Nine

THE SYMBOLIZATION OF VALUE

Demonstration is based on notions, not on notations.[1] Karl Friedrich Gauss, said with reference to Waring's theorem.

This chapter will consider another form of ethical theory that is not so much inadequate as illegitimate. It does not deal inadequately with reason but *illegitimately uses reason.* Its defect is not only in employing analytic rather than synthetic concepts, but, in addition, in employing synthetic concepts in an arbitrary and illicit manner—in applying unexamined synthetic formulae to equally unexamined analytic material.

1. The Transposition of Synthetic System and Analytic Reality

The creation of a science is only possible if the thinker steeps himself in the subject and concentrates the infinity of its significations in one infinitesimal core.[2] The symbols arising out of such a concentration prove their correctness by the facility[3] with which they fit their phenomena, their systematic-empirical import. The formal procedure thus presupposes profound empirical insight, and the empirical insight a lofty formal structure. For this reason, mathematics has the peculiar capacity observed by Alfred North Whitehead and called by him the most impressive feature of modern science: to be at the same time most abstract and most concrete.[4] For this reason also, the analytic procedure is inadequate; it is based on common sense and hence lacks the innermost phenomenal penetration. The creation of a science, thus, presupposes a kind of thinking profoundly different from analytic common sense thinking. It is in one sense, more deeply material, for it delves into the depth of the subject matter, and, in another sense, completely nonmaterial, for it leaps up to the stratosphere of formalism. It thus seems to disregard completely the common sense sphere of thought, both undercutting it in depth and overarching it in height. It is like an oscillating current enveloping but never touching the wire that conducts it. The synthetic concept is thus like a field of force surrounding the analytic one.

In ethics, this kind of thinking is extremely rare. The use of reason here revels in everyday thought and language, mixing up, in the process, ethics with its own subject matter, morals. It is therefore equally important to speak of the use of reason in *ethical* thinking—in ethics—as to speak of it in *moral* thinking, the subject matter of ethics. Both the moral agent and the ethicist must be rational.

In the preceding chapter we saw that ethical analytic thinking is inadequate when applied to the use of reason in *moral* thinking. In this chapter we shall deal with the inadequacy of analytic reasoning in ethics itself. Paul W. Taylor and A. C. Garnett tried to account ethically for the use of reason *by the moral agent*, the

subject of ethical theory: Taylor discussed the justification of the moral use of reason by ethical theory; Garnett used rationality as an element in the ethical definition of the fundamental moral concept, goodness. Both proceeded in a common sense manner, with explicit reference to, and basing themselves upon, everyday language.

We shall now turn to illegitimate uses of reason in *ethics*. The endeavor of the ethicists discussed in this and the following chapter to clarify ethics by logic is praiseworthy; but the ethics to which they apply their formalism is not of the kind to which formalism can be applied. It consists of everyday analytic concepts. In applying the power of theoretical "scientific" devices—symbols, statistics, and so on—to such concepts, these ethicists are wrong in a more powerful and definite way than the analytic ethicists who content themselves with the second level of value language. They are, so to speak in the antechamber of the scientific tabernacle, free to enter it or not; but the pseudo-scientific ethicists have already stepped through the wrong door and find themselves in a labyrinth, the only way out of which would be to retrace their steps, recognize their mistake, and start all over again, something no self-respecting philosopher can do unless he is a true scientist like the Aristotelian professor who set out to write an attack against Galileo and, after studying Galileo's theory, wound up writing a defense.

It is illegitimate, thus, to apply "scientific" reasoning to common sense data. Scientific reasoning, as we have seen, is formal and material, theoretical and empirical. The two aspects of science cannot be separated, unless the organic structure of science is violated. For, as we have seen, theoretical reason has no basis without empirical foundation, and empirical foundation no organization without theoretical reason. Theoretical and empirical import belong together. Thus, to separate either the one or the other aspect of the scientific activity and relate it—not to the other aspect but to some third and extraneous entity, for example, the non-scientific material of *analytic* thought—is like transforming heads and bodies. The result is more likely to be a monstrosity than the delightful solution of Thomas Mann's tale.We cannot just borrow one phase of the oscillation that is science and apply it to the wire. The result will not be a current but a dud.

Some such experiments happen to exist in present-day moral theory. They are based on the faulty empirical views, Wittgensteinian and others, that were discussed in a preceding chapter. Instead of penetrating to the core of the moral experience, as the true empiricist would, these empiricists take for granted what common people say in a common sense way about value. They apply to this common sense material the procedures of theoretic-empirical science, either "theoretically," by devising a symbolism that is supposed to account for this material, or "empirically," by applying to it statistical methods such as rating, scaling, classifying, and so on, and proclaiming the results as insight, not into the frequency of popular rhetorical occurrences, but into the *meaning* of the phenomenon that people talk about, and that is supposed to be what people think it is. This is as if Galileo,

when investigating the phenomenon of motion, had organized a poll and tabulated the answers as an insight into the phenomenon of mechanics.

