuscripts are often at variance with the edited text, sometimes in substantive ways.

5 Appendices

TABLE 14.1 Manuscripts and early prints of *al-Başā'ir an-Naṣīriyya*

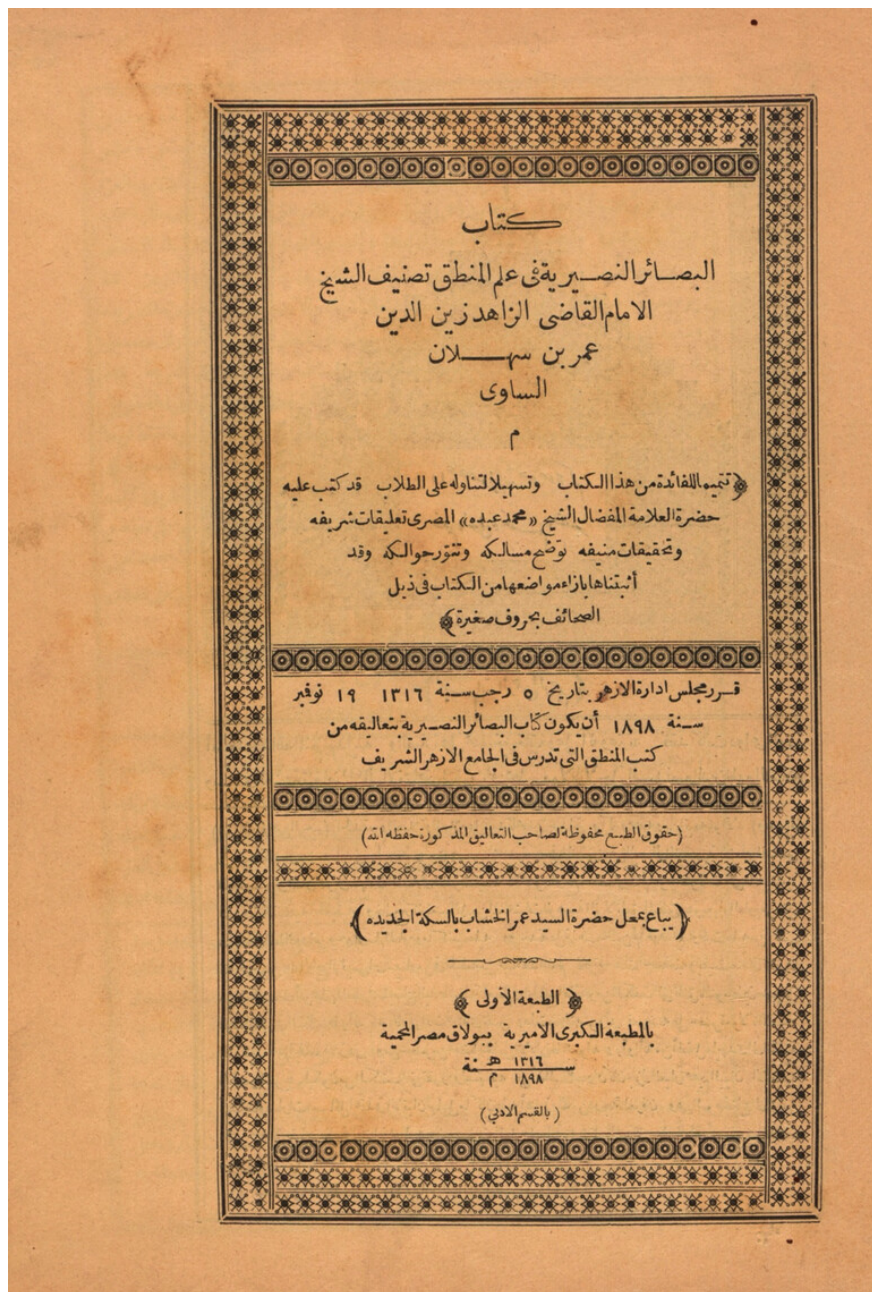
Sig.	Codex	Copy date
MS F	Istanbul, Süleymaniye Kütüphanesi, Fatih 3217	578/1182
MS T	Cairo, Dār al-Kutub, Taymūr Mantıq 148	606/1209
MS Ş	Istanbul, Süleymaniye Kütüphanesi, Ayasofya 2483	617/1220
MS L	Istanbul, Süleymaniye Kütüphanesi, Laleli 2560	640/1242
MS K	Cairo, Dār al-Kutub w10277	7th/13th cent.
MS S	Bursa, Bursa Yazma ve Eski Basma Eserler Kütüphanesi, Hüseyin Çelebi 1210	7th/13th cent.
MS M	Tehran, Kitābkhāna-yi Millī 265	8th/14th cent.
MS Ĥ	Istanbul, Topkapı Sarayı Müzesi Yazma Eser Kütüphanesi, Ahmet III 3438	886/1481
MS D	Tehran, Dānishgāh-i Tihirān, Kitābkhāna-yi Markazī 2755	1110/1698
MS Sh	Khenchara, Ordre Basilien Choueirite 320	1152/1739
MS B'	Unidentified intermediary between MS Sh and MS B	—
MS B	Beirut, American University of Beirut Library 75	1298/1881
MS C	Hypothesized draft-copy made from MS T in preparation for the Baabda print	—
MS A	Transcription commissioned by 'Abduh	1304/1886

TABLE 14.1 Manuscripts and early prints of *al-Baṣā'ir an-Naṣīriyya* (cont.)

Sig.	Codex	Copy date
U	Baabda, al-Maṭba'a al-'Uthmāniyya	1308/1891
MS Z	Cairo, al-Maktaba al-Azhariyya 15982	13th/19th cent.
Q	Cairo, al-Maṭba'a al-Amīriyya	1316–1317/1898–1900
MS N	Mashhad, Kitābkhāna-yi Markazī-yi Āstān-i Quds 6501	14th/20th cent.

TABLE 14.2 Abbreviations of the *apparatus criticus*

Abbreviation	Description
ها	In the margin (<i>hāmish</i>)
شا	Crossed out (<i>maṣḥūb</i>)
طا	Effaced (<i>maṭmūs</i>)
فا	Above the baseline (<i>fawq as-saṭr</i>)
تا	Below the baseline (<i>taḥt as-saṭr</i>)
عا	Transposed (<i>ma'kūs</i>)
«X» غا من	Changed from X (<i>mutaghayyar min X</i>)
«X» غا بـ	Changed to X (<i>mutaghayyar bi X</i>)
*	Written by an external hand
]	Separates <i>lemma</i> from variant
:	Separates variant from witnesses in which it appears
=	Separates two variants that share a <i>lemma</i>
-	Omitted
+	Added after the <i>lemma</i>

