

The Proposition and Its Parts

Aristotelian and Avicennan logic has a good deal to say about individual sentences. Or rather, in technical parlance, about the “proposition (*qadīyya*).” This is a topic that receives extensive attention in post-Avicennan philosophy.¹ And for good reason, since the proposition is both the building block of the syllogistic argument, as it can serve as the premiss of an argument [T2], and the bearer of truth or falsehood. “Truth-aptness” is indeed key to Avicenna’s definition of the proposition as “that whose utterer is said to be speaking truly or falsely” [T4]. This would apply to hypothetical propositions (e.g. “if the sun has risen it is day”) as well as categorical ones, where one term is simply predicated of another (e.g. “human is animal”). This same idea is expressed by saying that the proposition is a “statement (*qawl*)” that is “declarative (*jāzim*)” [T1, T9] or “assertive (*khabarī*),” that is, makes a “report (*khabar*)” about something.

Already we run into a problem here, which was articulated by Fakhr al-Dīn al-Rāzī. He argues that any attempt to define “proposition” will be circular. For example, if we define it as a statement that can be true or false, and then define truth and falsehood by appealing to the notion of a proposition that does or does not correspond to reality [T14]. He simply bites the bullet here, admitting that “assertion” and its synonyms, like “judgment (*ḥukm*),” are indeed indefinable. But this is unproblematic since we know immediately what a proposition is, and giving a definition would be superfluous anyway. This fits with his reservations about the whole endeavor of offering definitions, which are covered elsewhere in this volume.² Al-Kātibī disagrees, to some extent: one might define proposition in terms of truth and falsehood without needing to define truth and falsehood at all. But he winds up accepting that the definition of “assertion” is a nominal one, and not an articulation of a true nature or essence [T28]. Al-Ḥillī similarly admits that “proposition” is indefinable but adds that even if

1 And not only in our period; for later discussions see A.Q. Ahmed, “Interpreting Avicenna: Urmawī/Taḥṭānī and the Later Logical Tradition on Propositions,” *Documenti e studi sulla tradizione filosofica medievale* 21 (2010), 313–342; A.Q. Ahmed, “Systematic Growth in Sustained Error: A Case Study in The Dynamism of Post-Classical Islamic Scholasticism,” in A.Q. Ahmed, M. Bonner, and B. Sadeghi (eds.), *The Islamic Scholarly Tradition: Studies in History, Law, and Thought in Honor of Professor Michael Allan Cook* (Leiden: 2011), 343–378.

2 See our chapter Criticism of Definitions and Meno’s Paradox.

you don't need a true definition of something, you might still be in danger of confusing it with other items. The nominal definition would enable us to avoid that [T36].

Given then that a proposition is a truth-apt statement, how do we go about producing such a statement? As Avicenna says, it is not enough simply to juxtapose terms, like by saying or thinking "human animal" [T1]. Rather there needs to be a third item in addition to the two terms, which links them. This was known in Latin medieval parlance as the *copula*, a word that has passed into English logical terminology. Philosophical interest in the copula seems to have increased over time in the post-Avicennan period. Al-Khūnājī was the first to devote a separate chapter to it, but already earlier thinkers like al-Sāwī and al-Rāzī had much to say on the subject. Notably, al-Rāzī offers a kind of "hylomorphic" account of the unity of the proposition, according to which the copula adds the "form" of the aforementioned predicative relations to the two terms, which are like the "matter" [T15].³

In Arabic the word for copula is *rābiṭa*, meaning "bond" or "connection." It is used to refer to the linguistic item (like "is" in English, and e.g. *yūjadu* or *huwa* in Arabic) by which it is indicated that the predicate is said to hold of the subject. We also find the word *nisba*, which we mostly translate in this chapter as "nexus" to mark it as a technical term. It is standardly used to refer to the link between subject and predicate signified by the copula. But *nisba* is also one of the standard words in Arabic for "relation," so when you read our texts speaking of a "nexus" between two terms, you should bear in mind that they are also saying there is a relation between them. This observation helps to explain why it was seen as plausible to suppose that the copula stands for not one, but two "nexus" in each predication: the "relation" (*nisba*) of human to animal is not the same as the "relation" of animal to human. [T15]. Modal considerations help to illustrate this idea: human is *necessarily* animal, but animal is only *possibly* human [T15, T35, T37]. This shows that the two relations are distinct.

After presenting this idea as he finds it in al-Rāzī [T29], al-Kātibī raises a doubt against it: in general "X is Y" just means that everything true of X is also true of Y [T30]. Since this is a symmetrical relation, the nexus would not be double. So al-Kātibī seems to be suggesting that the copulative relation is like

3 For hylomorphic analysis in the Aristotelian tradition, especially medieval Latin logic, see C. Dutilh Novaes, "The Different Ways in which Logic is (Said to Be) Formal," *History and Philosophy of Logic* 32 (2011), 303–332; "Form and Matter in Later Latin Medieval Logic: the Cases of *Suppositio* and *Consequentia*," *Journal of the History of Philosophy* 50 (2012), 339–364; "Reassessing Logical Hylomorphism and the Demarcation of Logical Constants," *Synthese* 185 (2012), 387–410.

the relation “equal to,” whereas al-Rāzī sees the copula as masking two relations along the lines “child of” and “father of.” This turns out not to be al-Kātibī’s considered view, though. Al-Rāzī had also noted that only one of the two relations is really constitutive of (“essential for”) the proposition, because what makes a statement a proposition is the subject’s receiving the predicate, not the other way around. Al-Kātibī rejects this, but not by questioning the duality of the nexus; instead, he says it could more reasonably be the relation of predicate to subject that is constitutive [T31]. Then, when al-Kātibī comes to give us his own opinion, he accepts a kind of duality for the nexus after all. Denying this would, he says, abolish any distinction between the subject role and the predicate role [T32]. Still, each relation is “potentially” the other, meaning simply that the terms can be swapped so that subject becomes predicate and vice-versa (“animal is human” instead of “human is animal”). A modification of this view can be found in al-Urmawī [T35], who says that the copula typically signifies two asymmetrical relations, but it depends on the example we choose. The copulative relation is symmetrical in concrete cases (“this X is this Y”), which seem to be statements of identity rather than predication proper.⁴

The upshot, at any rate, is that on the level of language categorical propositions need not just two terms but also a copula. This means that on the level of meaning a proposition has at least three parts: that for which the subject stands, that for which the predicate stands, and the “relation” between them [T1, T5, T33]. Sadly though, things are not so simple. Unlike English, Arabic allows for truth-apt sentences that have no explicit copula, like *Zayd kātib* which only includes two terms, “Zayd” and “writer,” but *means* “Zayd is a writer” [T6]. Beginning with Avicenna, our authors are aware that this is not true of all languages.⁵ They refer to Greek and Persian as examples of languages that work differently [T4, T13, T33, T36, T37]. In particular, Persian is like English in that there

4 Albeit that the relationship between identity and predication is itself a contested one. See our chapter in this volume on Predication.

5 Al-Fārābī was also acutely aware that Arabic lacked a copula. He thought that this was a defect of the Arabic language and proposed using “*mawjūd*” as an artificial copula. He was also crucial in developing the theory of derived nouns as containing the signification of the nexus, and he has produced a sophisticated theory in which the copula *mawjūd* in one of its senses has no reference, but signifies a secondary intelligible, namely the predicative relation. See especially Abū Naṣr al-Fārābī, *Kitāb al-Ḥurūf*, ed. M. Mahdi (Beirut: 1970), 110–128, and S. Menn, “al-Fārābī’s *Kitāb al-ḥurūf* and His Analysis of the Senses of Being,” *Arabic Sciences and Philosophy*, 18 (2008), 59–97, especially page 82. It appears, however, that much of Fārābī’s theory from the *Kitāb al-Ḥurūf* and from his commentary on the *De interpretatione* was ignored by the later tradition. For a study of discussions on the semantic role of the copula in the Arabic tradition, see D. Klinger, *Being Another Way. The Copula and Arabic Philosophy of Language*, 900–1500 (Oakland: 2024).

must be a copula. It may seem odd to English speakers that the early Arabic philosophers—for lack of an equivalent to the Greek word *esti*—stipulated that the role of the copula can be played by a pronoun. Thus if one wants to make the copula explicit in the above example, one could say *Zayd huwa kātib*, very literally “Zayd he writer” but with the same meaning, “Zayd is a writer.” Less odd would be the fact that the copula can be “hidden in a verb,” as when one says “Zayd writes.” Here the copula is in some sense implicit (as if one took “writes” to mean “*is* writing” or “*is* a writer”). This might help to explain why the copula also fails to appear in a sentence like the one just considered, where we had the derived noun “writer (*kātib*)” in the predicate slot. The situation here is just like case with a verb, as explained at [T7] and [T18], with commentary on the latter passage at [T21].

The standard view of the parts of the proposition, then, is that strictly speaking it should have the three aforementioned parts and thus be “ternary.” When one does leave the copula implicit, the proposition is “binary,” because it has only two explicitly expressed parts, namely the two terms [T1, T6, T7, T13, T33, T34, T37]. But al-Rāzī raises a concern here. In cases where the copula is implicitly present, namely where the predicates are verbs or derived nouns, won’t it be redundant to make the copula explicit? For instance if *Zayd kātib* already means “Zayd: he is a writer,” then you’d think that *Zayd huwa kātib* would have to mean “Zayd: he is a writer, he is” [T16]. Thus one should *only* introduce the copula explicitly when the predicate is genuinely incomplete, like *Zayd insān* (“Zayd [is a] human”). Al-Khūnajī rebuts this by distinguishing between the two roles that can be played by the Arabic pronoun. The concealed pronoun in *kātib* will not be a copula if there already is an explicit *huwa* to play that role [T17], reprised by al-Urmawī at [T34]. Arabic usage in the Qur’ān confirms that this is acceptable.

Nor are we at an end with the question of how many parts belong to the proposition. With the copula we’ve just seen that a part could appear only implicitly, but sometimes be made explicit. Again it is al-Rāzī who makes trouble by asking whether there is in fact a *fourth* part which is always at least implicitly present, namely the modal operator [T16].⁶ When we say “human is animal” this is a necessary truth, so “necessarily” is tacitly present; and likewise for a contingent proposition. Al-Ḥillī accepts this, contrasting the modal operator with quantifiers like “all” or “some,” which are *not* tacitly present and so need

6 Some later logicians would—similar to the modern distinction between judgeable content and the judgment itself—distinguish between the nexus of a proposition and its judgment, making the parts of the proposition four. See K. El-Rouayheb, ‘Does a Proposition Have Three Parts or Four? A Debate in Later Arabic Logic,’ *Oriens* 44 (2016), 301–331.

to be explicitly introduced [T37]. While some features of propositions may not be conspicuously expressed on the level of language, in linguistic propositions words may occur that are not integral to the predicative relation expressed in them. For example, al-Suhrawardī mentions a class of items that would be called “syncategorematic” in Latin medieval logic, like *innamā* (“nothing but”). These are added as auxiliaries to the basic proposition and are thus its “concomitants” [T12].