FIGURE 14.1 Frontispiece of 'Abduh's annotated edition of the *Baṣā'ir*

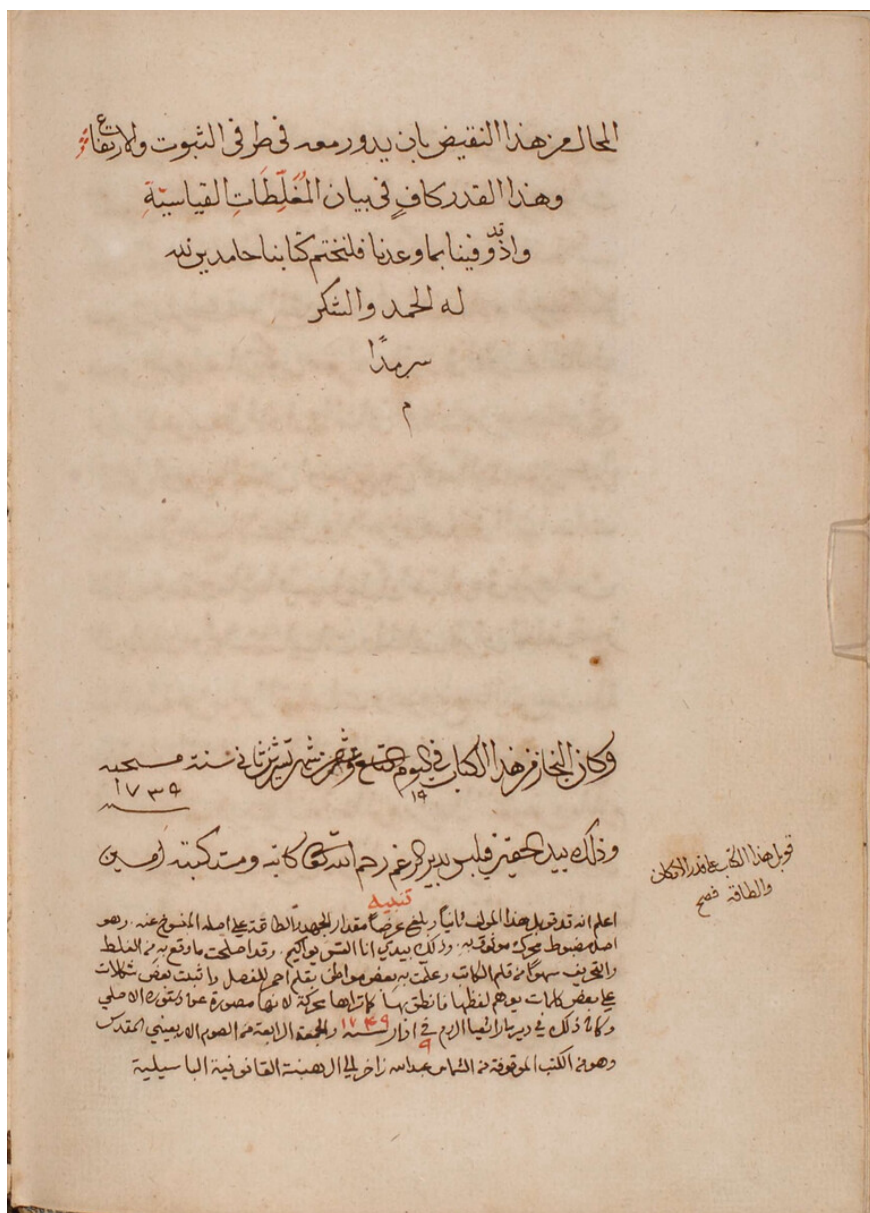


FIGURE 14.2 MS Khenchara, Ordre Basilien Choueirite 320, fol. 169b

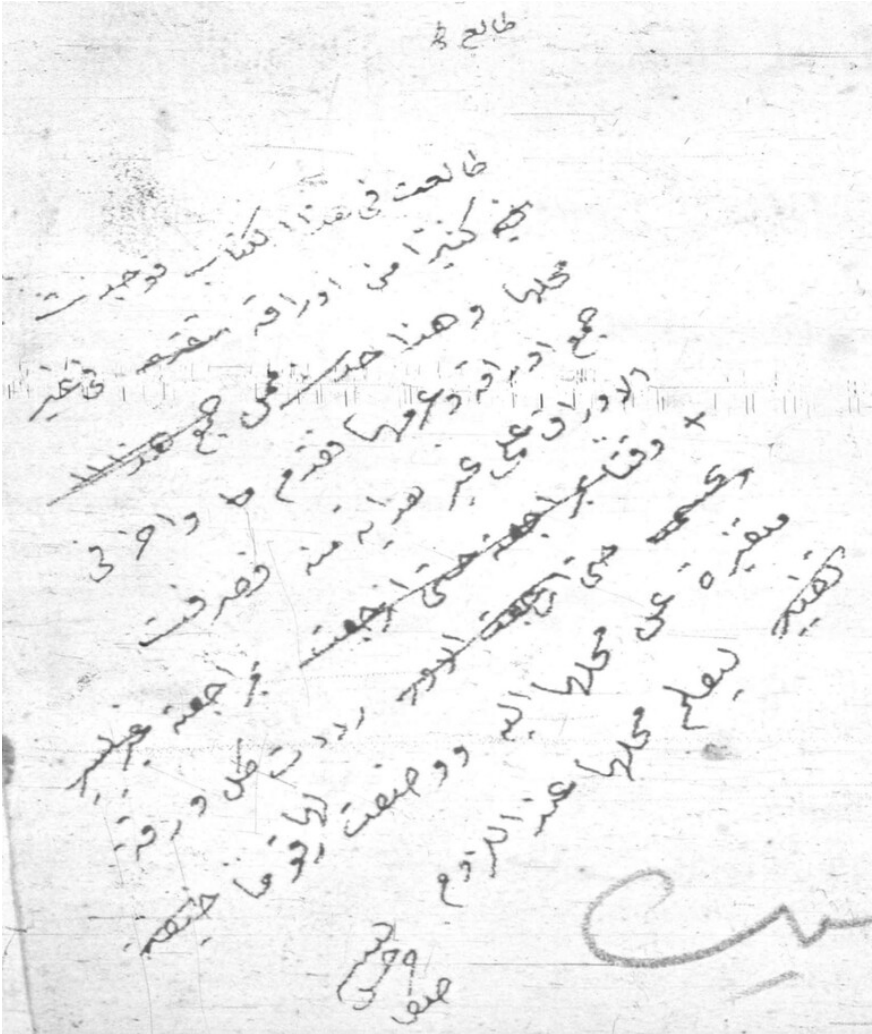


FIGURE 14.3 Autograph note by Jirjis Şafā on the flyleaf of ms Cairo, Dār al-Kutub, Taymūr, Mantîq 148

6 Sample Edited Text 1: Preface and First Two Chapters of the *Baṣā'ir*

بسم الله الرحمن الرحيم
 أمّا بعد حمد الله المنعم بهدايته والصلوة على محمد خير خليقته وعلى آله وعترته فقد كانت دواعي
 الهمة ومبادئ العزيمة تتقاضاني الانتهاض للتقرب إلى مجلس مولانا الأجل نصير الدين ظهير الإسلام
 بهاء الدولة كافي الملك عين خراسان أبي القاسم محمود بن أبي توبة زاده الله عظم القدر وحسن الذكر
 ونفاذ الأمر بجمع كتاب في بعض العلوم الحقيقية وإهداء أفضل ما تناله قوى البشر وتنتهي إليه غايات
 5 القدر إلى أفضل أكابر العالم وأجل من يسمو إليه أعناق العزائم. فينكث قوى العزم ويحلّ عرى
 الإجماع الجزم قصور باعي وضيق خطوي عن الانتهاء إلى فضيلة من الفضائل العلمية لم يملك زمامها
 ولم يُحدر لثامها ولم يُسر أغوارها ولم يُستن ظلمها وأنوارها. والتقرب إلى المستغني عن جدوى القرب
 يشوه وجه الأدب إلّا إذا تداركه الإذن بالتحسين وتلقاه الرضاء بحلي التزئين فلا جرم صرفني الحزم
 10 عن إمضاء ما شارفه العزم متطلعاً بتأشير الإذن الصادر عن حضرته الشريفة وسدته المنيفة إلى أن
 اتّصل بالخدام أمره العالي بتحرير كتاب في المنطق لا يردّه الاختصار إلى مضيق الإخلال ولا يُنبهه
 التطويل إلى متسع الإملا.

1 الرحيم] + اللهم أعن: ت، ز، ش = ربّ تمّ بفضلك: ح، ف = + وبه نستعين: ص = + صلى الله على سيّدنا
 محمد وآله: ل = + ربّ أنعمت فرد: د، م. 2 الله لله: ص. | خليقته] خلقه: ب، ت، ز، ش، ق = خلّقه:
 ص. | وعترته] وعشيرته: ب. 3 تتقاضاني] غال بـ «تتقاضيا في». | الانتهاض] هاب. | مولانا] + السيد:
 ل. | الأجل] + السيد: ب، ت، ز، ش، ق، ك، ل = ++ ظهير: شات = + السيد العالم: ص. 3-4 ظهير
 الإسلام بهاء الدولة كافي الملك عين خراسان] ح، -س، -ف، -ل. 4 بن] + علي بن: ص. | الله] + حسن:
 شاب. 5 بعض العلوم] علوم: د. | تناله] غاص. 6 يسمو] تسمو: ب، ت، ز، ش، ق = تسمو: د، ل،
 م = يسمو: س، ف، ك. 7 خطوي] خطري: د = خطوني: ل. | الانتهاء] الانتهاض: ب، ت، ز، ش،
 ق. 7-8 لم يملك زمامها ولم يُحدر لثامها] طاد. 7 لم] غاس من «لن». 8 يُسر] تسير: ب، ت، ز، ش،
 ق. | يُستن] تستين: ب، ت، ز، ش، ق. | والتقرب] -ص. 10 تبشير] بتأشير: غاب بـ «لتبشير»، ت، ش
 = لتأشير: غاز من «بتأثير»، ق. 11 يُنبهه] طاص = ينبيه: ب، ت، ح، ز، س، ش، ف، ق، ل. 12 متّسع]
 تنسع: ف.

فانتدبت لامثال مرسومه قوي العزيمة نافذ الصريمة وأوردت من المنطق ما لا يسع طالب العلوم الحقيقية الجهل به مقتصرًا على إبانة طريقي اكتساب التصوّر والتصديق الحقيقيين اللذين هما الحدّ والبرهان والهداية إلى وجوه الغلط فيهما دون الجدل والخطابة والشعر التي هي عن إفادة اليقين المحض بمعزل. وسميته البصائر النصيرية تفألًا بين ألقابه وتوصلاً إليه بأسبابه. ولن يعرف قدر هذا الكتاب إلّا من طال نظره في كتب المتقدمين بعين التأمل فيجد فيه عند تصفّحه إيضاح ما أغفلوه وتفصيل ما أجملوه وتنبهًا على مواضع غلط يهمل المتعلّم التفطن لها عساها ذهبت عليهم.

والله المستعان وعليه التكلان في أن يعصمنا من الزلل والخطل في القول والعمل. وهذا حين ما افتتح الكلام فيه بتقديم مقدّمة مشتملة على فصلين أحدهما في ماهية المنطق وبيان الحاجة إليه ومنفعته والآخر في موضوعه.

10 الفصل الأول في ماهية المنطق ووجه الحاجة إليه ومنفعته

الإنسان في مبدأ الفطرة خال عن تحقّق الأشياء وقد أعطي آلات تُعينه في ذلك وهي الحواسّ الظاهرة والباطنة فإذا أحسّ بأمر جزئية تنبّه لمشاركات بينها ومباينات ينتزع منها عقائد أولية صادقة لا يرتاب فيها عاقل ولا تزول بوجه ما مثل أنّ الكلّ أعظم من الجزء وأنّ الأشياء المساوية لشيء واحد متساوية وأنّ الجسم الواحد لا يكون في مكانين في آن واحد وعقائد أخر مساوية لهذه في القوّة كالحكم بأنّ كلّ موجود مشار إلى جهته وأنّ الأجسام إمّا لا تتناهي أو تنتهي إلى فضاء ممدود لا

1 فانتدبت [فانتدبت: ص = وانتدبت: س، ف. | مرسومه] غاز من «مرسومة» = مرسومة: ب. 2 إبانة [غال بـ] إفادة». | اللذين [الذين: ت، ش، م. 3 هي] هات «صح». | المحض [لـ. 4 تفألًا] تلفؤلاً: ق. | ألقابه [ألقابه: لـ. 5 = لقا به: فالك. 5 فيجد فيه] طاك. 6 غلط] غا*ل بـ«غلطوا». | يهمل] يهمل: س. | غلط يهمل] طاك. | لها [لما: لـ. | ذهبت [ذهب: ب. | عليهم] عليه: د، م. 7 وعليه] وعلى: ف. | يعصمنا] فيه: شات «صح». | الزلل] الذلل: س = + والخلل: ص. | والخطل] والخلل: ب، ز، ق = والخطا: ح، س، ف. 8 مشتملة] طات، ها*ت «بيان». 9 والآخر] والآخرى: ز. | في] + بيان: ص. | موضوعه] + أمين: ب. 10 في ماهية المنطق] ها*ص «صح». | ووجه الحاجة إليه ومنفعته] -ص. | الفصل الأول في ماهية المنطق ووجه الحاجة إليه ومنفعته] المقدّمة: لـ. 11 تحقّق] تحقيق: ح، لـ. 12 بينها] بينهما: د، م. | ومباينات] ومتباينات: ح، س، ف. | ينتزع] طات، ها*ت. 14 واحد] + بعينه: ب، ت، ز، ش، ق. 15 إلى] إلى: الي: ب، ت، ز، ش، ق. | إمّا] + ان: ص، ل، لـ. | تنتهي] ساهى: س. | ممدود] محدود: ب، ز.

يتناهي لكنّها كاذبة يستبان كذبها بشهادة القضايا الأول كما سنبينه من بعد. وقد يتردد في أمور بعد إدراك المحسوسات وانتزاع القضايا منها قد لا يجد إلى الحكم الجزم في بعضها سبيلاً وقد يجزم في بعضها بتصرّف في هذه القضايا وتوصل منها إليه وهذا التصرف قد يكون تارة على وجه الصواب وتارة على وجه الخطأ. ولا يشذ عن حكمنا هذا إلّا من أيدّ بحس صائب وقوة إلهية تزيه الأشياء كما هي وتغنيه عن الفكر.

5

فإذا انقسمت الاعتقادات الحاصلة للأكثر في مبدأ الأمر إلى حقّ وباطل وتصرفاتهم فيها إلى صحيح وفاسد دعت الحاجة إلى إعداد قانون صناعي عاصم للذهن عن الزلل ممّيز لصواب الرأي عن الخطأ بحيث يتوافق العقول السليمة على صحته وهذا هو المنطق.

وإنّما احتيج إلى تمييز الصواب عن الخطأ في العقائد للتوصل به إلى السعادة الأبدية لأنّ سعادة الإنسان من حيث هو إنسان عاقل في أن يعلم الحقّ والخير أمّا الحقّ والخير فلذاته والخير فالعمل به وقد

10

توفّرت شهادات العقول والشرائع على أنّ الوصول إلى السعادة الأبدية بهما. وإذا كان نيل السعادة موقوفاً على معرفة الحقّ والخير والروية الإنسانية قد يعترها الزيف والعدول عن نهج السداد في السلوك الفكري على الأكثر فربّما اعتقدت غير الحقّ حقّاً وما ليس بخير خيراً واستمرت على اعتقادها فحرم صاحبها السعادة الأبدية لما فاتته من درك الحقّ والخير والتمييز بينهما وبين الباطل والشرّ وتخلّف عن نيل النعيم الدائم في جوار ربّ العالمين.