Finally let us turn to a set of issues concerning negation.⁷ Denials are seen as in some sense parasitic on affirmations, as they are formed by adding a negative particle to affirmations. Abū al-Barakāt goes so far as to say that this means negations are only “metaphorically” predications [T10]. A complication is that there are two ways of forming negative propositions. In one case we negate the copula (“not: Socrates is a horse”) in another, the predicate (“Socrates is a non-horse”). The latter is called a “metathetic (*ma’dūla*)” proposition, among other things [T4, T11]. Since these two kinds of negation are easily confused our authors take pains to explain the difference in negational scope, which is not merely formal. For instance metathesis may have a more general meaning [T8], because negating the copula (“Zayd is not just”) suggests that the predicate does not belong to the subject at all, whereas asserting a negative predicate (“Zayd is non-just”) could be true in cases where the predicate does belong to the subject, but imperfectly (e.g. if Zayd is somewhere on the spectrum between perfect justice and utter injustice).

Things get really interesting with negation when we come to al-Abharī’s discussion at [T19]. He proposes that the subject of a true proposition could be something impossible, giving the example “Whatever is a human and not an animal is a human.” This is a pretty strange thing to say, obviously, but it does look true: whatever else we say about a human that is not an animal, surely it is at least a human. To this one might be tempted to object that no such thing exists, so there are no true propositions about it. But Avicenna had provided for propositions about subjects that exist only in the mind [T3]. If one can entertain the notion of a human who is not an animal, shouldn’t one be able to assent to propositions about it? But as al-Abharī himself warns, this line of thought could lead to highly counterintuitive and undesirable consequences [T19]. “No human is a stone” looks true, but turns out not to be, because there is the following true proposition about an impossible object: “The human who is also a stone is a stone.” Of course the problem only arises for mental, not

7 For the topic in Avicenna see J. Kaukua, “Avicenna on Negative Judgment,” *Topoi* 39 (2020), 657–666.

extramental subjects, so one would be on safe ground saying “No extramentally existent human is a stone” [T20]. But still!

Solving this problem means digging further into the referent of the subject term. Al-Abharī says at the start of [T19], just before raising the prospect of impossible subjects, that we might form propositions concerning three types of subject: those that extramentally exist, those in the mind, and then subjects “in the true sense,” meaning subjects taken with reference to the essence alone, paying no heed to existence at all. Al-Ṭūsī offers an elaborate set of reflections on this [T22, T23, T24, T25, T26, T27]. The key move is best explained at [T25]: most scholars have rejected impossible subjects because they cannot be subjects of a true absolute proposition, an absolute proposition being like al-Abharī’s “true sense”: we look only to the meaning of the term and not to its existence, whether mental or extramental. At this fundamental level we can already rule out affirmative truths concerning humans that are stones and the like. Al-Ṭūsī also considers the case of extramentally non-existing (but possible) objects. He says that metathesis (“Zayd is non-just”) is false for the extramentally non-existent, because here one is affirming a predicate of a subject, even though the predicate has negative meaning—and one cannot affirm anything of the non-existent. By contrast “simple negation” is allowed for the non-existent: one can say “not: Zayd is just” and this will be true if Zayd does not exist.

Texts from: Avicenna, Bahmanyār, al-Sāwī, Abū al-Barakāt, al-Suhrawardī, Fakhr al-Dīn al-Rāzī, al-Khūnajī, al-Abharī, al-Ṭūsī, al-Kātibī, al-Urmawī, al-Ḥillī

[T1] Avicenna, *Shifāʾ*, *Manṭiq*, *Ibāra*, 37.6–38.11

[*the proposition and the copula*]

Every declarative statement, be it categorical or hypothetical, requires, in the language of the Greeks, the use of hyparctic verbs (*al-kalimāt al-wujudiyya*); these are the verbs which signify a nexus (*nisba*) and a time, without however the meaning connected to the indeterminate subject actually obtaining in them, if the root in itself is not a verb.

This remains the case for hypothetical statements in the Arabic language: in connective statements we say “if it is (*kāna*),” “whenever it is,” “so long as it is,” and “even if it is.” Or in non-connective ones, “either it is (*yakūnu*) like this, or it is like that.” We always have to use the hyparctic verb [i.e. *kāna* or *yakūnu*] in both cases.

In the language of the Greeks, this was also the case for categorical statements: they had to say “Zayd was X” or “Zayd is Y.” But this is not necessary in the language of the Arabs. With regard to the matter itself, though, the categorical proposition must be completed by three things. These are: [38] the meaning of the subject, the meaning of the predicate, and a nexus between the two. [Mere] juxtaposition of the two meanings in the mind does not make them a subject and a predicate in [the mind]; rather the mind needs to believe that there is, along with that, a nexus (whether affirmative or negative) between the two meanings.

If I want it to capture what is in the mind, the utterance too needs to involve three significations: the signification of the meaning belonging to the subject, another of the meaning belonging to the predicate, and a third for the relation and the bond (*irtibāt*) between them. Just juxtaposing “human” and “animal” in the mind and considering both, insofar as this is human and that is animal, does not render either one to be a predicate or subject. [...]

In the case [where the copula is omitted], one may still signify this meaning through spoken signification, even if there was no simple utterance dedicated just to this.

[T2] Avicenna, *Shifāʾ, Manṭiq, Qiyās*, 19.4–11

[*the proposition as a premise*]

We should explain what is a “premise,” what is called a “term (*ḥadd*)” of a premise, and what is said of the whole, whether affirmatively or negatively, and of the part. Also, what a syllogism is, and which of these are complete and incomplete. After that, we will begin to distinguish the kinds of syllogisms and learn what notions attach to them.

That thing which was called a declarative statement and a proposition in *On Interpretation* becomes, once it is made part of a syllogism, a premise. The premise is thus a declarative statement that has been made part of a syllogism. But this is not a specific difference that is a concomitant of the premise; rather, it is an accidental notion, so that if we imagine a premise by itself, it ceases to be part of a syllogism, without its essence having to perish, and while remaining a declarative statement.

[T3] Avicenna, *Shifāʾ, Mantīq, Qiyās*, 19.16–21.12

[*the quantified premise and the extension of the subject term*]

Just as propositions are quantified, unquantified, and particular, so are premises. We ought to verify [20] the state of the quantified [premise]: we ought to verify first the quantified premise that is a universal affirmation, like “Every A is B,” and say: we must first learn the meaning of “every such-and-such is so-and-so”. [The meaning of such phrases] is that each and every instance [of such-and-such] is [so-and-so]—and not the whole totality together, nor the universal, but rather every single one of its instances (*afrād*) so that not one thing is left out. The judgment is not about the totality, but about the instances. For [something] may be said about the totality that is not said about the instances. The judgment is not about the universal “human” insofar as it is a universal; it must be a judgment of the particulars, as you have learned above. And that judgment is about every single one of the individual particulars, or of the individuals and species together, if the meaning is a genus.

Next, we ought to learn that when we say “every single one of the such-and-such,” this does not mean every single one of what is such-and-such *inasmuch* as it is such-and-such. Like when we say, “every white [thing],” what is meant is not simply every single white thing *inasmuch* as it is white, but just whatever is described as white, and whatever is said to be white, regardless whether that thing is whiteness itself as such, or just something that is described as white but whose true nature is something else, like a human, or a log, that is described as white.

[*subject terms refer to what is actual, but the “actual” may be in the mind*]

Also we ought to learn that the meaning of “every white [thing]” is not everything that is described as *always* being white. For “every white [thing]” is more general than “every [thing that is] always white,” and “white” is more general than “white at some time” or “always white.” “Every white [thing],” then, means every single thing [21] that is described as being white, whether always or not always, be it a subject for the whiteness by which it is described, or be it whiteness itself. And this attribute is not merely one of possibility or aptitude [to be white]. “Every white [thing]” is definitely not to be understood as everything that is apt to be white, but as everything that is actually described as being white, whether at some time (be this time specified or unspecified), or always, once it is actually so. But this actuality is not only existence in concrete reality, for the subject is sometimes not considered *inasmuch* as it is existent in concrete reality, like when you say “every sphere comprises twenty triangular

bases,” the attribute is not [said] of something that exists [concretely], but of something insofar as it is understood as being actually described by that attribute. The intellect describes it as being so-and-so in its actual existence, regardless of whether the thing exists [concretely] or not. So when you say “every white [thing],” what is meant by this is: every single thing which is described by the intellect as being white—if its existence were made actual—either always, or at some time, whichever it may be. So much for the side of the subject [term].

[T4] Avicenna, *Ishārāt*, 71.3–78.3 [trans. Inati, mod.]

[the types of compositions that yield assertion]

This type of composition which we have determined to mention [next] is the one that yields an assertion (*al-tarkīb al-khabarī*). It is that whose utterer is said to be speaking truly or falsely. [...]

[71.9] The types of composition that yield an assertion are three. (a) *First*, that which is called “categorical.” In this type, a judgment is made that one idea (*maʿnā*) is predicated of another, or that it is not. Examples of this are “human is animal” and “human [72] is not animal.” “Human,” and whatever plays the role it does in this sort of example, is called the “subject”; what plays the role of “animal” here is what is called the “predicate.” As for “not (*laysa*),” it is a negative particle. The (b) *second* and (c) *third* types are called “hypothetical.” A hypothetical proposition is made up of two assertions, each of which has been brought out of its assertive state to another [state]. The two are then joined, not in such a manner that it could be said that one is the other, as in predictive propositions, but either (b) in such a manner that it may be said that one implies the other, or follows from the other—this is called the “connective” or the “assumptive” [hypothetical]—or (c) in such a manner that one is in opposition with and separate from the other—and this is then called the “disjunctive” [hypothetical]. [...]

[types of affirmation and negation]

[72.17] A categorical affirmation is for instance “human is animal”. The meaning of this is that the thing which [73] we suppose in the mind to be a human, whether it exists concretely or not, we must also suppose to be an animal. And we judge it to be an animal without adding “when” or “in which state,” but in accordance with that which is common to the temporal, the restricted, and their opposites. An example of a categorical negation is the statement “human is not stone.” The situation here is just like [the affirmation].

The connective affirmation is something like “if the sun is up, then it is day.” This is to say that if the first of the two [assertions], i.e., that to which the conditional particle is linked and which is called the antecedent, is assumed to be realized, then the second [assertion], to which the particle introducing the final clause is linked, and which is called the consequent, necessarily follows it or accompanies it without the addition of anything further. The connective negation is that which negates this necessary consequence or accompaniment. An example of this is the statement “it is not the case that if the sun is up, then it is night.”

The disjunctive affirmation is exemplified by the statement “either this number is even, or it is odd.” It is that which necessitates disjunction and opposition. The disjunctive negation is that which negates the disjunction and opposition, for example: “it is not the case that either this number is even, or it is divisible into two equal parts.” [...]

[metathetic and positive propositions]

[78.9] Sometimes the composition consists of a negative particle with another [term], as in “Zayd is non-sighted (*ghayr baṣīr*).” By “non-sighted” we intend “blind,” or a concept more general than that. In short, if “non-” is put together with “sighted” etc. as one thing, and is then affirmed or denied [of a subject], then “non-” (or in general any negative particle) becomes a part of the predicate. Thus, if you affirm the whole, that would be an affirmation. And if you deny it, that would be a negation, as when you say “Zayd is not non-sighted (*Zayd laysa ghayr baṣīr*).”

One should know that the true account of the categorical proposition is that, together with the idea (*maʿnā*) of the subject and that of the predicate, there is the idea of the composition between the two: this is a third idea in addition to these two. As one should seek to have utterances and ideas correspond in number, this third idea deserves a third utterance signifying it. It may be omitted in some languages, [79] as it occasionally is entirely omitted in Arabic, like when we say “Zayd [is] a writer (*Zayd kātib*),” where it really should be said “Zayd, he [is] a writer (*Zayd huwa kātib*).” But in some languages its omission is not possible, as is the case in proper Persian, for example with “is (*ast*)” in “Zayd is a writer (*Zayd dabīr ast*).” This utterance is called the copula.

If a negative particle precedes the copula, as in “not: Zayd is sighted (*Zayd laysa huwa baṣīr*),” then negation has been applied to the affirmation, thus eliminating it and negating it. Whereas if the copula precedes the negative particle, it

makes it a part of the predicate. Then the proposition is an affirmation, as in “Zayd, he [is] non-sighted (*Zayd huwa ghayr baṣīr*).” Sometimes the negation is doubled, as in “Zayd, he [is] not non-sighted (*Zayd laysa huwa ghayr baṣīr*).” The first [negative particle] precedes the copula for the purpose of negation, and the latter is preceded by the copula which renders it a part of the predicate. A proposition whose predicate is like this is called “metathetic,” “altered,” and “non-positive” (*ma’dūla wa-mutaghayyira wa-ghayr muḥaṣṣila*). This may also be observed from the side of the subject.

Metathesis either indicates the privation which is opposite to a possessed feature (*malaka*) or some other [lack], such that “non-sighted” just indicates “blind,” or “any animal deprived of sight, whether or not it belongs to its nature,” or something even more general than that. It is not for the logician to explain this, but for the linguist, and with respect to each language. The logician need only assume that, if the negative particle comes after the copula, or is governed by it in any manner, then the proposition is an affirmation, whether it be true or false; and that [80] the affirmation can apply only to something positive, represented either in [concrete] existence or in supposition (*wahm*). Thus, a judgment can be affirmed of a thing insofar as it is positive (or “real”: *thābit*). As for negation, it can also properly be made of a non-positive object, regardless whether it is non-positive necessarily, or not necessarily.

[T5] Bahmanyār, *Taḥṣīl*, 46.7–14

[*need for the copula to express the nexus between subject and predicate*]

You should know that the categorical proposition is completed by three things: the meaning of the subject, the meaning of the predicate, and the nexus between them. If I want to track what is implied in the utterance, it is necessary that [the proposition] contain a signification of the subject, another of the predicate, and yet another of the relation between them. Just from the co-presence of “human” and “animal” in the mind, it need not be the case that one of them is a subject and the other a predicate. When you compose an utterance that signifies the relation between them, then it is a reminder for the mind and [its use] is conventional. There is also [a connecting] expression in what is composed in [the case of] definitions, namely “which,” as mentioned above; otherwise it would not be a restrictive compound, and from this would arise no unified compound that yields a definition. For the definition signifies the true nature of a thing, and the true nature of a thing is a unity.

[T6] Bahmanyār, *Tahṣīl*, 46.15–47.7

[*the properties of the nexus expressed by the copula depend on subject and predicate*]

That which signifies this relation is called a “copula (*rābiṭā*),” and what goes for the [other] auxiliary expressions goes for it too. Like when you say “Zayd, he [is] a writer (*Zayd huwa kātib*),” you could just say “Zayd a writer” (*Zayd kātib*), [implicitly] intending the utterance of the relation between the two. When in the utterance “he” is made explicit, the proposition is called ternary; if it is not made explicit, [47] it is called binary. Moreover, if in addition “it is necessary,” “it is possible,” or “it is impossible” is mentioned, then [the proposition] is quaternary. It is the copula that makes a unity out of the plurality. As for the categorical proposition, it signifies a single link (*rabṭ*), and the link in the categorical proposition is that you say “the subject is (*huwa*) the predicate.” The copulae have different properties, depending on the subjects and predicates. Thus, they are simple only if the predicate [holds] of a single subject, not only in name but also in meaning. Not like when you say “the eye (*ʿayn*) is a body,” for “eye” is one of the homonymous nouns. If the meaning of an utterance [used to express] a subject or predicate is manifold, then the copula also becomes a homonymous utterance.

[T7] Al-Sāwī, *Baṣāʾir*, 103.16–104.3

[*leaving the copula implicit: verbs and derived nouns*]

The categorical proposition is made complete by three things: the subject, the predicate, and the relation between them. So if you say “human is animal,” you establish a relation and a nexus between “man” and “animal” without which it would not be the case that “man” is a subject and “animal” a predicate. There really ought to be an utterance signifying this nexus, but sometimes it is left implicit in the utterance of subject and predicate, relying on the mind’s understanding of this relation. If the predicate is a verb or a derived utterance, there is no need to have a separate utterance for the relation, because the verb attaches to the subject all by itself, as it [already] signifies a meaning existing for a subject. Thus, the signification of the subject is contained in the verb. Likewise with the derived noun, as for example “hitter” (*dārib*) and “white” (*abyaḍ*) signify whiteness or hitting as belonging to a subject. However, the difference between this and the verb is that, alongside with the meaning it shares with the derived noun, the verb signifies a specified time, a signification which the derived name lacks.

What signifies this relation is called a copula, like “he (*huwa*)” and the hyperartic verbs. A proposition in which the copula is expressed is called ternary, like “Zayd, he is a writer (*Zayd huwa kātib*)” or [104] “[Zayd] exists as a writer (*Zayd yūjad kātiban*)”. [A proposition] in which no such utterance is expressed is called binary. A ternary proposition is negated only if a negational particle is [applied] to the copula, so as to deny and negate it, like when you say “Zayd is not a writer” (*Zayd laysa huwa kātiban*); and then it is called a simple negation.

[T8] Al-Sāwī, *Baṣā'ir*, 105.11–106.6

[*different types of negation*]

People have tried to distinguish between the metathetic affirmation and the simple negation by making the metathetic [proposition] a non-existence [proposition]. The non-existence [proposition] is for them [a proposition] whose predicate is the lesser of two contraries, regardless of whether it is privative, like blindness or darkness, or an opposite like injustice. [...]

[105.16] According to the opinion of most [scholars], the metathetic [affirmation] is, [at least] in the usage of the logicians, more general than the non-existence proposition (*al-‘adamīyya*). This is because every simple referring meaning either has an opposite or does not. If it does, then either there is an intermediate [meaning between the opposites] or not. When we stipulate an existing subject, either this simple referring meaning exists in it, or its opposite, or their intermediate (if there is one). Or, all these may apply but only potentially, like an unopened eye:⁸ unsightedness and sight are both in it potentially. Or, something might not be able to receive [the contraries] either potentially or actually, like the soul, which cannot receive white, black, or an intermediary [color], either potentially or actually. Let us take the meaning of “just” as an example. If we say of an existing subject that it is non-just, then this judgment is true whether it is unjust or intermediate between just and unjust, or if both are present in it potentially like in a young boy, or not either potentially or actually, like in a stone. It is only false if the subject is non-existent, or if it is both existent and just. The non-existence proposition, by contrast, is that whose predicate is the lesser of two contraries. This is like when we say “Zayd is unjust,” which will not be true unless injustice [applies to him]; so this is more specific than saying “non-just.”

8 Reading *al-‘ayn*.

[106] A second opinion is that the metathetic [proposition] is more general than [the proposition with the negative predicate] for another reason: because we use the metathetic [proposition] for the absence of something that cannot be received by one of the genera to which the subject belongs. For we say “substance is non-existent in a subject,” or “substance is a non-accident.” A substance has no genus besides the fact that it cannot be an accident.⁹

But the simple negation, which is of the form “not: Zayd is just (*Zayd laysa bi-ādīl*),” is more general than the metathetic affirmation, because it—I mean the [simple] negation—is true of everything of which the metathetic [proposition] is true. However, when the subject is non-existent the metathetic [proposition] is not true.

[T9] Abū al-Barakāt, *Mu‘tabar*, 69.17–70.13

[*knowledge, meaning, judgment, and the declarative phrase*]

First of all we need to know what cases of understanding (*ma‘ārif*) are, and what cases of knowledge (*ulūm*) are, and what is the difference between the two. Cases of knowledge are made up of [70] composed utterances and meanings (*ma‘ānī*). Declarative phrases are utterances signifying [meanings], just insofar as they are cases of knowledge, not insofar as they are meanings [that are] more than one. Truth and falsity are concomitant to them by their relation to existence, by correspondence or lack thereof, respectively. Taking something as true or false is a judgment (*ḥukm*) of this correspondence or lack thereof. The judgment is a state (*ḥāla*) occurring in the soul: this is knowledge. Or rather, knowledge is the outcome of the judgment (*maḥṣūl al-ḥukm*) and that which is judged, upon which the judgment is passed in the soul. This is why “objects of knowledge” is said in two ways. The first is called “knowledge” [in the strict sense], and this is the judgement of a proposition, either affirming or denying [it]; the second is of existing things which have those meanings, and these in particular are customarily called “objects of knowledge.” However some objects of knowledge are things whose meanings are not judged as applying to existent things. Such are, for example, the genera and species mentioned earlier. These only occur by relation to existing things, which is why the existent is not necessarily prior to the object of knowledge and knower in every case; rather, there

9 The point here is that substance has no genus and so can only be “defined” or picked out with negative characterizations.

are some objects of knowledge (I mean, cases of knowledge) that are prior to existents, and are their causes. This point of view is easily verified by the expression “existence.” Propositions are also declarative phrases, so called insofar as they are signs of one thing being asserted about another.

[T10] Abū al-Barakāt, *Mu‘tabar*, vol. 1, 70.18–71.11

[*affirmation is more fundamental than negation*]

Concerning predication: an affirmation is called “predication” in the true sense (*bi-l-ḥaqīqa*), whereas the negation is so called only metaphorically, insofar as formulating (*taqdīr*) a predication is prior to getting knowledge of its negation. It is not that each of two meanings comes to mind, and then it follows for the mind that one is affirmed or negated of the other; rather, it is only with specific meanings with regard to [other] specific meanings that the judgment of affirmation or negation follows, either due to the two meanings in themselves, or because this has become necessary for them. Whatever these meanings are, just insofar as they are meanings taken absolutely, they allow for predication even before they are known. If knowledge then brings out this possibility, rendering it necessary, then the judgment regarding it is affirmative. If it brings it out but renders it impossible, then the judgment regarding it is negative. Negation is thus called “predication” because of this prior fact that [the meanings allow for predication]. Thus it is so called [71] metaphorically, whereas affirmation is so called in the true sense.

[*neither subject nor predicate is more fundamental than the other*]

Likewise, “subject” and “predicate” are said of what is postulated as subject and predicate, and as meanings one of which is judged to be the other, and only then do they become subject and predicate in the true sense. The subject is not [initially] determined to be a subject, nor the predicate to be a predicate. Neither of them is prior to the other in this respect, insofar as they are both meanings in the mind, or with regard to any status (*ḥāla*) that attaches to their conception and makes them, by custom, more prior for the mind. Whoever puts the subject first makes it into a subject, and whoever adopts the custom of putting the predicate first makes it a predicate. For there are people who adopt the custom of putting the subject first, on the level of utterances, saying for example “every human is an animal,” while others customarily put the predicate first, for example when they say “animal applies to all humans” or “[animal] is said of all humans.” But that is perhaps determined by the role (*ḥay’a*) played by each and by the causes that attach to them inasmuch as they are what they are, not

inasmuch as they are conceptualized. For in the sciences, it is likewise said that the meanings of substances feature as subjects for the accidents, like “human” for “white.” And the particulars feature as subjects for universals, like “human” for “animal” or “Zayd” for “human.”