15

1 لكنّها] ولكنّها: ح، د، س، ف، م. | الأول] الأولى: ص، ك، ل. 2 المحسوسات] المحسّات: ب، ت، ز، ش، ق. | منها] + تردد: ها*ك. | قد] غا*زب«وقد»، غال من «وقد» + = وقد: ها*ز = وقد: ق. | الحكم] حكم: د، م. | بعضها] كاشاب. 4 عن] من: ح، د، س، ف، م. | إلهية] غاك من «إلهية». 6 فإذا] وإذا: ح، د، س، ف، م = فاذ: ك. | وتصرفاتهم] وتصرفاته: ص، ك، ها*م«نخ» + = تصرفاته: هاف«نخ». | فيها] فام. 7 إعداد] ها*م«صح» = اعتقاد: د. | الزلل] الدلل: س. | ممّيز] هاف. | لصواب] غاس من «الصواب». 8 الخطأ] + في العقائد: ب، هات«صح»، د، ز، ش، ق، ل، م. | يتوافق] تتوافق: ب، ت، ز، ش، ق. 9 به] بها: ب، ت، ح، ز، س، ش، ف، ق. 10 الحقّ والخير] عاب، عات، عاز، عاش، عاق. | أمّا] غاش من «واما». | والخير] واما الخير: ب، ت، د، ز، ش، ق، م. 11 توفّرت] تواترت: ب، ت، ز، ش، ق = توافرت: ك. | شهادات] شهادة: ب، ز، ق. | الوصول] التوصل: ل. 13 على] ضاز. 13-14 خيراً واستمرت] خيراً واستمرت: د.

فإذا لا بدّ لطالب النجاة من التهدي إلى وجه التمييز بين الحقّ والباطل والخير والشرّ، والطريق إليه بمعرفة القانون الصناعي الذي يقيه الغلط في صوب النظر وإذ حقّت الحاجة إليه فنشرح وجه غنائه ومنفعته زيادة شرح.

فنقول الحاجة إلى المنطق لدرك المجهولات والمجهولات إمّا أن يُطلب تصوّرها فقط أو يُطلب التصديق بالواجب فيها من نفي أو إثبات.

والتصوّر حصول صورة شيء ما في الذهن فقط مثل ما إذا كان له اسم فنطّقه به تمثّل معناه في الذهن مثل تمثّل معنى المثلث أو الإنسان في الذهن دون أن يقتصر به حكم بوجودها أو عدمها أو وجود حالة أو عدمها لهما فإنّنا قد نشكّ في وجود شيء أو عدمه ويحصل في ذهننا المعنى المفهوم من لفظه. وأمّا التصديق فهو حكم الذهن بين معنيين متصوّرين بأنّ أحدهما الآخر أو ليس واعتقاده صدق ذلك الحكم أي مطابقة هذا المتصوّر في الذهن الوجود الخارجي عن الذهن كما إذا قيل الاثنان نصف الأربعة فصدّقت كان ذلك حكماً منك بأنّ الاثنان في نفسه نصف الأربعة كما حصل في ذهنك منه. وكلّ تصديق فيتقدّمه تصوّران لا محالة وربّما يزيد كما في قولنا الاثنان نصف الأربعة فإنّ فيه ثلاث تصوّرات تصوّر الاثنان والنصف والأربعة ولكنّ الزيادة على تصوّرين غير واجبة. وأمّا التصوّر فقد لا يفترق إلى تقدّم التصديق عليه فلذلك يسمّى العلم الأوّل.

1 التهدي [الهدى: ب، ز، ق]. | التمييز [الميز: س]. | والشرّ الشر: ق. 2 الغلط [الغلط: د]. | صوب [صواب: ب، ز، س، ش، ق]. | وإذا: ب، ت، د، ز، س، ش، ق، ك، م + قد: ل. | فنشرح [فلنشرح: ل. | وجه: ل. 3-2 غنائه ومنفعته [عاد، عاس، عاف، عام = منفعته وغاياته: ح، س. 2 غنائه [غاف بـ «غاياته» = غاياته: ب، ز، ق. 3 زيادة [زيادة: ل. 5 نفي [بقي: ل. 6 والتصوّر حصول صورة شيء ما في الذهن فقط مثل ما إذا كان له اسم [هال «صح». | والتصوّر + هو: ب، ت، ز، ش، ق. | ما [غاس من «أما». | ما] فات. 7 مثل [بمثل: د. | الذهن + من: ل. | بوجودها [غاس من «بوجودها». 8 لهما [غاص، غاك من «لها». | فإنّنا: وانا: ح، س، ف. | ويحصل [فيحصل: ب، ز، ق. 9 ليس + الآخر: ب، هات «خ» «صح»، ز، فاش، ق. | واعتقاده [واعتقادنا: د، م. 10 المتصوّر [التصور: س. | الوجود [لوجود: ز، ق. | قيل + ان: س، ف. | الاثنان [ان الاثنان: ح. 11 حكماً [حكمنا: س. | بأنّ [ان: ص. | نفسه: ب. 12 فيتقدّمه [فليتقدّمه: ب = مقدمه: س. | يزيد + عليه: ب، ها*ت، ز، ها*ش، ق، فال. | فإنّ فيه [غاز من «فافيه». 13-14 فقد لا [فلا: ص. 14 يسمّى [سمى: ح، ف. 14-484.16 الأوّل وبعض هذه المجهولات ... والثالثة في الأقوال الموصلة إلى التصديق [ك.

وبعض هذه المجهولات قد يكفي في دركه تذكره وإخطاره بالبال فإذا أخطرتنبه له. فهو مجهول إذ ليس حاضراً في الذهن ولا به علم بالفعل بل بالقوة. وأكثرها لا يكفي فيه التذكر بل إنما يدرك بمعلومات سابقة عليها وترتيب لها مخصوص لأجله يتأدى إلى العلم بهذا المجهول. ولكل مجهول معلومات تناسبه فلهجهول التصور معلومات تصوّرية والمجهول التصديق معلومات تصديقية. وتلك المعلومات إما أن تكون حاصلة بالفطرة من غير تقدّم معلوم هو سبب حصولها عليها أو حاصلة بمعلومات أخر سابقة 5 عليها ولكن لا يتسلسل بل ينتهي لا محالة إلى معلومات حاصلة بالفطرة بالمنطقي مدفوع إلى النظر في تلك المعلومات وكيفية تأليفها وتأديها إلى هذه المجهولات المطلوبة.

وقد جرت العادة بأن يسمّى الأمر المؤلّف من معلومات خاصّة على هيئة خاصّة مؤدّية إلى التصوّر قولاً شارحاً فنه حدّ ومنه رسم والمؤلّف من معلومات خاصّة على هيئة خاصّة يؤدّي إلى التصديق 10 حجة فنه قياس ومنه استقراء وغيرهما.

وقد يقع الخلل في كلّ واحد من الأمرين أعني القول الشارح والحجة تارة من جهة المعلومات التي منها التأليف وتارة من جهة تأليفها وتارة من جهتهما فقصارى المنطق أن يعرفنا المعلومات المناسبة لمطلوب مطلوب وهيئة تأليفها المؤدّية إليه وأنواع الخلل الواقع فيها فيحصل لنا العلم بالحدّ الحقيقي الذي يفيد تصوّر ماهية الشيء وبالشبيه به القريب منه الذي يسمّى رسماً والفاقد الذي لا فائدة في معرفته إلاّ اجتنابه. وكذا يحصل علمنا بالقياس البرهاني الذي يفيد التصديق الحقيقي بالشيء وبالقريب 15 منه الذي يسمّى قياساً جدلياً والبعيد عنه الذي يسمّى خطائياً والفاقد الذي يسمّى مغالطياً ويعرف

1 تذكره [ذكر: س. | وإخطاره] + في: شاب. 2 بالفعل [بالنقل: ب. | التذكر [التذكير: س، ف. | يدرك] تدرك: ب، ت، ز، ش، ق. 5 حاصلة] + عليها: س، ف. | بمعلومات [غاز من «معلوم». 6 عليها] فاس. | يتسلسل [تتسلسل: ب، ت، ز، ش، ق = تسلسل: ل. | ينتهي [تنتهي: ب، ت، ز، ش، ق. 7 تأليفها] تألفها: ل. 8 خاصّة [هال. | مؤدّية] يؤدّي: د، غام. 9 على هيئة خاصّة [د. | يؤدّي] غاز [ليؤدّي] = + ليؤدّي: ها*ز = ليؤدّي: ق. 10 ومنه [منه: ص. 11 القول] قول: د. 12 من [جهة: شاب. | جهتهما] جهتهما: ح، د، س، ف، م. | فقصارى [غاف من «فقصار» = فقصار: ح = فقصار: س. 13 إليه] إليها: ح، س، ف. | العلم [ها*ت «صح». 14 وبالشبيه] وبالشبه: س. | به [فات. | القريب] غاب من «القرب». | والفاقد وبالفاسد: د، م. 15 يحصل [يُحصل: ق. | وبالقريب] والقريب: ص. 16 عنه [منه: ح، س، ف. | خطائياً] قياساً: د. | يسمّى [فات. | ويعرف] ونعرف ذلك: ب، ت، ز، ش، ق.

لكي يُجتنب والخيّل الذي يسمّى شعرياً وهو الذي لا يوقع تصديقاً البتّة بل تخيلاً يؤثر أثر التصديق في ما يرغب فيه أو يُنفّر عنه.

وربّما يسأل فيقال إن كان تعرّف المجهولات من المعلومات بالفكر العقلي مفتقراً إلى قانون صناعي يقياس به فهذا القانون في نفسه من جملة الأوليات البيّنة المستغنية عن الفكر أو من جملة المعلومات الفكرية المفتقرة إلى قانون فإن كان من القبيل الأوّل فليستغن عن تعلّمه وإن كان من القبيل الثاني فليفتقر إلى نفسه وليُشترط في تعلّمه تقدّم العلم به وهو محال.

فجوابه أنّ درك العلوم منه ما هو بطريق استفادتها من معلومات سابقة عليها وترتيب لها خاصّ ومنه ما هو على سبيل التذكير والتنبيه كما سبق. والأوّل منه ما هو متّسق منتظم يسهل التدرّج فيه من الأوائل إلى الثواني والثالث ولا يعرض فيه الغلط إلّا نادراً كالعلوم العددية والهندسية ومنه ما ليس له اتّساق يؤمّن الغلط فيه كالعلوم الإلهية. والأمر المتعلّبة في المنطق منها ما هو على سبيل التذكير والتنبيه الذي لا يحتاج فيه إلى قانون متقدّم عليه ومنها ما هو على سبيل الوضع والتسليم كأكثر ما في قاطيغورياس ومنها ما هو على سبيل الاحتجاج واستفادة المجهول من المعلوم وما كان من هذا القسم منه فهو من القبيل المتّسق المنتظم المأمون وقوع الغلط فيه. وإخلاف الجاري في المنطق بين أربابه إنّما هو بسبب الألفاظ المشتركة وذهاب كلّ فريق إلى معنى منه لو قدر اتّفاقهم على معنى له واحد لما اختلفوا.

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1 والخيّل + هو: ل. | الذي - ب، -ت، -ز، -ش، -ق. | تخيلاً + ما ربّما يؤدّي: ل. 2 في ما] طاص.
3 كان - ب، -ز، -ق. | المعلومات] معلومات: س. | بالفكر] طاص. | مفتقراً] مفتقر: ب، -ز، -س، -ف، -ق. |
قانون] قانوني: س. 4 يقياس] يقاس: ل. | جملة] + البيّنات: شاب. | الفكر] فاش. 5 فإن] وان: س،
ف. | تعلّمه] غاش من «تعليمه» = أوّله: د. | القبيل] غاش من «قبيل». 6 وليُشترط] ويشترط: ز، -ق، -ل.
7 منه] فيه: س، -ف = به: تاف «نخ». | بطريق] طريق: ح. 8 التدرّج] التدرّج: ز، -ق. 9 العددية
والهندسية] عاب، عات، عاز، عاش، عاق. 10 والأمر] والعلوم: شاب = + والامور: ها*ب = فالعلوم:
ح، د، س، -ف، م = فالامور: ص. 11 ما هو] هاز. | والتسليم] والتسلّم: ص، -ل. 12 ما هو] -ص. |
واستفادة] واستعاذة: د. | هذا] هذه: س، -ف. 13 منه] -ب، -ت، -ز، -ش، -ق، -م. | القبيل] قبيل: ح.
14 بسبب] غاز من «سبب» = سبب: ب. | الألفاظ] الالفاظ: د. | منه] فيه: ح، د، س، -ف، -م. | لو] ولو:
ق. | له] فات، -ح، -س، -ص، شاف.