[T11] Abū al-Barakāt, *Mu‘tabar*, vol. 1, 71.17–72.7

[*metathetic propositions, the negational particle, and the copula*]

Some categorical [propositions] are said to be “metathetic”: these are the ones whose subject or predicate, or both, are a noun that expresses a negation of something, rather than meaning that something is the case. It is signified by a phrase (*naṣṣ*), or likewise a verb (*kalīma*), [that expresses] that some meaning is *not* the case. Thus, we say “man is silent,” “horses are non-rational,” or “man is non-rational.” These are opposed to propositions whose predicate and subject are nouns, or nouns and verbs, that positively obtain, and are called simple. Categorical propositions are thus divided into simple and metathetic propositions. The difference between metathetic propositions and [simple] negative propositions is that [in the latter] the predicate is denied of the subject, whereas in the former, [72] that is, the metathetic propositions, the negational particle—which is “not (*lā*)” or “non (*ghayr*)”—is part of the subject or the predicate, and the judgment is affirmative. Or a denial can be joined to [the subject and predicate together] and introduced between them: thus, we say “horses are not non-human,”¹⁰ or “Zayd is not a non-human.” This was used in the science of the Greeks. And they had a particle (*ḥarf*) that would be introduced between the subject and the predicate, just like it may be used in Arabic. They called it a nominal suffix (*khālifāt al-ism*), which was [like] the particle “he” (*huwa*). So they would say “The horse, it (*huwa*) is non-human” or “Zayd he (*huwa*) is not non-human,” which in [the context] of a proposition is called a copula. When the negational particle succeeds the copula, then it is a part of the predicate; if it precedes it, it is a negation of the predicate. With this the difference between negation and metathetic proposition has been completely explained.

10 Emending to *al-faras laysa ghayr insān* instead of *al-faras ghayr insān*; the point seems to be that in contradistinction to the metathetic negational particles *ghayr* and *lā* that always precede the term they are applied to, the predicative negational particle *laysa* occurs, just as it did for the Greeks, between subject and predicate and denies the predicative relation.

[T12] Al-Suhrawardī, *Mantiq al-Tabwihāt*, 22.14–23.6

[*concomitants of propositions*]

In a proposition there may be added features (*aḥkām*) that are not required by mere predication, like the utterance *innamā* [23] in Arabic [meaning “nothing but”]. When it is included in a proposition, it signifies the restriction of a part that is brought up in another, negative proposition, in potentiality or in actuality, vis-à-vis another part.¹¹ Sometimes it implies the restriction of the subject vis-à-vis the predicate, and sometimes vice-versa. Like the [definite article] “*al-*” in the predicate, as in “the human is *the* (*al-*) one who laughs,” it signifies the restriction of the predicate vis-à-vis the subject, and their being co-extensional. The negational particle may be included in the proposition to negate what is implied by it,¹² while permitting the remainder of the proposition to be affirmative. Thus it is said “there is no J apart from B,” which means sometimes that the two [sc. J and B] are in reality one and the same, sometimes that the one implies the other.

[T13] Al-Suhrawardī, *Mantiq al-Tabwihāt*, 25.4–12

[*the copula in Persian and Arabic*]

The true nature of every categorical proposition is that it contains a subject, a predicate, and a nexus. And for each of these, it is only right that there should be an utterance signifying it. Likewise with the hypothetical [propositions]. However, the copulae may be tacit in some languages, or may be flipped around, like in the language of the Persians: “Zayd knowledgeable is” (*Zayd dānā ast*), which in Arabic would be “Zayd, he is knowledgeable” (*Zayd huwa ʿālim*). The utterance signifying the nexus is called the copula. In Arabic this connection can be effected by the utterance “he” (*huwa*), or “being” (*kāʿin*), or “exists as” (*yūjad*), like when it is said “Zayd exists as a writer” (*Zayd yūjad kātiban*), or likewise “[Zayd] is being (*kāʿin*) [a writer].” When used with this meaning, [the utterance] becomes an auxiliary. Conjoined with it are two concepts [expressed by] nouns or verbs, and they thus function in concert with

11 Contrast *Zayd laysa bi-ṭawīl* (“Zayd is not tall”) to *innamā Zayd aṭwal min ʿAmr* (“Zayd is only taller than ʿAmr”). Here *innamā* does not alter the sense of the predication itself, but restricts the meaning of the second proposition: now ʿAmr is the only person in comparison to whom Zayd is taller.

12 Here we read *-hā* rather than the editor’s chosen reading, *-humā*, since we take the referent to be “the proposition.”

one another. In the language of the Arabs, if the negation precedes the copula, the former negates and cancels the latter, so that the proposition is negative; whereas if it succeeds the copula, then [the negational particle] connects with and becomes part of the predicate, as when we say “Zayd is a non-writer.” A proposition with a copula is called ternary, and without it, binary. The difference between a simple negation and a metathetic affirmation is that the first may hold true of non-existing objects, since it is correct to deny attributes of the subject of the negation; whereas the second involves no affirmation of anything existing, except in one of the two [types] of existence [sc. it involves only mental existence, not concrete existence].

[T14] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 123.4–124.9

[*the indefinability of “proposition”*]

On the definition of the proposition: it is said to be that which, when someone utters it, he is said to be speaking either truly or falsely. Alternatively, it is said that it is that which is susceptible to being taken as true or as false. Or else, that it is that in which one meaning is judged to hold of another by means of a nexus, either affirmatively or negatively.

[124] Someone might object to the first [definition] by saying that truth can be defined only as an assertion corresponding to facts (*al-khabar al-muṭābiq*), but then the definition of “assertion” itself will be circular. To the second [definition, an objector might say] that “taking as true” can be defined only in terms of asserting about the speaker that he speaks truly, which again is circular. To the third [definition, an objector might] say that “judgment (*ḥukm*)” is a near synonym for “assertion (*khabar*)”—of which affirmation and negation are but species—so that [here as well] circularity follows.

The truth is that the quiddity of the “assertion” is indefinable, because any reasonable person immediately perceives the difference between the assertion and the fact (*al-amr*). Thus any time someone brings forward the fact as something that may be fittingly [expressed] only as an assertion, this claim is immediately known to be false.

Moreover, [“assertion” is indefinable] because everyone knows by necessity that he either exists or does not, but this is a specific assertion. So knowledge of a *specific assertion* would be prior to having a conception of *assertion* just by itself (*aṣl al-khabar*). Therefore it is primary.

[T15] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 129.2–130.6

[*the form of propositions: the nexus on the semantic level*]

As for the constituent elements (*arkān*) [of the proposition], they are on the one hand its form, namely the nexus (*nisba*) between its two terms, and on the other hand its matter, this being the subject and the predicate. The investigation of the form concerns either its [i.e., the nexus'] meaning, or the utterance signifying it.

And concerning the meaning, there are two investigations. (a) In every proposition there are of course the subject on its own (*dhāt al-mawḍūʿ*), the predicate on its own, and the nexus between the two, which is distinct from them because either of them may be grasped intellectually while being oblivious of [the nexus], and [the nexus] may be grasped while one is oblivious of the specificities of these two [sc. the subject and predicate]. Also, because the nexus between the two things is posterior to them, and what is posterior is distinct from what is prior.

[130] (b) The nexus of one of the two [terms] to the other is not [the same as] the nexus of the other to it, because the nexus [i.e. relation] of one of the two to the other is that of being-a-subject and being-a-locus-of-inherence (*maḥalliyya*), while the nexus of the other to the first is the nexus of being-a-description and of being-that-which-inheres (*ḥāliyya*). One of the two [nexus] may be necessary while the other is contingent, which is why propositions do not preserve their modalities when they are converted. But the nexus which is part of the quiddity of the proposition is the aptitude of the subject on its own for being described by the predicate, while the other [nexus, i.e., that of being a predicate] is only a concomitant [of the proposition].

[T16] Al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, 130.7–132.10

[*the form of propositions: its parts on the level of utterance*]

Concerning the utterance, there are five points of investigation. (a) If the nexus is signified by being included in the predicate term, as is the case with derived nouns and verbs, then on pain of repetition it is not permissible to single it out by correspondence [between simple utterances and simple concepts signified]. Such a proposition is by nature binary on the level of utterances. (b) The natural place for the copula is in the middle between subject and predicate, because the nexus is between these two, so the utterance signifying it also needs to be between them. [131] (c) Every proposition is strictly speaking (*fī*

naḥsihā) quaternary, because the copula in itself (*fi naḥsihā*) must have a specific modality, being either necessary or non-necessary. Whereas this may or may not be the case for the utterance. (d) When we say “Human: necessary that it is animal (*al-insān wājib an yakūna ḥayawānan*)” (d₁) “necessary” may be a predicate, and what comes after it is mentioned so that [the predicate] is further specified, because necessity is a relational matter (*amr nisbī*) and it can be mentioned specifically only by mentioning that to which it is related (*mansūb*); (d₂) or [“necessary”] may be part of [the predicate]; (d₃) or it may be external to [the predicate]. In the first and second cases, the proposition is not modalized on the level of language, but rather it is absolute. Only on the third account is it modalized.

But two doubts remain [regarding point (d)]. *First*: if for every predicate, its nexus to its subject may be one of necessity, impossibility or contingency, then, if it is correct to make these three (d₁) a predicate, or (d₂) part of [a predicate], [the predicate] will then be affirmed of its subject according to one of the three modalities, and an infinite regress will follow. *Second*: If we concede the possibility of making [modalities] either (d₁) a predicate, or (d₂) a part thereof, or (d₃) external to it, by what [criterion] can some of these possibilities be distinguished from others?

[132] *The answer to the first* is that [an infinite regress] only follows if we take these three to be affirmed as established in extramental reality. But this is not the case, as will become clear in the second part of the work (*fi l-ḥikma*).¹³ *To the second*: if the copula precedes [the utterance signifying the modalities], then [the modalities] are (d₁) the predicates or (d₂) part of [the predicates], whereas if it comes after them, then (d₃) they are [*de dicto*] modalities. If [the modality] is not mentioned, then it is whatever the intention [of the speaker is].

(e) Even though the quantifier (*sūr*) is (as will soon be explained, God willing) a part of the proposition as heard, it is not a part of the proposition as grasped by the intellect. [The quantifier] is nothing but an utterance signifying the quantity for which the predicate is affirmed, and that quantity is the same as the subject. But in fact the quantifier does not add any further consideration (*laysa li-l-sūr fi l-ḥaqīqa i'tibār*) distinct from the subject—in contradistinction to

13 The work as a whole is called *al-Mulakhkhaṣ fi-l-mantiq wa-l-ḥikma*: al-Rāzī thus refers ahead from the logic part to the second section, which includes a discussion of this sort of metaphysical issue.

the copula and the modality. That's why they classified propositions—because of [the additional quantifier]—as quinary, much as they classified them—because of the copula and the modality—into binary, ternary and quaternary.¹⁴

[T17] Al-Khūnajī, *Kashf al-Asrār*, 77.3–78.2

[criticism of al-Rāzī: the nexus implied by verbs and derived nouns cannot function as a real copula]

The Imām [al-Rāzī] maintains in his books that, if the predicate of the proposition is a verb or a derived noun, then [the proposition] may fairly be taken as binary, because of the nexus being [implicitly] signified by being included [in the predicate]. Consequently, it is not permissible—on pain of repetition—to single out [the nexus] by mentioning [the copula]. Whereas if [the predicate] is a non-derived noun, then [the proposition] may fairly be taken as ternary.