فهذا القدر كاف في بيان ماهية المنطق ووجه الحاجة إليه ومنفعته ثم المنطق إنما يفيد الفائدة المطلوبة منه إذا ارتاض الإنسان باستعمال هذه القوانين المتعلقة فيه وأما معرفتها دون تعود استعمالها والارتياض بها فقليلة الغناء والفائدة.

الفصل الثاني في موضوع المنطق

- موضوع كل علم هو الشيء الذي يُبحث في ذلك العلم عن أحواله التي تعرض له لذاته وتسمى تلك
5 الأحوال أعراضاً ذاتية وستعرفها. ولما تبين أن منفعة المنطق وقصاراه تعريف القول الشارح والحجة
مطلقاً أي على وجه كلي وقانون عام غير مخصص بشيء دون شيء إذا عُرف كذلك استغني عن
استئناف تعلم حدّ حدّ وبرهان برهان بل انطبق حكمه المجرد عن المواد الخاصة على جميع الحدود
والبراهين الخاصة فموضوع نظره إذا المعاني التي هي مواد القول الشارح والحجة المطلقين من حيث هي
10 مستعدة للتأليف المؤدي إلى تحصيل أمر في الذهن وهذه المعاني هي المعقولات الثانية.
- ومعنى قولي المعقولات الثانية هو أن ذهن الإنسان يحصل فيه صور الأشياء الموجودة خارج
الذهن وماهياتها ثم الذهن قد يتصرف فيها بأن يحكم ببعضها على بعض ويلحق ببعضها أموراً
ليست منها ويجرد بعضها عن عوارض خارجة عن حقيقتها فتصرف الذهن يجعل البعض محكوماً
والبعض محكوماً عليه والتجريد والإلحاق أحوال تعرض لهذه الماهيات الموجودة في الذهن فالماهيات
معقولات أولى وهذه الأحوال العارضة لها بعد حصولها في الذهن معقولات ثانية وهي كون
15 الماهيات محمولات وموضوعات وكليات وجزئيات إلى غير ذلك مما تعرفه.

1 كاف] غا*ز من «كافي» = كافي: ت، ش. | في] فاش. | بيان] + وبيان: ها*ف«نخ». | ثم] + أن: ل.
2 منه] ل. | المتعلقة] المتعلقة: د. | وأما] فأما: ص، ل. | 4 في موضوع المنطق] -ص. | 5 علم] +
انما: شاب. | 6 منفعة] معرفة: ح، س، ف. | القول] قول: ب. | 7 وقانون] وقانوني: ب = قانوني: ز،
ق. | مخصص] مختص: د، م. | بشيء] لشيء: ص. | شيء] + بل: ل. | كذلك] ذلك: ح = كذلك: س، ف.
8 تعلم] هاس«صح». | المجرد] هات«صح»، فا*ش. | 9 فموضوع] غا*ش من «موضوع». | نظره] المنطق: ل. |
المطلقين] المطلقين: د، م. | 10 للتأليف] التأليف: ب. | المعقولات] غاب من «المقولات». | 11 قولي]
قولنا: ب، ت، ح، ز، س، ش، ف، ق = قول: د. | المعقولات] -ب، -ت، -ز، -ش، -ق. | 12 فيها] + تارة:
شأت. | ببعضها] بعضها: ل. | 13 محكوماً] حكماً: ب، ت، ز، ش، ق. | 15 أولى] أول: ح، د، س، ف، ل،
م. | وهي] وهو: ص. | 16 الماهيات] الماهية: د.

فإذاً موضوع المنطق هذه المعقولات الثانية من حيث هي مؤدبة إلى تحصيل علم لم يكن. وأما المعقولات الأولى فإنما ينظر فيها إذا حاول أن يطبق هذا القانون المتعلم على الحدود والبراهين الخاصة ويحاذاها به فحينئذ يلتفت إلى هذه المعقولات الأولى التي هي ماهيات الأشياء الموجودة مثل كونها جواهر وكميات وكيفيات وغير ذلك مما هي أجناس الأمور الموجودة كما ستعرفها.

5 هذا إذا تعلم الإنسان المنطق بفكرة ساذجة مع نفسه دون الاستعانة بمعلم يخاطبه ويحاوره لو أمكن أمّا إذا جرى فيه التعليم على سبيل المخاطبة والمحاوره ولم يكن ذلك إلا بالفاظ صارت الألفاظ أيضاً منظوراً فيها بالضرورة خصوصاً وفكر الإنسان في ترتيب المعاني قلباً ينفك عن تحيّل ألفاظها معها حتى كان الإنسان يناجي نفسه بالفاظ متخيّلة إذا أخذ في التروّي والتفكر ثم المعاني والألفاظ التي هي مواد الأقوال الشارحة والحجج مؤلفة ولا يحصل العلم بالمؤلف إلا بعد الإحاطة بمفرداته لا من كلّ وجه بل من حيث هي مستعدة للتأليف. 10

فلا جرم وجب علينا أن نعرف أحوال الألفاظ المفردة والمعاني المفردة من هذه الجهة أولاً، ثمّ نعتبه بتعريف القول الشارح المفيد للتصوّر إذ التصوّر سابق على التصديق طبعاً فيستحقّ التقديم وضعاً ونقدّم على هذا التعريف ما يحتاج إليه القول الشارح من التأليف، ثمّ نتبعه بتعريف الحجج على أصنافها تقدماً لأنواع التأليف الواقعة فيها. فيشتمل كتابنا لهذا الوجه على ثلاث مقالات الأولى 15 في المفردات والثانية في الأقوال الشارحة الموصلة إلى التصوّر والثالثة في الأقوال الموصلة إلى التصديق.

1-2 وأما المعقولات] غاب من «والمعقولات». 2 الأولى] الاول: ح، د، س، ف، م. 3 به] -ص = بها: ب، ت، ز، ش، ق. | الأولى] الاول: ح، د، س، ف، م. 4 ممّا] غاب من «فيما». 5 ويحاوره] اويحاوره: ص. | لو أمكن] باب. | لو] او: د = ولو: ص. 6 إذا] + كان: شاب. | فيه التعليم] عاب، عات، عاز، عاش، عاق. | ولم] فلم: ح، س، ف. | يكن] يمكن: ح. | ذلك] فات، فاش. | بالفاظ] بالالفاظ: ح، ف. 7 خصوصاً] وخصوصاً: ص، ل. | معها] طات. | حتّى] هاص. 8 كان] هات «صح». 9 ولا] فلا: ب. 12 للتصوّر] التصوّر: ح، س، ف. | إذ] غاف من «إذا» = اذا: س. 13 التعريف] طاص. 14 لأنواع] طاص. | لهذا] لهذه: د، م. 15 والثانية] الثانية: ح، د، ف، م. | والثالثة] الثالثة: ح، د، ف، م.

7 Sample Edited Text II: *Baṣā'ir*, *maqāla* II, *fann* i, *faṣl* 4**الفصل الرابع في الأجزاء التي هي قوام القضايا الحملية من حيث هي قضايا وفي العدول والتحصيل**

القضية الحملية إنما تتم بأمور ثلاثة الموضوع والحمول والعلاقة التي بينهما، فإنك إذا قلت «الإنسان حيوان» عقلت علاقة ونسبة بين الإنسان والحيوان لولاها لما كان الإنسان موضوعاً والحيوان محمولاً، وتلك النسبة تستحقّ لفظاً دالاً عليها ولكن ربّما اقتصر على لفظ الموضوع والحمول تعويلاً على فهم الذهن تلك العلاقة، بلى لو كان المحمول كلمة أو لفظاً مشتقاً لم يحوّج إلى إفراد لفظ العلاقة لأنّ 5 الكلمة تتعلق بذاتها بالموضوع لأنها تدلّ على معنى موجود لموضوع فالدلالة على الموضوع متضمنة الكلمة وكذلك الاسم المشتقّ مثل الضارب والأبيض يدلّ على الضرب والبياض لموضوع له لكنّ الفرق بينه وبين الكلمة أنّ الكلمة تدلّ مع ما يشارك الاسم المشتقّ في الدلالة عليه على زمان معيّن والاسم المشتقّ عادم لهذه الدلالة، والدالّ على هذه العلاقة يسمّى رابطة مثل «هو» أو الكلمات الوجودية.

والقضية التي صُرح فيها بالرابطة تسمّى ثلاثية مثل قولك «زيد هو كاتب» أو «يوجد كاتباً» والتي 10 لم يصرح فيها بهذه اللفظة تسمّى ثنائية.

والقضية الثلاثية إنما تكون سالبة إذا دخل حرف السلب على الرابطة فرفعها وسلبها مثل قولك «زيد ليس هو كاتباً» وتسمّى سالبة بسيطة، أمّا إذا دخلت الرابطة على حرف السلب فلا يكون القضية سالبة وذلك مثل قولك «زيد هو لا بصير» أو «غير بصير» أو «ليس بصيراً» لأنّ «هو» ربطت 15 ما بعدها بالموضوع وصيرت حرف السلب جزءاً من المحمول فصار «ليس» أو «لا» مع ما بعدهما

1 هي [فا*ز. | القضايا] قضايا: د. | وفي [في: ب. 3 عقلت] عقلت: ب، ت، ز، ش، ق. | لولاها] ولولاها: ك. 4 تستحقّ] تسمّى: ح، س، ف. 5 تلك] بتلك: ب، ت، ز، ش = تلك: ق. | إفراد] اقتران: ل. | العلاقة] للعلاقة: ب، ت، ز، ش، ص، ك. 6 فالدلالة] والدلالة: ك. | متضمنة] غا*زب «مضمنة» = مضمنة: ق. | الكلمة] غا*زب «الكلمة» للكلمة: د، ق، م. 7 وكذلك] ولذلك: ص، ك. 7-8 مثل الضارب والأبيض يدلّ على ... عليه على زمان معيّن والاسم المشتقّ] -ص. 7 الضرب والبياض] عاب، عات، عاز، عاش، عاق. 8 تدلّ] + على: شاب، شا*ز. | مع] فا*ز. | يشارك] غا*زب «يشارك» = يشارك: ق. 9 لهذه] لهذا: ك. | يسمّى] -ص. | أو الكلمات] والكلمات: ب، ت، ز، ش، ق، ل. 10-11 ثلاثية مثل قولك زيد هو كاتب أو يوجد كاتباً والتي لم يصرح فيها بهذه اللفظة تسمّى] -ص. 11 اللفظة] اللفظة: ت. 12 وسلبها] أو سلبها: ح، د، س، ف، م. 13 هو] هات. | يكون] تكون: ب، ت، ز، ش، ق. 14 قولك] ضات. 15 ليس] هاك. | لا] + ليس: شاك. | بعدهما] غا*زب «بعدها» = بعدها: ق.