This goes against what has come down to us from the Master [Avicenna]. How then can [al-Rāzī] acknowledge in the commentary on the *Ishārāt* that the verb only signifies a nexus to an indeterminate subject? He claims that if we say “Zayd writes,” the expression “he” is implied at the end of the verb, being concealed in it, according to the Arabic grammarians; and that if we were also to put it in the middle, we would wind up saying “Zayd, he writes, he” (*Zayd huwa yaktubu huwa*), which is a repetition. But this does not follow. For the expression “he,” which is [implied] at the end of the verb, is not a copula according to [the grammarians], but an agent noun (*ism fā'il*); whereas the middle one is indeed a copula. So the two are not alike. Thus [the grammarians] do not doubt that what is [implied] at the end [of the verb] is a noun (*ism*), whereas some of them maintain that the other is an auxiliary. We find in the Qur'ān the explicit statement of a copula even though the predicate implicitly signifies the nexus, like the words of the Exalted: “You are the All-Observer” (*kunta anta al-raqība*, Qur'ān 5:117), recited with the accusative ending. It would however be acceptable to say that the verb alone is not a predicate, according to them, but rather the whole phrase (*jumla*) made up of [the verb] and the agent noun that comes after it. Even if the verb on its own does not signify a determinate subject, still, together with the concealed pronouns referring back to the preceding [syntactical] subject (*al-mubtada'*), it signifies a determinate subject

14 In other words the proposition, on the level of language, can be considered as having two parts: subject and predicate, or three (adding the copula), or four (adding also the modality), or five (adding also the quantifier).

(*mawḍūʿ*). But generally speaking, the controversy about this is ultimately a linguistic question, one that lies outside the scope of the logician. All the logician has to do is to mention that which signifies a determinate subject. If the Arabic verb does this, on their assumptions, then the copula need not be mentioned along with [the verb]. But if it signifies an indeterminate [subject], then this is needed.

[T18] Al-Abharī, *Tanzīl*, quoted from al-Ṭūsī, *Taʿdīl*, 159.5–160.1

[*unlike verbs and derived names, the copula ties the predicate to a determinate subject*]

If the predicate in a proposition is either a verb or a derived noun, it signifies a nexus to some subject. If the copula is mentioned, it signifies a nexus to a determinate subject. If you say “Zayd writes,” the utterance “he (*huwa*)” is implied in the parts of the verb, but it [sc. “he”] would be an agent-noun, whereas the copula signifies the nexus. What is signified by one is not what is signified by the other. [...]

[159.18] When the copula in a proposition is a verb, the proposition is called incomplete ternary, because it does not signify [160] a nexus to a determinate subject; it is only the atemporal copula that signifies that.

[T19] Al-Abharī, *Tanzīl*, quoted from al-Ṭūsī, *Taʿdīl*, 160.14–161.8

[*quantified propositions: mental vs extramental*]

When we say “every J is B” this is sometimes used for extramental existence, sometimes with regard to the true sense (*ḥaqīqa*). In the first case, when one says “every J is B,” this means that every J in the extramental world is B in the extramental world, regardless of whether J was like this previously or will be subsequently. In the second case, when one says “every J is B,” this means that any thing, were it to exist while being J, would insofar as it exists, be B. That is, everything that has the first feature also has the second feature. This means that everything that implies J also implies B.

[*problems caused by impossible subjects*]

It may also take an impossible [subject], so that it is true to say “whatever is a human and not an animal is a human.” For even though this [subject] cannot exist, still it is true of it that if it were to exist, it would be a human and not an

animal; therefore, if it were to exist, it would be a human. On this interpretation, the universal negation is not true at all, because if you say “no human is a stone,” its contradictory would wind up being true, because whatever is a human and a stone, is a human, and whatever is a human and a stone, is a stone. [161] Therefore, some humans are stones. From this it becomes clear that the particular affirmation [e.g. “This human [that is not a stone] is a stone”] is never true either. Also, the universal necessary proposition would be true together with the truth of the metathetic with the opposite predicate. For if you say “every human is an animal” it would be true together with it that some humans are *not* animals, because whatever is a human and not an animal is also a human, and everything that is a human and not an animal is also not an animal—therefore, some humans are not animals. Since this is so, we have restricted the subject so that it is not something impossible. Then, when we say “every J is B” in the true sense (*bi-ḥasabi l-ḥaqīqa*), we will mean that everything that implies J—from among the instances that are not impossible either by themselves or on account of something else—also implies B. Sometimes we may also use [“every J is B”] with regard to mental existence. In that case what is meant by it is that everything that is J in the mind is also B in the mind.

[T20] Al-Abharī, *Tanzīl*, quoted from al-Ṭūsī, *Taʿdīl*, 166.4–7; 167.20–23

[*problem of impossible subjects*]

When it is said “everything that is not J in the extramental world is B in the extramental world,” not in the sense that every non-J in the extramental world is B in the extramental world, but in the sense that everything of which the negation of J is true in the extramental world is B in the extramental world, this being the negation of the subject—this is never true, because the negation of J would be true of an impossible thing in the extramental world, and it is not true of [the impossible thing] that it is B in the extramental world. [...]

[“every J is non-B” converts to “no J is B”]

[167.20] But when it is said “Every J is not B in the extramental world,” not in the sense that every J in the extramental world is non-B in the extramental world, but in the sense that the negation holds true of the individual instances of J, then [in this case] the negation is made [a part of] the predicate, so that it is a negation of the predicate and there is no affirmative judgment being made. Its denial presupposes the existence of the subject and is equivalent with [the proposition] “No J is B.”

[T21] Al-Ṭūsī, *Ta'dīl*, 159.9–160.11

[commentary on T18: verbs do signify the nexus to a determinate subject, but only accidentally]

I say: the verb, when it is the predicate, signifies the nexus to some subject when it is taken in isolation. This is what happens when we say for example “Zayd writes (*yaktubu Zayd*).” Here, the utterance “writes” signifies in its essence the nexus to some subject, which is then specified by the utterance “Zayd.” As for what happens when we say for example “Writes Zayd” [here the Arabic word order is the grammatically improper *Zayd yaktubu*], there is no difference in meaning between this and our saying “Zayd [is a] human,” since both are connected by the [hidden] pronoun “he” on the level of meaning, so that what is implied is “Zayd: he writes.” They differ only in that “writes” needs “he” yet another time, whereas “human” does not, and this is the “he” implied in the verb which is the agent pronoun—which is different from the copula, for it is a noun while the other is a particle.¹⁵ The grammarians call one the partitive and supporting copula, and the other a nominative pronoun. Hence, the derived noun is analogous to the verb. When we say for example “[Is] Zayd a writer (*a-kātib Zayd*)?” [the word order in Arabic is “A writer Zayd?” with an interrogative particle prefixed to “writer”] it connects by itself, whereas when we say “Zayd [he is a] writer (*Zayd kātib*)” it connects by means of the implied utterance “he.” [...]

[160.2] In terms of meaning, the verb does not signify the nexus to a determinate subject essentially. Nonetheless it signifies it accidentally, because its agent specifies that subject which the verb did not signify as specified, as when we say “Zayd, [he] is a writer (*Zayd yakūnu kātiban*).” Here the utterance “[he] is (*yakūnu*)” signifies the necessity of its being connected to some subject, and the utterance “he” that is implied in it and that refers back to Zayd specifies the subject to which it is connected. This proposition, on the level of meaning, signifies the same as that which is signified by “Zayd, he [is a] writer (*Zayd huwa kātib*),” together with the addition of its signification of time because of the utterance “is” that is added to it.

Now, as far as the utterance is concerned, (a) the proposition whose [copula] is in the form (*ṣigha*) of the verb is called incomplete ternary, while (b) that

15 Again, we have here the double function of *huwa*, as pronoun and copula. See the previous note.

whose [copula] is in the form of a noun is called complete ternary. (c) And that in which there is no copula mentioned is called binary. For the utterance alone, without considering hidden pronouns and implied [meanings], requires in (a) one of the [first] two cases the nexus to an indeterminate subject, and (b) in the other the nexus to a determinate subject, while (c) in the third case, it does not signify a subject.

[T22] Al-Ṭūsī, *Ta'dīl*, 161.9–162.1

[commentary on T19: criticism of al-Abharī's account of reference in the extramental sense; existence is not an attribute, and reference is only to the quiddity]

I say: with each of the three approaches that [Abharī] mentions there is room for discussion and further inquiry.

The first [reading], which has to do with extramental existence, was that “every J is B” means that each of the Js existing in the extramental world at the present time, or in the past or future, is also B in the extramental world. This is the approach ascribed to some of the ancients. The Master [Avicenna] discussed this and described it as nonsense and confusion. *He said:* when we say “every B [is J],” and mean by [“every B”] each item which is described as B at some time, this [only refers to] some of what is described as B, but “every B” is more general than that. *He said:* in this case the subject-terms of the propositions are items taken without consideration of their existence, yet predicates are predicated of them without being either necessary or contingent, but just predicated of them insofar as they apply at some [specific point in] time. For example, when [the mathematicians] say “every pair of transverse circles constantly moving in different directions along a single axis towards its poles [first] coincide and are [then] disjoined,” this proposition is not necessary, for coinciding and being disjoined is not always [predicated] of them. And likewise with the contingent things which [in themselves] may be or not, yet must actually occur at a certain time. *Then he said:* even so, we do not mean that in which it exists, at some certain time period; rather one does not even consider its existence but only its quiddity. Thus the words of the Master. Now, if D is the subject one may want to assume it to be extramentally existent (which is not our view). But in that case, existence would be an attribute of the subject and a part of it. But what we understand by “every D” [is broader,] taking D absolutely.

[T23] Al-Ṭūsī, *Taʿdīl*, 162.2–163.14

[commentary on T19: criticism of al-Abharī's account of reference in the "true sense"]

Concerning the second [reading], which [al-Abharī] linked to the "true sense (*al-ḥaqīqa*)": here he offered an interpretation thanks to which he fell into error. *He said*: what is meant by our saying "every J is B" is that everything that implies J also implies B. But their [i.e., the other logicians'] interpretation is confused.¹⁶ That is, the thing need not be said of that which is implied. Here, the meaning of "every J" is everything that is said to be J, not everything that, were it to exist, J would exist. For there are many things such that, were they to exist, J would exist, yet are not said to be J: for instance the complete causes of J, the things of which J is one of the parts, and the things from which J cannot be separated in existence.

The reason [al-Abharī] fell [into this error] was that some people explained the meaning as follows: when we say "every J," we do not only mean by it everything that is J in the extramental world, but also everything of which, *were it to exist*, it would be true to say of it that it is J. By bringing up the hypothetical here, they didn't mean that there is an implication between the existence of those things and their being described by J-ness. Rather, they wanted to include under "every J" whatever is actually J for the intellect, or by mental supposition, from among those items that are not excluded from being J. For in order to understand the meanings of conditional particles, one first needs to suppose the antecedent to be existent.