شيئاً واحداً محمولاً على الموضوع بالإيجاب والإثبات، ومثل هذه القضية يسمّى معدولة ومتغيرة. وإذا وقع مثل هذا الاسم المتحد بحرف السلب، الذي يسمّى غير محصل، في جانب الموضوع سُمّيت القضية أيضاً معدولة لكن مطلق العدول لا يُفهم إلا في جانب المحمول. والقضية المعدولة قد تكون موجبة كما ذكرناه وقد تكون سالبة وهو أن يكون حرف السلب في القضية داخلاً على الرابطة مثل قولك «زيد ليس هو غير بصير».

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والفرق بين السالبة البسيطة والموجبة المعدولة، أمّا في الثلاثية فن وجهين أحدهما من جهة الصيغة وهو أن حرف السلب داخل على الرابطة في السالبة ومدخول عليه في الموجبة المعدولة وأمّا من جهة المعنى فهو أن موضوع الموجبة المعدولة لا بدّ من أن يكون موجوداً لأنّ حكمها الإثبات فإنّ هو إذا كان قبل حرف السلب يقتضي ثبوت ما بعده للموضوع سواء كان ما بعده قابلاً للثبوت أي أمراً وجودياً أو لم يكن قابلاً للثبوت أي أمراً عديمياً سلبياً فلسناً في اعتبار صدق القضية وكذبها بل في اعتبار مقتضى القضية إذا تأخّر حرف السلب عن الرابطة ولا محالة أنّ مقتضاها إثبات ما بعدها وإيجابه للموضوع ولا يتصور إثبات شيء لآخر إلا إذا كان ذلك الآخر ثابتاً إمّا في نفس الأمر أي الوجود الخارجي أو في الوهم بأن يحكم الذهن عليه بوجود هذا المحمول له لا في الذهن فقط بل على أنّه إذا وُجد، وُجد له هذا المحمول فإن لم يكن للشيء وجود إلا في الذهن فحال أن يحكم عليه بثبوت شيء له لا في الذهن بل في نفس الأمر وليس هو موجوداً في نفس الأمر. وإمّا أوجبنا أن يكون الموضوع في الموجبة المعدولة موجوداً لا لأنّ قولنا «غير بصير» لا يقع إلا على الموجود بل لأنّ الإيجاب نفسه يقتضي ذلك سواء كان «غير بصير» يقع على الموجود والمعدوم أو لا يقع إلا على الموجود، وربما يُقبل في الظاهر الإيجاب المعدول على ما هو محال الوجود لمطابقة ذلك الإيجاب السلب مثل ما

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15

1 يسمّى [تسمّى: ب، ت، ز، ش، ق. 3 في] من: ح، د، س، ف، م. 4 يكون [يكرر: ص، ك = يتكرر: ل. 6 جهة] غاف من «حيث» = حيث: ك، ل. 7 السالبة + البسيطة: ل. 8 موضوع [غاب من «الموضوع». | من: ل. 9 للموضوع سواء كان ما بعده] هال «صح اصل». | أمراً - ق. 10 فلسناً [ولسنا: ح، د، س، ف، م. 12 لآخر] آخر: ص. | ذلك - ح. 13 له - ح، - س، - ف، فاك. 14 وجود إلا [وجوداً لا: ف. | وجود] وجوداً: ل. 15 لا - ص. 16 المعدولة [المعدلة: ص. | موجوداً] غاب من «موجباً». | لا] هاز. 16-17 لا يقع إلا على الموجود بل لأنّ الإيجاب نفسه يقتضي ذلك سواء كان «غير بصير» هاس «صح». | بل لأنّ الإيجاب نفسه يقتضي ذلك سواء كان غير بصير يقع على الموجود والمعدوم أو لا يقع إلا على الموجود - ك. 18 يُقبل [قبل: ل = يحمل: د، م. | السلب] والسلب: ح، د، س، ف، م + = للسلب: هام «نخ».

يقال العناء هي «غير موجودة» أو «الخلاء معدوم» والتحقيق ما ذكرناه. وأما السلب فيصح عن كل موجود ومعدوم إذ ما ليس موجوداً فيصح سلب جميع الأشياء عنه فيصح أن تقول «شريك الله ليس هو بصيراً» لأنه إذا لم يكن فلا يكون بصيراً ولا سمياً ولا شيئاً من الأشياء، ولا يصح أن تقول «شريك الله هو غير بصير» لأن هذا حكم بإيجاب «الغير بصيرية» لشريك الله وما هو محال الوجود لا يتصور إثبات أمر له وإن كان عديمياً.

5

وأما الثنائية فلا فرق فيها بين السالبة والمعدولة من جهة اللفظ لأن حرف السلب مقرون فيهما جميعاً بالمحمول لكن يفترقان من وجهين، أحدهما النية فإن نوي جعل حرف السلب جزءاً من المحمول وإثباتهما كشيء واحد للموضوع كان عدولاً وإن لم ينو ذلك بل نوي أن يرفع به ما هو المحمول كان سلباً، والآخر عرف الاستعمال فإن لفظة «غير» لا تستعمل في العادة إلا بمعنى العدول و«ليس» لا تستعمل إلا للسلب.

10

وقد حاول قوم أن يفرقوا بين الموجبة المعدولة وبين السالبة البسيطة بأن جعلوا المعدولة في قوة العدمية والعدمية عندهم هي التي محمولها أحسن المتقابلين سواء كان عدماً كالعمى والظلمة أو ضدّاً كالجور وفي التحقيق هي التي تدلّ على عدم أمر من شأنه أن يكون موجوداً للشيء أو لنوعه أو لجنسه القريب أو البعيد وهذا اصطلاح لغوي.

15

والتحقيق ما ذكرناه مع أن المعدول في استعمال المنطقيين أعم من العدمية على الرأيين جميعاً وذلك لأن كل معنى بسيط محصل فإما أن يكون له ضدّ أو لا يكون فإن كان له ضدّ فإما أن يكون بينهما

1 [هي] -ص، ل- = هو: ب، ت، ز، ش، ق، ك. | موجودة] موجود: ب، ت، ز، ش، ص، ق، ك، ل.
2 [فيصح] يصحّ: ح. | تقول] يقال: ح، س، ف. 3-4 ليس هو بصيراً لأنه إذا لم يكن فلا يكون بصيراً ولا سمياً ولا شيئاً من الأشياء ولا يصحّ أن تقول شريك الله] -ص. 3 لأنه] هاف. | بصيراً ولا سمياً] عال. | ولا يصحّ] ويصح: ب. 4 غير] ضات. | الغير] للغير: ك. | بصيرية] بصرية: ب، ز، ش = البصرية: ح = البصير به: س، ف = بصير البصرية: ل. 6 السالبة] + البسيطة: ح، د، س، ف، م. 7 من] + وجهان: شاب. | وجهين] جهين: ص. | نوى] -ح، -س، -ف. 8 كشيء] لشيء: ب، ز، ش، ق. | للموضوع] وهو الموضوع: ق. | وإن] فان: ح، س، ص، ف. 9 الاستعمال] للاستعمال: ك. | بمعنى] لمعنى: ح، د، س، ص، ف، ك، م. 11 وقد] + طول: شاف. | حاول] فاف. | البسيطة] -ح، -س، -ف. 12 أحسن] ها*ز، غا*ز من «أخص» = احسن: ص. | سواء] + ان: ك. 15 والتحقيق] + فيه: ل. | مع] على: ق. | المعدول] العدول: ح، د، س، ف، م = المعدولة: ق. 16 أولاً] ولا: ب. | يكون] + له ضد: ل. 16-488.1 فإن كان له ضدّ فإما أن يكون بينهما متوسط أو لا يكون] -د.

متوسط أو لا يكون فإذا فرضنا موضوعاً موجوداً فيما أن يوجد فيه هذا المعنى البسيط المحصل أو ضده أو واسطتهما إن كانت أو يكون جميع ذلك بالقوة مثل الجور الذي لم يفتح فإن العمى والبصر كليهما فيه بالقوة أو لا يكون قابلاً لشيء من ذلك لا بالقوة ولا بالفعل مثل النفس لا تقبل البياض ولا السواد ولا الوسائط بينهما لا بالقوة ولا بالفعل. ولتمثل ذلك المعنى بالعدل فإذا قلنا لموضوع موجود «هو غير عادل» صدق هذا الحكم إذا كان جائراً أو متوسطاً بين الجور والعدل أو كلاهما فيه بالقوة كالصبي أو لا بالقوة ولا بالفعل كالخبر وإنما يكذب إذا كان الموضوع معدوماً أو كان موجوداً ولكنه عادل والعدمية التي محمولها أخس المتقابلين وهي قولنا «زيد جائر» فلا يصدق إلا عند الجور فهي أخص من قولنا غير عادل.

وأما على الرأي الثاني فالمعدل أعم منها أيضاً لأننا نستعمل المعدول عند عدم ما ليس من شأن جنس من أجناس الموضوع قبوله وذلك أننا نقول «الجور غير موجود في موضوع» أو «الجور هو لا عرض» و«ليس للجور جنس» فضلاً عن أن يكون ولا يقبل العرض، ولكن السالبة البسيطة وهي قولنا «زيد ليس هو بعدل» أعم من الموجبة المعدولة لأنها أعني السالبة تصدق في ما يصدق فيه المعدولة وعند كون الموضوع معدوماً أيضاً والمعدولة لا تصدق فيه.

1 متوسط [مُتَوَسِّطاً]: ل. 2 واسطتهما [غاش من «واسطتهما». | كانت أو] هاص، هالك. | الجور [الجزء]: ح = الجزء: س. | يفتح [يفتح: ح، س، ف. | كليهما] كلاهما: ص، ل = كليهما: س، ف. 3 تقبل [+ السواد ولا: ك. 4 السواد ولا]: ك. | ولتمثل [وليمثل: ح، ص، ف. | ذلك] + با: شاب. | فإذا] فأنا إذا: ل. | لموضوع] غاس بـ «الموضوع». 5 الجور [الجود: ب = الحجر: ص. 6 كالصبي] + فان كليهما فيه بالقوة: ل. | كالخبر] غا*ز من «بالخبر» = بالخبر: ب، ش. | كان]: د. | ولكنه] غاش من «او لكنه» = غير: ح، س، ف. 7 والعدمية] + هي: ب، هات «صح»، ز، ش، ق. | محمولها] موضوعهما: ص. | أخس] ها*ز = اخص: ب، شاز، ش = احسن: ص. | وهي] وهو: ب، ت، ز، ش، ص، ق. | فلا] ولا: ص. | عند] + وجود: ل. | فهي] هال. 9 الرأي] رأى: س. | المعدول] + غير: شاف. | عند] فاف. 10 أجناس] الاجناس: س، ف. | قبوله] + ذلك: ح، س، ف. | في موضوع] هام «صح». 10-11 هولا] غاك من «لا هو». 11 وليس] فليس: ح. | للجور] + هو: س. | جنس] للجنس: ب. | ولا] لا: ب، ت، ز، ش، ق، ل. 12 وهي] غاك من «هي». | هو] -ق. | ليس هو] عاص. | يصدق] تصدق: ب، ت، ز، ش، ق. 13 معدوماً أيضاً] عاك.