[*the problem of impossible subjects*]

Now, since the author of the book [i.e. al-Abharī] mistakenly thought there to be an implication, he used a hypothetical connective proposition [i.e.: "if J exists, it is true to say of it that it is J"] to explain how the [reference of the subject-term] is restricted in categorical propositions. Hence he linked universality in predication, by which I mean the extension of all instances ["all J"], to universality in conditionals, by which I mean the general validity [of the conditional "always: if J exists, then it is true to say of it that it is J"]. From this it follows that [al-Abharī had to accept] impossible objects, because there is no problem with the antecedent of a conditional being impossible.¹⁷

16 Reading *mubham*, as suggested by an anonymous reviewer.

17 We take the point to be as follows: al-Ṭūsī thinks that al-Abharī confuses (a) "all J, if it

Hence [his] judgment that the subject-term of the whole [proposition] could include impossible objects. Thus when one says “every human,” this would include that which is human and not-animal. But no one would adopt this position! For the later scholars disagreed with the Master Abū Naṣr al-Fārābī, despite his preeminent position in the verification of the philosophical sciences, for which he was nicknamed the “Second Teacher”. *He said*: when we say “every J,” this includes anything that could be J, such that one must understand by “black” everything that is not black but might possibly turn black. [Having denied this,] how then could [the later scholars] allow it to include even things that cannot possibly be black?

Proof that his [al-Abhari’s] claim is false, namely that it is true that every human that is a non-animal is a human, even though this cannot exist. This is justified [by al-Abhari] on the grounds that even though the subject cannot exist, it is still true of it that, if it were to exist, human would be a non-animal, and were it to exist, it would still be a human. This is based on the necessity of implication from the whole [163] to its part. Hence he was led to the view he adopted. On this basis, he judged that some clear syllogisms that include a true conditional are not productive, because he allows that the truth of the [whole conditional] proposition [i.e.: “if J exists, then it is true to say of it that it is J”] remains intact, regardless of the assumption made in the antecedent, and thus it is allowed that this [assumption] be something absurd. *It may then be said to him*: the antecedent in “if something that is human and not an animal were to exist,” is absurd, just as you stated. In which case, there will be a disparity in truth between the whole [conditional] and one part of it. In light of this, it will not follow that “human” is predicated of “human that is a non-animal.”

What he [al-Abhari] says in the insight following this one has not escaped the author¹⁸ [al-Ṭūsī himself]: “if the consequent is a part of the antecedent, the proposition will be true by tautology (*jazm*); but this does not happen with other inferences, as I will show.” But this is an arbitrary ruling and fails to acknowledge any special difference between [the hypothetical conditional] and the other inferences.

exists, is J” with (b) “always: if J exists, it is J.” Construal (a) need not allow impossible subject terms, because “all J” will be an empty set if J is impossible; by contrast (b) would need to allow them, because when J is impossible, “if J exists” will simply be a false antecedent of a conditional.

18 Reading *al-muṣannif*.

Verification regarding this proposition [sc. “every human that is a non-animal is a human”]: “human”—which is [here] made a predicate—cannot be taken in the sense of being possible of existence. “Human” in this sense is something that must necessarily be a rational animal, so it is impossible that it be non-human or non-rational. The subject [of the proposition], which is “human that is a non-animal,” means something that is a rational animal but not an animal. How though can “non-animal” be predicated of animal, which cannot possibly fail to be animal? In fact it [would then] be possible to predicate of it “human that is non-human.” Thus, it is obvious that what [al-Abhari] proposes, namely that the proposition is true, is not as he claims.

[T24] Al-Ṭūsī, *Ta’dīl*, 164.12–164.19

[commentary on T19: on the mental reading, “every human” would again include reference to impossibilities]

Concerning the third [reading] that he brings forth, namely the one according to which [“Every J”] is used only with respect to mental existence, this is [a position] that no one could possibly defend, because there are many absurd [thoughts] existing in the mind. When one focuses on mental existence and disregards extramental existence, it becomes possible¹⁹ to make use of a judgment like “Humans are flying,” because it may be imagined to be so in the mind. Then, when one says “every human,” this would include the flying humans, and the aforementioned absurdities would arise again. There is no use in considering such examples, since they are determined to be impossible by themselves in the extramental world. [...] Thus the extramental existent has to be included in [the referent of the subject term], since after all this will never fail to exist in the mind.

[T25] Al-Ṭūsī, *Ta’dīl*, 164.20–165.9

[commentary on T19: the majority reject impossible subjects]

Having shown the faultiness of the approaches he mentioned, let us explain the widely acknowledged approach used by the majority (*jumhūr*) of scholars. It is this: when we say “Every J is B,” we mean by it that every single instance of what is said to be J—regardless whether J-ness is its essence or a non-essential

¹⁹ We delete the negation here.

attribute ascribed to it along with its essence; and regardless whether the attribute holds always or not, or instead at a specific time or not; and regardless of whether it is existent extramentally or [165] in the intellect, or merely as a mental stipulation of something whose existence is not impossible by itself, but just on the condition that it is how it would exist if it were indeed to exist, without considering any of these types [of existence, i.e. extramental, mental, or stipulative], and rather just insofar as it is actually J according to a more general manner of existence that includes all sorts of existence, and not in that it exists, insofar as it is existent or not existent, and also not merely in that it is truly said to be J—is B. And it has the existence of B-ness in just the way it has the existence of J-ness. Now, if the proposition is a general absolute, according to the foregoing explanation impossible objects will not be included in it. Nor will anything that is [merely] in potentiality, insofar as it is in potentiality. If the subject is impossible by itself, like void or the atom, then one is to understand from [the proposition] that on the opinion of the speaker it is not impossible. Upon the attribution of extramental existence, void or the atom would be in actuality, and it is in this sense that he is making his judgment. This then is the reading espoused by the majority.

[T26] Al-Ṭūsī, *Taʿdīl*, 165.10–166.1

[commentary on T19: on al-Fārābī's account]

It remains for us to consider the reading ascribed to the eminent sage Abū Naṣr [al-Fārābī]. *We say*: the difference between the first reading and this one is the difference between (a) the general absolute [proposition] and (b) the general possible [proposition].²⁰ For (a) the first is as if it contained everything that is J in the “general absolute” sense, while (b) the second is as if it contained everything that is J in the “general possible” sense,²¹ which excludes that which in itself cannot possibly be J, but includes that which may be J but never actually becomes J, whether extramentally or by stipulation.

(b) Thus, when we say “everything that is actually J is necessarily or possibly B,” this must also include everything that *can be* said to be J, even though there is no expression of this in the whole of the subject-term. For if we stipulate

20 For the different types of modality propositions and their respective truth conditions, see our chapter on Modal Syllogistic.

21 Compare to our notion of “one-sided possibility,” i.e. either necessary or contingent, but not impossible.

that something that can be said to be J becomes J in actuality, then it is certainly included in the mentioned judgment. The knowledge that this judgment obtains in the bare facts (*fī nafs al-amr*) is prior to the stipulation, because a possible stipulation should not introduce something non-necessary for what is necessary, or vice-versa. For that would be an absurdity, and the possible never requires anything absurd. (It might, though, signify something that [the speaker] does not know [to be impossible].) The stipulation is restricted to taking something not impossible insofar it is in actuality, not in potentiality or in some other way.

(a) But when we say “everything that is J in fact, is B absolutely,” this does not include that which *can be* said to be J, because this latter judgment just permits that [the subject] is compatible with J-ness in the bare facts, but which has not actually become J in actuality, even if it is among those things that can be J.

This is the difference in perspective between the two readings, and with regard to generality [166] and specificity. We went on at some length on this topic because it is important in this science [sc. logic].

[T27] Al-Ṭūsī, *Taʿdīl*, 166.8–168.7

[commentary on T19: criticism of al-Abharī’s account of metathetic propositions]

I say: sometimes [al-Abharī] takes a hypothetical proposition in place of a categorical [proposition], and sometimes he takes a categorical proposition. In this case he takes the categorical proposition. He considers here the difference between categorical propositions with negation and with metathesis, in which [the negation] is attached to a predicate that is either affirmed or denied. The truth is that when the subject just by itself has a negation or a metathesis ascribed to it, and nothing further, there is no difference between the two. But a difference does arise in the scenario where [the subject] is restricted to extramental reality.

Before proving this, let us settle what needs to be known about this issue. *We say then:* when the subject in a proposition is taken as extramentally existent, one may pass judgment concerning it, whether affirmatively or negatively, in both the extramental world and the intellect. But when it is taken as not being extramentally existent, one may make no affirmative judgment about it extramentally, because one cannot ascribe an existing attribute to that which is not

extramentally existent. But one may still make an affirmative judgment about it intellectually, as when the conjunction of two contradictories is conceived [in the mind] and judged to be absurd. As for negation, there is no disputing that it can be done, even if it is taken absolutely, and [the subject's] existence and non-existence need not be considered, according to the generally accepted view we have mentioned. So the judgment concerning it is correct in all cases, except if it is judged as having some positive feature (*amr thubūti*) extramentally, which would require judging it to exist extramentally, as we mentioned. But this will not be necessary, so long as what is judged to hold of it is extramentally negative (*amr salbi*); instead, it remains at the aforementioned absolute level.

Now that this is settled, it becomes clear that when we say, “Everything of which the negation of J is true in the extramental world” [this being a negation] and [167] “Everything of which the affirmation of non-J is true in the extramental world” [this being a metathesis]—without this meaning that everything that extramentally exists, and of which this negation or affirmation are true, are *absolute* subjects that have been posited together with the two attributes [sc. J or non-J]—a negational utterance is made part of one of [the two propositions, i.e. the negation], while an affirmative utterance is made part of the other [i.e. the metathesis]. So the situation of these two subjects together with these two attributes is like that of “[not a] writer” [which is a negation] and “illiterate,” [which is a metathesis], etc. So with respect to this particularity, they are equivalent.

As for the scenario where the two attributes are restricted as being in the extramental world: the thing described by an extramental affirmation must [likewise] be extramentally existent; whereas the thing described by an extramental negation remains absolute, just as it had been previously. And then, when we judge the [two attributes] by saying “It is B in the extramental world,” this requires them to be existent in the extramental world. This does not require that one judgment be untrue while the other is true, whether on the level of expressions on the level of meaning. [...]

[167.16] The upshot is that the difference between the two propositions mentioned is that, with the metathetic one, sometimes the description of the subject signifies its being existent extramentally, but sometimes the judgment concerning it is otherwise. Whereas with the negating [proposition], the description of the subject signifies neither its existence nor its non-existence; it is only a [positive] predication that requires it to be existent extramentally. [...]

[168.1] If the negation comes after the copula, then it has the sense of a metathesis, regardless of whether the utterance “not” (*laysa*) is put into composition with another [utterance], or instead the utterance “un-” (*lā*) is put into composition with another utterance, because all these composites and compounds play the role of simple terms, about which a judgment is passed. In a [metathetic] proposition one cannot ascribe a predicate to a simple [in the same way as we say] “this is that” (*huwa huwa*). So the meaning [of metathetic propositions] is: each thing said to be J in the way [just] ascertained is that thing of which B or not-B is predicated, or whatever other expression you want. If the predicate is not applied in the sense of a negation, such that one thing is negated of another, then the predicate alone may become a proposition and it no longer counts as a predicate. As for whether the subject demands existence or non-existence, this is as has been ascertained.