وقد جرت العادة بأن يُفرض في هذا الموضع ألواح فتثبت الموجبة البسيطة وبإزائها السالبة البسيطة وتحت الموجبة البسيطة السالبة المعدولة وبإزائها الموجبة المعدولة وتحت السالبة المعدولة السالبة العدمية وبإزائها الموجبة العدمية. ويُعتبر عموم كل واحدة في الصدق والكذب وخصوصها بالنسبة إلى وجود المحمول وضده والواسطة بينهما وكونهما بالقوة وفي ما إذا كان الموضوع معدوماً أو موجوداً ويقاليس بينها وبين أخواتها في هذه الأحوال ويُنَيَّن أنَّ ما كان أخصَّ 5 صدقاً من غيره فهو أعمّ كذباً منه وما كان أعمّ صدقاً من آخر فهو أخصّ كذباً منه وأنَّ ما كان أعمّ صدقاً من غيره فنقيضه أخصّ صدقاً من نقيض ذلك الآخر وأنه إذا صدق الأخص صدق الأعم وإذا صدق الأعم فلا يجب أن يصدق الأخص لكأنَّ لما لم نَيَّن بعد حال النقيض لما رأينا أنَّ تأخيره أولى لم تثبت هذه الألواح فن أراد الوقوف عليها فليطالعها من كتب أفضل المتأخرين ومن أخذت الفطنة بيده أمكنه أن يعتبر هذه الأحوال بنفسه إذا عرف حال التناقض بعد هذا عن قريب. 10

1 الموضع [الموضوع: ب، س، ق. | فتثبت + عليه: ب، ت، ز، ش، ق = فتثبت: س، ف = فتثبت: ك.
2 وتحت [وتجِبُ: ل. | البسيطة: ح، -س، -ف. | المعدولة [المعدولي: ك. | وبإزائها [بازايتها: ب. | وتحت [وتجِبُ: ل. 3 العدمية [العدمية: ش. | ويعتبر [وغير: ص. | واحدة [واحد: ل. 4 المحمول [المحمولة: س، ف. | بينهما [غاز من «بينها». | وكونهما [وكونها: ب، ت، ز، ش، ق، ك. | ولا بالقوة [والبفعل: س، ف. | ولا بالقوة [والبفعل: ل. | ولا [ولا: د، م. 5 بينهما [غاز، غاس من «بينهما». | الأحوال [هال «صح» = الحالة: ل. | في هذه الأحوال [ص. | ويُنَيَّن [ونين: ل. 6-7 فهو أعمّ كذباً منه وما كان أعمّ صدقاً من آخر فهو أخصّ كذباً منه وأنَّ ما كان أعمّ صدقاً من غيره] هاك. 6 منه + في هذه الأحوال: ص. | كان [هو: ل. | من [د، -م. 6-7 آخر فهو أخصّ كذباً منه وأنَّ ما كان أعمّ صدقاً [هات «صح»، هام «صح». 7 من [ت، تاش. | إذا [غاز*ش من «وإذا». 8 وإذا صدق الأعمّ [ها*ش «صح»، -ص، هام «صح». | فلا يجب [فيجب: ب. | فلا [فليس: ل. | لما [ح، -س، -ف، هام «صح». | نَيَّن [تبيَّن: ل. 9 أولى [فاب = اولم [ولا: شاب. | فليطالعها [فيطالعها: س، ك. | من [في: ل. 10 إذا [غاك من «اذ».

8 Sample Edited Text III: Final Passages of the *Baṣā'ir*

وأما الغلط في صورة القياس فإما أن يكون بشركة من المقدمات أو من غير شركة بل في الصورة وحدها والذي هو بشركة المقدمات فأن لا يكون الأجزاء الأول التي هي الحدود أو الأجزاء الثواني التي هي المقدمات متميزة مثال الأول هو أن يعبر عن الأصغر والأوسط باسمين مترادفين أو عن الأوسط والأكبر بمترادفين فيعدم القياس أركانه الثلاثة في المعنى فيختل صورته بسببه وهذا من المصادرة على المطلوب الأول أو كان الوسط لفظاً مشتركاً مستعملاً في المقدمتين بمعنييه المختلفين ومثال الثاني وهو عدم التميز في المقدمات فلا يتبهاً في ما أجزاؤه الأولى بسائط بل في ما يكون ألفاظاً مركبة ثم ينقسم قسمين فإما أن يكون أجزاء المحمول والموضوع متميزة الوضع والحمل ولكن غير متميزة في الاتساق كقول القائل كل ما علمه الحكيم فهو كما علمه والحكيم يعلم الحجر فهو إذاً حجر وقد عرفت ما فيه وإما أن لا يكون متميزة في الوضع فيكون هناك شيء هو من الموضوع فيتوهم أنه من المحمول أو من المحمول فيتوهم أنه من الموضوع مثل قول القائل الإنسان بما هو إنسان إما أن يكون أبيض أو لا يكون أبيض فقله بما هو إنسان لا يدري أجزء من المحمول أو من الموضوع فن هذه الوجهه يعرض الخلل في صورة القياس بمشاركة المقدمات وأما الغلط في صورة القياس وحدها من غير شركة فإما لأن تأليفه ليس تأليف الأشكال الثلاثة بأن لم يكن فيه شيء مشترك الاشتراك الخاص بها وانتفاء الاشتراك إما في الظاهر والحقيقة معاً وهذا مما لا يشتبه على عاقل خلوه عن الصورة القياسية أو في الحقيقة دون الظاهر وهو أن يكون الوسط لفظاً مشتركاً وقد ذكرناه في ما اختلال صورته بشركة من المقدمات أو

1091.1-4 وأما الغلط في صورة القياس ... محمد خير خلقه وعلى آله وأصحابه [ك. 1 القياس] -س. | بشركة| مستركة: س. | من| بين: ب، ت، ز، ش = مع: ق = في: ل. | بل| + هو: ح، س، ف. 2 المقدمات| لمقدماته: ب، ت، ز، ش، ق. | يكون| تكون: ب، ت، ز، ش، ق. | الأول| الأولى: ب، ت، ز، ش، ص، ق، ل. | أو| كاشاب. | الثواني| للثواني: ص. 3 والأوسط| والاكبر: ب، ت، ز، ش، ق. | باسمين| هات«صح». | أو عن| وعن: س. 4 أركانه| اوكانه: د. | الثلاثة| الثلث: ب. | فيختل| فتختل: ب، ت، ز، ش، ق، ل. 5 مستعملاً| مستعمل: ل. | المقدمتين| المعنيين: ص. | بمعنييه المختلفين| ها«س»«صح». | وهو| هو: ص. 6 بسائط| البسائط: ح، س، ف. | يكون| تكون: ب، ت، ز، ش، ق. | ألفاظاً| الفاظ: ح، س، ف. | ينقسم| تنقسم: ب، ت، ز، ش. 7 يكون| تكون: ب، ت، ز، ش، ق. | والموضوع| او الموضوع: س. 8 كقول| كقولك: س، ف. | وقد| فقد: س. | ما| ممّا: د. 9 لا| فاص. | يكون| تكون: ب، ت، ح، ز، ش، ق، ل. | هو| -ز، -ق، -هام«صح». | أو من| ومن: ص. 11 بما| ممّا: د. | يعرض| بعرض: ب. 12 بمشاركة| مساركة: س. 14 إمّا| غاب من «واما».

لأنّه عادم شريطة شكل هو من ضروبه بأن يكون صغراه سالبة في الأوّل والثالث أو كبراه جزئية في الأوّل والثاني أو كان من موجبتين في الثاني أو من سالبتين أو جزئيتين أو سالبة صغرى كبراه جزئية في جميع الأشكال وإذا عرفت هذا في القياسات الخلية ومقدّماتها فيسهل عليك اعتباره في غيرها من الشرطيات والاستثنائيات والخلف غير أنّ الخلف يتميّز بمغالطة عن سائر القياسات وهي وضع ما ليس بعلة علة فإنّ القياس ربّما يلزم المحال من أخذ نقيض موضوع في قياس خلف ويدعى 5 أنّه إنّما يلزم من هذا النقيض وما يلزمه المحال فهو محال ولا يكون لازماً منه بل من مقدّمة أخرى كاذبة استعملت فيه حتّى لو رفعنا نقيض الموضوع واستبقينا تلك المقدّمة كان المحال باقياً فينبغي أن يجتنب عن هذا الغلط أيضاً بمراعاة صدق المقدّمات الأخرى وتعيّن لزوم المحال من هذا النقيض بأن يدور معه في طرفي الثبوت والارتفاع وهذا القدر كاف في بيان المغالطات القياسية.

10 وإذ وفينا بما وعدنا فلنختم كتابنا حامدين لله تعالى مصليّين على نبيّه محمّد خير خلقه وعلى آله وأصحابه.

1 ضروبه [ضروريّه: د = ضروريته: س، ف، ل. | يكون] تكون: ب، ت، ز، ش، ق، ل. 2 كان
 3-2 كبراه جزئية [كبرا وجزئية: ل. 3 عرفت] عرف: ق. | فيسهل [يسهل: ح، س،
 ف. 4 وهي] وهو: ب، ت، ح، د، ز، س، ش، ف، م. 5 القياس [القياس: ت، ص. | موضوع]
 غاف من «الموضوع». 6 يلزم [لزم: ب، ت، ز، ش، ص، ق. | يلزمه] يلزم: ب، ت، ز، ش، ق. |
 مقدّمة [مُقدّمات: ل. 7 استعملت فيه] استعمل به: ل. | رفعنا [رفعناه: س، ف. | نقيض] بعض: ص. |
 واستبقينا [استبقينا: ل. 8 يجتنب] ها*ز = يجتنب: ب، ت، ش = يجتنب: ز. | بمراعاة [مراعاته: س، ف. |
 وتعيّن] ويعيّن: ب، ت، ز، ش، ق. | لزوم] + هذا: ب، ت، ز، ش، ق. 9 طرفي [طريق: ح، س، ف =
 طرق: د. | وهذا] هذا: ص. | المغالطات] ها*ز = المغالطات: ب، ت، د، ز، ش، ل، م. 10 وإذ] + قد:
 ب، فات «صح»، ز، فاش، ص، ق = واذا: س. | وفينا [وعدنا: ح، س، ف. | وعدنا] وعدنا: د. | بما وعدنا]
 بإيراد ما وعدنا من الكلام في المقدّمات الثلاث: ص. | كآبنا [الكآب: ل. | حامدين] غاف من «حامداً» =
 حامدا: س. | تعالى] -ب، -ت، -ز، -ش، -ق، -ل. | مصليّين] -ب، -ز، -ش، -ق = ومصليّين: ت، ص، ل. |
 نبيّه [نبيّنا: د، م. | وعلى آله] وآله: ل. | وأصحابه] وصحبه: ل = + ومسلمين تسليمًا: ت = + الطيّبين الطاهرين: د =
 + تمت بعون الله: س = + الطاهرين الأبرار: ص = + أجمعين وسلم تسليمًا: ل. | على نبيّه محمّد خير خلقه وعلى آله
 وأصحابه] له الحمد والشكر سرمدًا: ب، ز، ش، ق = ++ تمت: ز = ++ م: ش.

9 Colophons

ms Istanbul, Süleymaniye Kütüphanesi, Fatih 3217 (MS F)

وقع الفراغ من نسخته ظهره يوم الأحد سلخ شهر الله الأصب بتاريخ سنة ثمانى وسبعين وخمسمائة
الحمد لله حمداً كثيراً صاحبه وكتبه أبو الفضل بن الحسين الطبري رزقه الله علماً نافعاً وعملاً صالحاً
انتقل إلى سندنا الإمام الأجلّ الأفاضل عزّ الدين جمال الإسلام أبي اليقظان عمّار بن عمر بن الحسن
الآمدي أدام الله علوه بحكم الشرى الصحيح والحمد لله ربّ العالمين حمداً كثيراً

ms Cairo, Dār al-Kutub, Taymūr Manṭiq 148 (MS T)

علّقه لنفسه العبد الفقير إلى رحمة ربّه محمد بن موسى بن مفرّج الأندلسي ثمّ الحرّاني حامداً لله تعالى
ومصلياً على رسوله محمد وآله وأصحابه وأزواجه ومسلماً تسليماً ووافق الفراغ منه يوم الثلاثاء في العشر
الأخير من ربيع الآخر سنة ستّ وستّمائة بمدينة بغداد حرّسها الله تعالى وبلاد المسلمين بمّنه وكرمه
إنّه على كلّ شيء قدير وبالإجابة جدير قبل هذا الكتاب بأصل موثوق على حسب الطاقة والإمكان
فصحّ بتوفيق الله > وحسن معونته (?) < والحمد لله ربّ العالمين

ms Istanbul, Süleymaniye Kütüphanesi, Ayasofya 2483 (MS Ş)

نجز الكتاب بحمد الله ومنه غرة ربيع الأول سنة سبع عشرة وستّمائة

ms Istanbul, Süleymaniye Kütüphanesi, Laleli 2560 (MS L)

ووافق فراغ نسخ هذا الكتاب الشريف المعروف بكتاب المنطق بتمامه وكمله في يوم الأحد بين الصلاتين
الثامن عشر من شهر صفر بتاريخ سنة أربعين وستّمائة والحمد لله حمد الشاكرين ولا حول ولا قوة إلا
بالله العلي العظيم برسم المولى الفقيه الإمام الصدر الكبير المحترم عماد الدين وفقه الله توفيق العارفين

ms Istanbul, Topkapı Sarayı Müzesi Yazma Eser Kütüphanesi, Ahmet III 3438
(MS H)

الحمد لله على التمام ولسوله أفضل السلام وآله وأصحابه الكرام في أواخر المحرم الحرام من شهور عام
ستّ وثمانين وثمانمائة من الأعوام

ms Tehran, Dānishgāh-i Tihṙān, Kitābkhāna-yi Markazī 2755 (MS D)

الحمد لله الموفق المعين ربنا أتمم لنا نورنا ونور قلوبنا وشرح صدورنا وكنل عقولنا وزك نفوسنا وطهر بطوننا واغفر ذنوبنا وأصلح شؤوننا واشغلنا بك عن كل ما يشغله عنك من مراتب الدنيا ودرجات الآخرة يا رحمن الدنيا والآخرة ورحيمهما تعطي منهما ما تشاء وتمنع منهما ما تشاء أنت ولي في الدنيا والآخرة توفيني مسلماً موثقاً وألحقني بالصالحين وبعرفائك وأحبائك أجمعين بجودك وكرمك وإحسانك يا أحسن الخالقين لقد أمر بكاتبه هذا الكتاب المستطاب الذي صنفه الإمام الفاضل الكامل قاضي زين الدين عمر بن سهلان الساجي قدس الله سره أمير الأمراء العظام خان الخوانين الكرام زبدة المجاهدين في سبيل الإسلام صاحب الشوكة والحشمة والاحتشام حاوي قواعد الحكماء المتأهلين جامع قوانين العلماء الراشدين مؤسس أساس أساطين الحكم محيي علوم أفاضل العرب والعجم مبني بنيان العلم والجلود والكرم الأعلّم الأفضّل الأعظم الأكرم الزكي الذكي الأملعي الأنعم الذي كلّ عن صفاته السنية لساني وقصر عن نعوته الجميلة بياني وامتلأ من شراب محبته وعاء جناني وحيد في زمانه بل في أكثر الزمان وفريد في أوانه بل في كلّ الأوان عارج معارج التحقيق والعرفان شارب مشارب التدقيق والإيقان منبع الجود والخلق والإحسان معدن الفضل والكرم والامتنان مطلع كالات بني نوع الإنسان إنسان العين وعين الإنسان عاليجناب معلّى ألقاب رستم خان لا زالت أيام مجده وعلوه وإقباله وأوان عظمتة وفضله وإفضاله وأنا العبد الأثيم محمد رحيم وقع الفراغ في شهر جمادى الثاني سنة ١١١٠

MS Khenchara, Ordre Basilien Choueirite 320 (MS Sh)

وكان النجاز من هذا الكتاب في اليوم التاسع وعشر من شهر تشرين ثاني سنة مسيحية ١٧٣٩ وذلك بيد الحقير فيلبس بدير الرغم رحم الله تعالى كاتبه ومستكتبه آمين

MS Beirut, American University of Beirut Library 75 (MS B)

كان النجاز من نساخة هذا الكتاب في اليوم الثاني والعشرون من شهر أيلول لسنة ١٨٨١ بيد مالكة جبّور الخوري أبي سعد وذلك في السنة الأولى لوجودي بمدرسة اللاهوت الإنجيلية نقل هذا الكتاب عن نسخة منقولة عن أخرى حرّرت في آخرها هذا وكان النجاز من هذا الكتاب في اليوم التاسع عشر من شهر تشرين الثاني ١٧٣٩ وذلك بيد الحقير فيلبس بدير الرغم رحم الله كاتبه ثم هذا التنبيه اعلم أنّ قد قبل هذا المؤلف ثانية وبلغ مقدار الجهد والطاقة على أصله المنسوخ عنه وهو أصل مضبوط محرّك موثوق به وذلك بيدي أنا القسّ يواكيم وقد أصلحت ما وقع فيه من الغلط والتحريف سهواً من قلم الكاتب وكان ذلك في دير ماري أشعيا الروم ١٧٤٩

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Bibliography

- ‘Abd al-Karīm, Aḥmad ‘Izzat. *Ta’rīkh at-Ta’līm fī Miṣr: 1848–1882*. Vols. 1–3. Cairo: Dār al-Ma‘ārif, 1917.
- ‘Abd ar-Rāziq, Muṣṭafā. *Muḥammad ‘Abduh*. Cairo: Dār al-Ma‘ārif li-ṭ-Ṭibā’a wa-n-Nashr, December 1945.
- ‘Abduh, Muḥammad. *al-Ḥāshiyā ‘alā Sharḥ ad-Dawānī ‘alā al-Aqā’id al-Aḥudiyya*. Contained in Muḥammad ‘Abduh and ‘Abd al-Ḥakīm as-Siyāl-kūtī, [*Kitāb*] *Ḥāshiyatay ... as-Siyāl-kūtī wa- ... Muḥammad ‘Abduh ... ‘alā Sharḥ ... ad-Dawānī ‘alā al-Aqā’id al-Aḥudiyya*. Cairo: al-Maṭba’a al-Khayriyya, 1322–1323/1904–1905.
- ‘Abduh, Muḥammad. *Risāla at-Tawḥīd*. Cairo: al-Maṭba’a al-Amīriyya, 1315–1316/1897–1898.
- ‘Abduh, Muḥammad. [*at-Ta’līqāt ‘alā*] *Kitāb al-Baṣā’ir an-Naṣīriyya fī Ilm al-Manṭiq taṣ-nīf ash-Shaykh al-Imām al-Qāḍī az-Zāhid Zayn ad-Dīn ‘Umar ibn Sahlān as-Sāwī*. Cairo: al-Maṭba’a al-Amīriyya, 1316–1317/1898–1900.

- Afghānī, Jamāl ad-Dīn al-. *Risāla fī Ibtāl Madhhab ad-Dahriyyīn*. Trans. 'Abduh, Muḥammad with the assistance of 'Ārif Afandī Abū Turāb. Beirut: n.p., 1303 (1885–1886).
- Ahmed, Asad Q. *Palimpsests of Themselves: Logic and Commentary in Postclassical Muslim South Asia*. Berkeley: University of California Press, 2022.
- Albin, Michael. "Sarkīs, Y.I." In *Encyclopedia of Library and Information Science*, 39, suppl. 4: 394–396. Edited by Allen Kent, Harold Lancour, and Jay E. Daily. New York: Marcel Dekker, 1985.
- American Board of Commissioners for Foreign Missions. "Syria Mission." *The Missionary Herald*, 66, no. 4 (1870): 159–162.
- Aouad, Maroun, and Hamidē Fadlallah. "Philosophies chrétiens de langue arabe aux XVII^e–XVIII^e siècles en Syrie et au Liban." *Parole de l'Orient* 34 (2009): 443–468.
- Aouad, Maroun, Philippe Roisse, Emma Gannagé, and Hamidē Fadlallah. "Les manuscrits de philosophie en langue arabe conservés dans les bibliothèques du Liban. Protocole. Catalogue raisonné des manuscrits de philosophie en langue arabe de la Bibliothèque Saint-Paul de Harissa." *Mélanges de l'Université Saint-Joseph* 61 (2008): 193–341.
- Aswad, Ibrāhīm Bak al-. *Tanwīr al-Adhḥān fī Tārīkh Lubnān*. Vols. 1–2. Beirut: Maṭba'at al-Qiddīs Jāwurjīyūs, 1925.
- Bayhaqī, 'Alī ibn Zayd al-. *Tatimmat Ṣiwān al-Ḥikma*. Ed. by Muḥammad Shafī'. Lahore: Panjab University Publications, 1351/1935.
- Bacel, Paul. "Abdallah Zakher. Ses premiers travaux (1680–1722)." *Échos d'Orient* 11, no. 71 (1908): 218–226.
- Bacel, Paul. "Abdallah Zakher et son imprimerie arabe." *Échos d'Orient* 11, no. 72 (1908): 281–287.
- Bacel, Paul. "Dernières années d'Abdallah Zakher." *Échos d'Orient* 11, no. 73 (1908): 363–372.
- Badawī, 'Abd ar-Raḥmān. *Sīrat Ḥayātī*. Vol. 1. Beirut: al-Mu'assasa al-'Arabiyya li-d-Dirāsāt wa-n-Nashr, 2020.
- Bonmariage, Cécile. "Ottoman Manuscripts Owners of the 12th–18th c.—Abū Bakr b. Rustam al-Shirwānī," 2016. <https://hdl.handle.net/2078.1/180386>.
- Bustānī, Buṭrus al-. *A'māl al-Jam'īyya as-Sūriyya*. Beirut: n.p., 1853.
- Cheikho, Louis. "Tārīkh Fann at-Ṭibā'a fī l-Mashriq." *Al-Machriq* 4, no. 10 (1901): 471–475.
- Cheikho, Louis. "Tārīkh Fann at-Ṭibā'a fī l-Mashriq." *Al-Machriq* 4, no. 11 (1901): 520–524.
- Dāghir, Yūsuf. *Maṣādir ad-Dirāsāt al-Adabiyya*. Vol. 3, part 2. Beirut: American University of Beirut, 1972.
- Ṭarrāzī, Filīb Dī. *Tārīkh aṣ-Ṣaḥāfa al-'Arabiyya*. Vols. 1–2. Beirut: al-Maṭba'a al-Adabiyya, 1913.
- Edwards, Anthony. "Serializing Protestantism: The Missionary Miscellany and the Arabic Press in 1850s Beirut." *British Journal of Middle Eastern Studies* 49, no. 1 (2022): 86–103.