[T28] Al-Kātibī, *Munaṣṣaṣ*, fol. 51^r29–51^v8

[commentary on T14: criticism of al-Rāzī’s remarks on the indefinability of “proposition”]

Someone may respond to the first [argument] by refusing to concede that circularity follows. That would be the case only if we knew the true nature of “assertion” (*khābar*) by [means of knowing] the true nature of “speaking truly” (*ṣādiq*) and “speaking falsely” (*kādhīb*), but this is not so. For we define “assertion” as a statement to whose speaker one of these utterances, I mean “speaking truly” or “speaking falsely,” is applied. Nothing in this prevents that one might know the expression [“assertion”] while not knowing its two names. The upshot is that we do know the true nature of an assertion by these two utterances, and we know, regarding the true natures of that for which these utterances have been instituted, that they are some kind of assertion. There is no circularity in that. This is the response to [al-Rāzī] when he says that “taking as true” is asserting about the speaker that he speaks truthfully, and “taking as false” asserting about him that he speaks falsely, and that this would be circular.

[concession: one cannot define the essence of “assertion” without circularity]

As for his argument that “judgment” (*ḥukm*) is a synonym for “assertion,” and that the definition of “assertion” in terms of [“judgment”] is a definition of something in terms of itself, we do not concede that circularity follows. It would only follow if the aforementioned definition of “assertion” were a definition at the level of the true nature, and this is indeed impossible. Instead, it is a definition in terms at the level of naming, which comes down to the substitution

of an utterance with another one that is clearer for the questioner. In this way, nothing prevents defining something by a synonymous utterance that is clearer to the questioner than the utterance about which the question was posed. This response applies to the other two doubts as well.

[T29] Al-Kātibī, *Munaṣṣaṣ*, fol. 52^v15–25

[commentary on T15: presentation of al-Rāzī's arguments for the distinctness of the nexus from both subject and predicate]

Every proposition inevitably consists of the subject on its own, the predicate on its own, and the nexus as an affirmation between the two, if it is affirmative, or as a negation, if it is negative. This nexus is [according to al-Rāzī] distinct from the subject and predicate; he argues for this in two ways.

First: if [the concept of the nexus] were the same as either [the subject or the predicate], then we could not grasp either one of them [without the nexus]. But that consequent is false in both cases [sc. it is false that one cannot grasp the subject, or the predicate, without grasping the nexus]. The conditional is evident in both cases. As for the falsity of the consequent in both cases, this is because everyone can grasp a subject or a predicate while ignoring the nexus between them, and vice versa. (This calls for further inquiry, though, since we would rule out the possibility of grasping the nexus between them [sc. without grasping the subject and predicate].)

Second: the nexus between [the subject and predicate] is posterior to both. For a nexus (*nisba*) between any two things is posterior to them, and what is posterior to something is necessarily distinct from it. The first premise [i.e. that the nexus is posterior to subject and predicate] needs further inquiry, because the aggregate of all relations (*nisba*) has a relation to each one of them, even though that relation [sc. each member of the aggregate] is prior to the whole made up of all relations, by being a part of it.²² And what is prior to something cannot possibly be posterior to it. Now that you have learned that, *we say:* as for the fact that every proposition inevitably needs to have a subject and a predicate, this is obvious. As for the nexus, it does enter into the quiddity of [the proposition], for if it did not, then anyone who conceived the meaning of the

22 Here we switch our translation of *nisba* from “nexus” to “relation” to help make the point clear.

subject and the meaning of the predicate without this nexus, would then conceive the meaning of the [relevant] categorical proposition; but clearly this is not so.

[T30] Al-Kātibī, *Munaṣṣaṣ*, fol. 52^v25–53^r17

[commentary on T15: rebuttal of al-Rāzī's arguments that the nexus of subject to predicate is not the same as vice-versa]

He [al-Rāzī] said: "the nexus of one of the two [terms] to the other is not the [same as] the nexus of the other to it, etc."

I say: This is the second of the two inquiries about the meaning of "proposition," which lays it down that the nexus of the subject to its predicate in a proposition is not the nexus of the predicate to its subject. [Al-Rāzī] argued for this in two ways.

First: the nexus of the subject to the predicate is the nexus of that which is described to the description, and the nexus of the locus of inherence (*maḥall*) to that which inheres (*ḥāl*). Here he arranges four syllogisms of the second figure, each of which produces the conclusion that one of the two nexus is distinct from the other. (a) We say that it is the nexus of the subject to the predicate, and not the nexus of the predicate to the subject, that is the nexus of that which is described to the description.²³ (b) Likewise, we say the nexus of the subject to the predicate is the nexus of the locus of inherence to that which inheres, whereas the nexus of the predicate to the subject is not like that. (c) We say the nexus of the predicate to the subject is the nexus of the description to the thing described, but the nexus of the subject to the predicate is not like that. (d) We say the nexus of the predicate to the subject is the nexus of what inheres in a locus to that locus, but the nexus of the subject to the predicate is not like that.

But this calls for further inquiry. For we don't concede the truth of something in the premises mentioned in these syllogisms: if we say "X is Y," we don't [necessarily] mean that X is that which is described and Y a description, nor that X is a locus of inherence and Y that which inheres in it—even if in *some* kinds of propositions X may be something described or a locus, and Y a description or

23 All four arguments claim simply that the nexus is asymmetrical so it cannot be the same in both directions; arguments (c) and (d) are the same as (a) and (b) but go from predicate to subject instead of vice-versa.

something that inheres. Rather, what we mean by ["X is Y"] is that for everything of which X is true, Y is [also] true of it. This being so, the argument he gave to show that the two mentioned nexus are distinct crumbles.

He said: and one of the [nexus] may be necessary and the other contingent. [...]

I say: this is the *second* way he tries to show the distinction between the two mentioned nexus. He lays it down that, if in a proposition the nexus of the subject to the predicate were the same as the nexus of the predicate to the subject, then the two could not differ in modality. But the consequent is false. The antecedent needs no explanation. As to the falsity of the consequent: this is because one of them may well be necessary and the other contingent. The nexus of the predicate to the subject in the proposition "every writer is a human" is necessary, whereas the nexus of the subject to the predicate is contingent [sc. because it is impossible to be a writer without being a human, but possible to be a human without being a writer].

Someone might say: we do not concede that the nexus of "writer" to "human" in "Every writer is a human" is contingent; rather, this is instead the case with "every human is a writer."

Fine, but what you have mentioned only follows if the nexus of "writer" to "human" in the proposition "every human is a writer" is not [the same as] the nexus to it in the proposition "every writer is a human." This, however, is rejected.²⁴

[Al-Rāzī's] words "Hence, propositions do not retain their modalities when converted" are a pointer to another proof. What he has in mind is that, if the two mentioned nexus were identical, then propositions would retain their modalities when converted. The consequent is false, as you will learn in the chapter on conversion, and hence the antecedent is rejected. It would only be true if the nexus of the predicate to the subject in the original were the same as the nexus to it in the converse, but this is rejected.

24 The point of this bit of dialectic is that an objector says the modal asymmetry is the reverse of what al-Rāzī had argued; al-Kātibī responds by rejecting the modal asymmetry as long as you convert the proposition. (Al-Kātibī himself does still think that the subject predicate relation is asymmetrical: see [T32].)

[T31] Al-Kātibī, *Munaṣṣaṣ*, fol. 53^r17–27

[commentary on T15: criticism of al-Rāzī's idea that only the nexus of the subject to the predicate is part of the quiddity of a proposition]

Then he said: But the nexus which is part of the quiddity of the proposition is the aptitude of the subject on its own for being described by the predicate, while the other [nexus, i.e., that of being a predicate] is external and concomitant [to the proposition].

But this calls for further inquiry, because this means that the nexus which is a part of the quiddity of the proposition is the nexus of the subject to the predicate; as for the nexus of the predicate to the subject, it would be external and concomitant to the quiddity of the proposition. But if anything, it's the other way around. If for example we say "Zayd [is a] writer," then the predicate is related (*yunsabu*) to the subject, not the subject to the predicate. This being so, the nexus (*nisba*) which is part of the proposition is the nexus of the predicate to the subject. The Imām [Rāzī] explained this himself in his commentary to the *Ishārāt!* And how could it be otherwise? For they also say, in the classification of the modalities, that if the nexus of the predicate to the subject is necessary, then the proposition is necessarily true, whereas if [the nexus] is impossible, [the proposition] is not possibly true, while if [the nexus] is neither necessary nor impossible, [the proposition] is contingently true. This will be the case only if the matter is as we have presented it. So we deny that if the nexus of the subject to the predicate is necessary, then the proposition will be necessarily true, because the proposition that is necessarily true is the one whose nexus, which is part of it, is characterized by necessity. What is necessary in the proposition "every writer is a human" is the nexus of the predicate to the subject, which is external to the proposition; that which is a part of it is the nexus of "writer" to "human," and it is contingent. Thus, we reject their argument that if the nexus is neither necessary nor impossible, then the proposition is contingently true. We know this conclusion to hold on the basis of what was concluded when rejecting the first [argument in [T30]].

[T32] Al-Kātibī, *Munaṣṣaṣ*, fol. 53^r27–53^v5

[al-Kātibī's own account: the two nexus are distinct, though each is potentially the same as the other]

In general, this is a topic that stands in need of further inquiry. Look into it yourself and seek the truth about it, and what would offer verification. In my

own view, the nexus of one of the two terms of the proposition to the other as being a subject for it is not the same as the nexus to it as being a predicate for it. If the two nexus were identical, then it would follow that they are also identical in their implications. But the consequent is false, because the nexus of the subject to the predicate as being a subject for it is external to the quiddity of both the basic proposition and its converse. Whereas its nexus to it as being a predicate is internal to the quiddity of the converse, and the nexus of the predicate to the subject as being a predicate for it is internal to the quiddity of the original proposition and its converse. Also the nexus to it as being a subject for it is external to the quiddity of both the original proposition and its converse. Thus the nexus of one of the terms of a proposition to the other as being a subject for it is not the nexus of the other to it as being a predicate for it. Hence, if these two nexus were identical, then there would be no difference between the subject of a proposition and its predicate inasmuch as they are subject and predicate. The consequent is obviously false. But one of these two nexus is the other *in potentiality*, and [in this respect] there is no difference between the two in either quality or modality. Given for example that “writer” necessarily has “human” affirmed of it, “human” is necessarily affirmed of “writer.”

[T33] Al-Urmawī, *Bayān al-ḥaqq*, fol. 13^r9–18

[*binary and ternary propositions*]

The categorical [proposition] is made up of three things: the subject, the predicate, and the nexus by which one of them is connected to the other, in the sense that one is the other, or one is not the other (*huwa huwa aw laysa huwa*). If we conceive of both terms without conceiving of the nexus in the sense just mentioned, then there is no conception of the proposition. Concerning this nexus between them, I mean, between each of [the terms], it is only right that it be signified by an expression, and this expression is “copula.” If it is omitted in some languages or in certain contexts, then this is just shorthand for what in principle ought to be expressed, and it will be grasped fully in the soul. It is omitted on the level of expression only when it can be expected to be understood in the soul, either from a [particular] language or in certain contexts. In that case the proposition is binary on the level of expression. But it is ternary on the level of thought; but if the [copula] is expressed, then it is called ternary also on the level of expression.

[*the copula in different languages*]

The copula is no doubt one of the auxiliaries, but it may be in the form of the hyparctic verbs mentioned earlier, in which case it is called a “temporal copula” because of its signification of tense; or, it may be in the form of a noun (*ism*), like any of the pronouns. Then the copula is—in the Arabic language—a partitive or adjuvative copula which [in logic] is called a “non-temporal copula.” Languages differ with regard to the use of the copula. In Greek it is necessary to mention a temporal copula in all propositions, be they categorical or hypothetical. In Arabic this is only necessary in conditionals like “If the sun is up, it is day (*in kāna al-shams ṭālī’ kāna al-nahār*).” It is not necessary in categoricals like “Zayd [is] at home (*Zayd fī l-dār*),” so the proposition is binary. When we say “Zayd was (*kāna*) free,” then [the proposition] is ternary, and the copula is temporal; when we say “Zayd, he [is] (*huwa*) free,” then the copula is atemporal. In Persian, it is necessary that any proposition be ternary. The copula is either temporal as in “Zayd was (*būd*) a writer” and “Zayd will be a writer,” or atemporal, in which case it may be an expression as in “Zayd is [*has*] a writer,” or a vocalization at the end of the predicate as in “Zayd a writer [is]” [*Zayd dabīr-e*].²⁵

[T34] Al-Urmawī, *Bayān al-ḥaqq*, fol. 13^r18–13^v2

[*Avicenna’s view on when the copula must be made explicit*]

The Master [Avicenna] said in the *Shifā’* that when the predicate is a verb or a derived noun, it is not unlikely that it connects by itself to the subject, as it contains a nexus to the subject. Hence, the need of verbs and derived nouns for a copula is not [the same as] the need of non-derived nouns [for it]. Then he said that the verb and the derived noun do indeed signify a nexus to a subject, but they do not signify a nexus to a *determinate* subject. All that is needed is something that connects the predicate to a subject: the temporal copulae in Arabic do not signify a nexus to a determinate subject, only non-temporal copulae do that. Since the latter do signify a determinate subject, [Avicenna] distinguished three classes of propositions. *First*, complete ternary, in which a nexus to a determinate subject is signified, like the propositions in which there is a non-temporal copula. *Second*: incomplete ternary, in which an indeterminate subject is signified, like when the predicate contains a verb or derived noun

25 Medieval Persian used a final *kasra* for what became the colloquial ending *o-* (“he/she is”) in modern Persian.

which includes, as mentioned, a temporal nexus. *Third*: binary. It is on this basis that we are to understand his remark in the *Ishārāt*, where he said that when we say “Zayd [is] a writer (*Zayd kātib*)” one [really] ought to say “Zayd, he [is] a writer (*Zayd huwa kātib*),” so as to specify the nexus. He had explained that the nexus needs to be specified; but the need of verbs and derived nouns [for a copula] is not the [same as] the need of non-derived nouns, for there is nothing in the [latter] that signifies a nexus. The Imām [al-Rāzī] falsely assumed that this was different from what [Avicenna] said in *al-Hikma al-mashriqīyya*, [namely] that the verb implicitly signifies the nexus to the subject. But I have ascertained that the two [passages] agree and there is no difference between them.

[on al-Rāzī’s repetition argument]

The Imām [al-Rāzī] said in his books that if the predicate is a verb or a derived noun, then the proposition is in reality binary, because the nexus is signified implicitly, and it is not permitted—on pain of repetition—to mention it separately. And if [the predicate] is a non-derived noun [says al-Rāzī], then it is in reality ternary. On the basis of what you learned this is a weak argument. In the commentary on the *Ishārāt* [al-Rāzī] acknowledges that the verb only signifies the nexus to an indeterminate subject. Indeed, he said that when we say “Zayd writes,” the expression *huwa* [“he,” which serves as the copula] is hidden at the end of the verb—“concealed in it” as the Arabic grammarians say. So if we were to also place it in the middle, then we would have to say “Zayd, he writes, he (*Zayd huwa kātib huwa*).” And because of this particle, the Imām believed that a repetition would follow.

I say: repetition will result only if both expressions, the *huwa* in the middle and *huwa* at the end, are copulae; but this is not so, according to the Arabic grammarians. Rather, the one at the end is an agent-noun, while the one in the middle is a copula. There is no disagreement that the one at the end is a noun, but they do differ with regard to the one in the middle, as some [grammarians] say it is a noun, others that it is an auxiliary. There appears in the glorious Qur’an a mention of the copula together with a predicate containing the nexus. This is in the words of the Exalted: “when you took me up, you were the observer (*kunta anta al-raḡiba*) over them” (5:117). Since [“observer”] is put in the accusative, the analysis given to this by the grammarians is that the verb alone is not a predicate. Rather, the verb and an agent-noun in the accusative imply this together, even if this does not signify a determinate subject on its own.

But this is a linguistic question. For the logician, it is only necessary to mention whatever signifies a determinate subject: if the verb and the derived noun sig-

nify a determinate subject, then it is not necessary to mention the copula, and if not, then it is necessary to indicate it. [13^v] The temporal copula may be used for what is not temporal, as in the words of the Exalted: “God is [literally ‘was,’ *kāna*] compassionate and merciful” (4:96), as well as for what has no specified time, like when we say “Every three is odd” and “Every four is even.”

[T35] Al-Urmawī, *Bayān al-ḥaqq*, fol. 13^v2–11

[*are there two distinct nexus in a categorical proposition?*]

The nexus of one of the terms to the other as being a subject for it is not [the same as] the nexus to it as being a predicate for it. Otherwise, the proposition would be the same as its own converse. Also, the two [sc. the nexus in the original proposition and its converse] do not imply one another. For they may differ in quality: “every human is an animal,” but not “every animal is a human”; and in modality: “every human is *possibly* a writer,” but “every writer is *necessarily* a human”; or “nothing that is a moon is eclipsed at daytime,” but “nothing eclipsed at daytime is a moon.” The difference is [clear] in every proposition that does not convert, and every proposition whose converse is not of the same kind as it. Furthermore, the nexus of one of the two [terms] to the other by subject-hood is not [the same as] the nexus of the other to it by predicate-hood. As for the quality, this [sc. the difference between subject-hood and predicate-hood] is evident, because if A is a subject for B, it is impossible that B not be a predicate for A, no matter whether the subject-hood [of A] is affirmative or negative. As for the modality, it has been said [by al-Kātibī] that when A has B affirmed of it necessarily, and B is affirmed of A necessarily, then it is impossible that the two differ in modality.

But this calls for further investigation. If the subject is more specific than the predicate, like “human” and “animal” for example, then “human” has “animal” affirmed of it necessarily, whereas “animal” is not necessarily affirmed of “human” [sc. because some animals are not humans]. This is with a view to their essences. But with a view to taking something concrete and predicating for it concretely, like “This human is this animal,” here it is necessary that both of the two nexus be necessary, or non-necessary; there can be no difference between them.

The Imām [al-Rāzī] said: the nexus of one of them to the other by subject-hood is not [the same as] the nexus of the other to it by predicate-hood (cf. [T15]). It is because of this that the proposition does not preserve its modality in con-

version. But this is unconvincing. For subject-hood and predicate-hood differ in the converse [of the proposition].

[T36] Al-Ḥillī, *Marāṣid*, 131.8–132.8

[“*proposition*” cannot be defined but it can be picked out from other, similar things]

“Proposition,” “assertion” and “declarative sentence” are synonymous expressions, and are known with no need for definition. They have been defined as follows: “they are that whose speaker may be said to speak truly or falsely.” Or it might be said: “it is speech allowing for truth and falsehood, deeming true and deeming false.”

But these definitions are not free from circularity, for truth and falsity are essential accidents of an assertion, and it is impossible to know either of them without grasping their definition. [132] This may be mitigated by saying that that which needs no definition suffers from some similarity causing it to be confused with something else, which is known to share something in common with it. When one distinguishes it [from this other thing], one arrives at knowledge of it, albeit that this differs from [a proper] definition (*taḥrīf*). Therefore, the goal is not to define (*taḥdīd*) it, but to disentangle (*takhliṣ*) it from what is like it, [grasping it] specifically. This [distinguishing feature] is the essential accident, which needs no [further] explication: mentioning it for the sake of distinguishing [the undefined item] is primary. So mentioning truth and falsity, so as to distinguish the assertion from other types of composite item, is not absurd.

Let it not be said: some assertions are known to be true, others known to be false, so neither “allows *both* truth and falsehood,” so they do not fall under “assertion-hood” [as defined above]. *For we say:* allowing for (*iḥtimāl*) the expression (*i’tibār*) of [one] form [e.g. falsehood, in the case of a true proposition] is not inconsistent with necessarily having the other mode [e.g. truth].

[T37] Al-Ḥillī, *Marāṣid*, 134.11–137.4

[*the role of the copula and linguistic diversity*]

A proposition is completed by three things: the subject, the predicate and the nexus between them connecting them [by expressing] that the subject is the

predicate, or that it is not it. If we were to conceive the two terms without the nexus, [135] then in that case they would not be made a predicate and a subject. So there is a third meaning distinct from the two terms, and it is only right to signify it by a [separate] utterance, which is called the copula, either in the form of a noun (*ism*), like “he” (*huwa*), or of a verb, like “exists-as” (*yūjadu*). It may be omitted in some languages, and then the proposition is called binary; with [the copula], it is called ternary. Languages differ in this regard: in Greek it is necessary [to use] a temporal copula, whereas in Arabic this is necessary only in connective [propositions], while in Persian the copula is always necessary.

[*binary vs ternary propositions, cf. T17*]

When the predicate is a verb or a derived noun, it has no need for a copula other than itself, though inevitably a copula is involved. The pronoun hidden in it signifies only an indeterminate subject, and a copula would be needed only to determine [the subject]. The proposition will therefore be either a complete, ternary one, that is, one that is connected by a non-temporal copula; or an incomplete ternary one, that is, one connected by a verb; or the predicate in it is a verb or derived noun [so that there is an implied copula]; or [the proposition may be] binary, that is, when the auxiliary is omitted. It has been claimed that verbs do signify a determinate subject, along with the pronoun hidden at their end, which goes back to the preceding grammatical subject. But this is a linguistic controversy.

[*atemporal propositions, cf. T35*]

The temporal copula may be used for something that is not temporal, like when we say “God is [literally ‘was,’ *kāna*] compassionate and merciful” (4:96), and “every three is (*yakūnu*) odd.”

[*not one nexus but two, cf. T32, T35*]

[136] The subject has a nexus of subject-hood to the predicate, and the predicate has a nexus of predicate-hood to the subject, and these two are distinct yet inseparable. If the subject is such that the predicate is affirmed of it necessarily, then the predicate is like this [sc. necessary] in being affirmed of the subject. So it is impossible that the two differ in mode or modality, and each of them is in the potentiality of the other. The nexus of each one of them to its companion is not the [same as] the nexus of its companion to it. Otherwise the initial [proposition] and its converse would amount to one and the same thing, but this is false, because they do not mutually imply or agree with one another. So how could they be the same?

[modality and the place of the copula]

The natural place for the copula is between the two terms, because it signifies the nexus between them. You should know that every nexus inevitably has one of the modalities (*kayfiyya*): necessity, contingency, and impossibility. When [the modality] is mentioned, then the natural place for it is to be next to the copula, because it is a quality (*kayfiyya*) of it, just like the quantifier is next to the subject. Even if the quantifier is a part of the proposition on the level of language, it is not a part of the proposition on the level of thought (*ma'qūla*). For it is nothing but an utterance signifying the extension of the individuals of which the predicate is affirmed: that extension is the subject. But in reality this [extension] is not different from the subject. Things are different with the copula and the modality. This is why they did not classify the proposition as being quinary [i.e. as involving not just subject, predicate, copula, and modality, but also quantifier].