- El-Rouayheb, Khaled. "The Transformation of Eastern Arabic Logic in the Fourteenth and Fifteenth Centuries." In *In the House of Understanding: Histories in Memory of Kamal S. Salibi*. Ed. by Abdul Rahim Abu Husayn, Tarif Khalidi and Suleiman A. Mourad. Beirut: American University of Beirut Press, 2017: 389–404.
- El-Rouayheb, Khaled. *The Development of Arabic Logic (1200–1900)*. Basel: Schwabe, 2019.
- El Shamsy, Ahmed. *Rediscovering the Islamic Classics: How Editors and Print Culture Transformed an Intellectual Tradition*. Princeton: Princeton University Press, 2022.
- Eshera, Osama. "The Composition and Transmission of Avicenna's *Najāt, Ilāhiyyāt* and *al-Mabda' wa-l-ma'ād*: Critical Edition." Ph.D. diss., McGill University, 2022.
- Griffel, Frank. *The Formation of Post-Classical Philosophy in Islam*. New York: Oxford University Press, 2021.
- Griffel, Frank. "Umar b. Sahlān al-Sāwī (d. after 536/1141)." In *Philosophy in the Islamic World*. Vol. 2/1: 11th–12th Centuries: Central and Eastern Regions. Ed. by Ulrich Rudolph and Peter Adamson. Leiden: Brill, 2023: 463–472.
- Ghannām, Riyāq Ḥusayn. *Lamaḥāt min al-Ḥayāt al-Āmma fī Mutaṣarrifiyya Jabal Lubnān min khilālī Mudhakkirāt Jirjis Ṣafā Ni'ma*. Beirut: Dār Ma'n, 2013.
- Glutz von Blotzheim, Sophie. "Traité ingénieux sur les principes de la logique." *Parole de l'Orient* 34 (2009): 469–479.
- Hamadhānī, Abū al-Faḍl Badī' az-Zamān al-. *Maqāmāt Abī al-Faḍl Badī' az-Zamān al-Hamadhānī*. Ed. and comm. by Muḥammad 'Abduh al-Miṣrī. Beirut: al-Maṭba'a al-Kāthūlīkiyya li-l-Ābā' al-Yasū'iyyīn, 1889.
- Hanssen, Jens. *Fin de Siècle Beirut: The Making of an Ottoman Provincial Capital*. Oxford: Clarendon Press, 2005.
- Heyworth-Dunne, James. *An Introduction to the History of Education in Modern Egypt*. London: Luzac, 1939.
- Holliday, William A. *Historical Sketch of the Missions in Syria, Under the Care of the Board of Foreign Missions of The Presbyterian Church*. Philadelphia: Woman's Foreign Missionary Society of the Presbyterian Church, 1881.
- Ibn Khaldūn. *Kitāb al-Ibar*. Ed. by Yūsuf Dāghir. Beirut: Dār al-Kitāb al-Lubnānī, 1961.
- Jurjānī, 'Abd al-Qāhir al-. *Asrār al-Balāgha fī 'Ilm al-Bayān*. Ed. by Muḥammad Rashīd Riḍā. Cairo: Maṭba'at at-Taraqī, 1319–1320/1901–1902.
- Lang, D.M. "Georgia and the Fall of the Ṣafavī Dynasty." *Bulletin of the School of Oriental and African Studies, University of London* 14, no. 3 (1952): 523–539.
- Meyerhof, Max. "Alī al-Bayhaqī's Tatimmat Ṣiwān al-Ḥikma: A biographical work on learned men of the Islam [sic]." *Osiris* 8 (1948): 122–217.
- Morel, Teymour. "Buṭrus al-Tūlāwī (1657–1746). Présentation de son oeuvre philosophique: Édition critique et traduction commentée des deux premiers examens (*baḥṭ-s*) du *Livre de la Logique (al-Manṭiq)*." Ph.D. diss., University of Geneva, 2018. doi: 10.13097/archive-ouverte/unige:107039

- Morel, Teymour. "La diffusion d'un ouvrage de logique arabe de la fin du xvii^e siècle: La *Logique* (al-*Manṭiq*) de Buṭrus al-Tūlāwī." *Journal of Islamic Manuscripts* 9 (2018), 242–263.
- Morel, Teymour. "Lorsque Aḥmad Fāris al-Šidyāq copiait un traité de logique arabe chrétien." *Mélanges de l'Université Saint-Joseph* 67 (2017–2018): 533–536.
- Morel, Teymour and Maroun Aouad. "Les manuscrits de l'œuvre philosophique de Buṭrus al-Tūlāwī (1657–1746): Éléments anciens et nouveaux." In *Les Maronites aux temps des croisements culturels (xvi^e–xix^e siècle)*, Actes du 2^e colloque du CEDRAC Zouk Mikā'el (Liban), 6–7 décembre 2010. Ed. by Ronney El Gemayel. 163–207. Cordoba: Cordoba University Press, 2016.
- Murtaḍā, as-Sayyid al-. *Kitāb Nahj al-Balāgha wa-Huwa Mā Jama'ahu as-Sayyid al-Murtaḍā min Kalām Sayyidinā Amīr al-Mu'minīn 'Alī ibn Abī Ṭālib Karrama Allāhu Wajhahu*. Ed. and comm. by Muḥammad 'Abduh al-Miṣrī. Beirut: al-Maṭba'a al-Adabiyya, 1885.
- Nijland, C., and A.G. Karam. "al-Ma'lūf." In *Encyclopaedia of Islam, Second Edition*. Vol. 6. Ed. by C.E. Bosworth, E. van Donzel, B. Lewis and Ch. Pellat. Leiden: Brill, 1991.
- Qazwīnī, Muḥammad ibn 'Abd ar-Raḥmān al-. *At-Talkhīṣ fī 'Ulūm al-Balāgha*. Ed. and comm. by 'Abd ar-Raḥmān al-Barqūqī. Cairo: Dār al-Fikr al-'Arabī, n.d.
- Rāzī, Fakhr ad-Dīn ar-. *Sharḥ al-Ishārāt*. Ed. 'Alī Riḍā Najaf-zāda. Tehran: Anjuman-i Āthār wa-Mafākhir-i Farhangī, 1384 [Sh.]/2005.
- Rihani, Ameen Albert. *Boutros AL-TOULĀWY (Pietro Oliva Tulense). A Lebanese Philosopher from the 17th Century: Isagoge or Introduction to Logic. A Manuscript from 1688*. Zouk Mosbeh: Notre Dame University Press, 2001.
- Riḍā, Rashīd. "Muṣāb al-Islam bi-Mawt al-Ustādh al-Imām." *al-Manār* 8 (1323/1905): 375–400.
- Roemer, H.R. "The Safavid Period." In *The Cambridge History of Iran*. Vol. 6. Ed. by Peter Jackson and Lawrence Lockhart. 189–350. Cambridge: Cambridge University Press, 1986.
- Robinson, Francis. "Ottomans-Safavids-Mughals: Shared knowledge and connective systems." *Journal of Islamic Studies* 8/2 (1997): 151–184.
- Şafā, Jirjis. "Ta'rīf ba'ḍ Makhtūṭāt Maktabatī." *Al-Machriq* 16, no. 6 (1913): 435–446.
- "Safeguarding the Issa Iskandar Al Maa'luf Manuscript Collection (EAP1423)." Endangered Archives Programme. British Library, July 8, 2021. <http://eap.bl.uk/project/eap1423>.
- Sarkis, Joseph Elian. *Mu'jam al-Maṭbū'āt al-'Arabiyya wa-l-Mu'arraba*. Cairo: Librarie J.E. Sarkis et Fils, 1928.
- Sāwī, 'Umar ibn Sahlān as-. *al-Baṣā'ir an-Naṣīriyya fī 'Ilm al-Manṭiq*. Baabda: al-Maṭba'a al-'Uthmāniyya, 1891.
- Sāwī, 'Umar ibn Sahlān as-. *al-Baṣā'ir an-Naṣīriyya fī 'Ilm al-Manṭiq*. Comm. by Muḥammad 'Abduh. Corrected by Maḥmūd Muṣṭafā. Cairo: al-Maṭba'a al-Amīriyya, 1316–1317/1898–1900.

- Sāwī, 'Umar ibn Sahlān as-. *al-Baṣā'ir an-Naṣīriyya fī 'Ilm al-Manṭiq*. Comm. by Muḥammad 'Abduh. Corrected by 'Abd Allāh Ismā'īl as-Ṣāwī and 'Abd al-Ḥafiz Sa'd 'Aṭīyya. Cairo: Maṭba'at as-Ṣāwī, n.d.
- Sāwī, 'Umar ibn Sahlān as-. *al-Baṣā'ir an-Naṣīriyya fī 'Ilm al-Manṭiq*. Comm. by Muḥammad 'Abduh. Corrected by Rafīq al-'Ajam. Beirut: Dār al-Fikr al-Lubnānī, 1993.
- Sāwī, 'Umar ibn Sahlān as-. *al-Baṣā'ir an-Naṣīriyya fī 'Ilm al-Manṭiq*. Comm. by Muḥammad 'Abduh. Corrected by Ḥasan Ghaffārpūr Marāghī. Tehran: as-Ṣādiq, 2011.
- Sayyid, Ayman Fu'ād. *Dār al-Kutub al-Miṣriyya: Tārīkhuhā wa-Taṭawwuruhā*. Cairo: ad-Dār al-'Arabiyya, 1996.
- Sezgin, Fuat. "Kitāb Dalā'il al-qibla li-Ibn al-Qāṣṣ (Das Buch über die Orientierung nach Mekka von Ibn al-Qāṣṣ)." *Zeitschrift für Geschichte der arabisch-islamischen Wissenschaften* 4 (1988): 7–91.
- Shihadeh, Ayman. "Fakhr al-Dīn al-Rāzī's Response to Sharaf al-Dīn al-Mas'ūdī's Critical Commentary on Avicenna's *Ishārāt*." *The Muslim World* 104 (2014): 1–61.
- Street, Tony. "Arabic logic." In *Handbook of the History of Logic* (Vol. 1). Ed. by Dov M. Gabbay and John Woods. Amsterdam: Elsevier, 2004: 523–596.
- Street, Tony. "Logic." In *The Cambridge Companion to Arabic Philosophy*. Ed. by Peter Adamson and Richard Taylor. Cambridge: Cambridge University Press, 2005: 247–265.
- Ṭanāḥī, Maḥmūd Muḥammad aṭ. *al-Kitāb al-Maṭbū' bi- Miṣr fī l-Qarn at-Tāsī' 'Ashar*. Cairo: Dār al-Hilāl, 1996.
- Ṭūsī, Naṣīr ad-Dīn aṭ-. *Ḥall Mushkilāt al-Ishārāt*. Ed. by Sulaymān Dunyā (as *al-Ishārāt wa-t-Tanbihāt li-Abī 'Alī Ibn Sīnā, ma'a Sharḥ Naṣīr ad-Dīn aṭ-Ṭūsī*). Cairo: Dār al-Ma'ārif, 1960.
- Wisnovsky, Robert. "New materials for the study of 'Abduh's Avicennism." In *How Far Has It Gone? Muhammad Abduh and His Programme of Islamic Reform*. Ed. by Walid Ghali. Berlin: Gerlach Press, forthcoming.
- Zaydān, Jurjī. *Tārīkh Ādāb al-Lughā al-'Arabiyya*. Vol. 4. Cairo: Maṭba'at al-Hilāl, 1914.
- Ziai, Hossein. "Ebn Sahlān Sāvājī, Qāzī Zayn-al-dīn 'Omar." In *Encyclopaedia Iranica*, Vol. VIII, Fasc. 1. New York: Encyclopaedia Iranica Foundation, 1997, 52–53.
- Ziriklī, Khayr ad-Dīn az-. *al-A'lām*. Vol. 2. Cairo: n.p., 1959.
- Ziyāda, Niqūlā. (Ziadeh, Nicola.) *A'lām 'Arab Muḥdathūn*. Beirut: al-Ahliyya li-n-Nashr wa-t-Tawzī', 1994.

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