The result of such procedures, either "theoretical" or "empirical," cannot but be illegitimate; for if science is the combination, the linkage between theory and practice, both welded into one by the essential nature of the phenomenon, then it is unscientific and indeed nonsensical to apply symbolic form to the common sense content, or to produce a statistical or similar theory out of it. The common sense material and its analytic concepts can serve only as stepping-stones for new synthetic insight and must be discarded and replaced by synthetic extension as soon as the theory is created. To combine *on principle* analytic extension and synthetic intension, and call it either a new science or a new logic, is to call a centaur either a racehorse or a sage.

The only legitimate content of scientific theory is the corresponding synthetic reality.[5] Where there is no such reality, and the old common sense material is used as content, we have a pseudo-form with a pseudo-content; a procedure methodologically identical with that of the alchemists, who used a pseudo-form, such as Pythagorean numbers, and applied it to pseudo-material—concoctions of all kinds—human hair broiled with onions at midnight, and so on. The alchemists also produced fancy concepts, such as "Fountain of Youth," and "Philosopher's Stone" in order to account for their pseudo-operation in terms of a goal which they darkly divined, and which was eventually to be reached by science: health through chemotherapy, and the transmutation of elements through chemistry. For a clear and simple discussion of the scientific nonsense of alchemy, see Henry M. Pachter, *Magic into Science: The Story of Paracelsus*.[6]

The following two chapters, then, will consider exercises in something we may call axiological alchemy, first in its Pythagorean, then in its Paracelsian aspect. This will teach us the difference between illegitimate and legitimate "scientific" procedure in value theory. Illegitimate procedure is based on identifying common sense discourse with the nature of things; legitimate procedure, derived from G. E. Moore, is based on penetrating to the essence of the subject matter. We shall see how simply and elegantly formal axiology solves problems otherwise extremely involved and indeed unsolvable.

We shall first examine an illegitimate and incorrect application of symbolic formalism to ethical material not properly prepared for such application. A text of recent ethical literature that continues our discussion about the nature of "rationality" and "ought" is Everett W. Hall's work on the syntax of value sentences and the symbolic rendering of "ought."[7] Again we shall see how very close analytic thinking comes to the synthetic solution, and yet how infinitely far it is from it.

In the light of G. E. Moore's analysis, scientific ethics must be based on the nature of good; all ethical terms, including "ought," must be deduced from it. From the point of view of scientific ethics in the Moorean sense, basing axiology on "ought" rather than on "good" is a wrong choice. As long as Moorean axiology does not exist and cannot demonstrate its efficiency, there are only intuitive rea-

sons for preferring "good" to "ought" as the value fundamental. Yet, the history of the two terms ought to warn any inquirer earnestly interested in the rational understanding of moral phenomena against deciding for "ought." "Good" has its origin in the clarity of Platonic rationality which, in the hands of Kepler, led to modern science. "Ought," has its origin in the "noumenal" *tour de force* of Kant; it is steeped in irrationality. The choice of either one or the other, thus, already gives an indication of a writer's axiological direction. The difference between the two ought, from the beginning, to direct a writer's axiological choice.

The more rationally inclined writers are, the more they will tend toward "good"; the less rationally inclined, the more they will tend toward "ought." Garnett makes the rational choice and attempts to derive "ought" from "good" by an additional rational postulate; but Hall makes the irrational choice and attempts to derive "good" by a pseudo-rational postulate from "ought." That on the basis of fundamentally so irrational a procedure he arrives at a structure of value so close to—indeed only a hair's breadth removed from—so rational a position as that of formal axiology, is an extraordinary achievement. It is no less an achievement to arrive, on the basis of fundamentally so rational a procedure as that of formal axiology, at a structure of value only a hair's breadth removed from that of Hall. The difference is that formal axiology is capable of solving clearly and consistently what for Hall, admittedly, are insuperable problems. The hair's breadth thus covers an abyss—that between analytic and synthetic procedures.

Hall's term "teleologists" does not adequately cover all those who start with "good" like Plato, Plotinus, Spinoza, and many others whose "good" is by no means teleological. Oliver A. Johnson has written a well-balanced discussion of teleology and deontology.[8] The issue between the partisans of "ought" and those of "good"—the deontologists and the axio-ontologists, as we may call them—will never be resolved until and unless either explicit axiologies are constructed on both bases and their mutual advantages and disadvantages compared in the way we saw axiologies must be compared,[9] or else at least one such axiology is constructed and applied to the problems encountered by the other. Since we are fortunate enough to possess in formal axiology such an instrument of criticism, we can apply it to a significant aspect of Hall's deontological position.

We shall in this way continue the discussion of "ought" begun in the previous chapter. Garnett's position is opposed to that of the deontologists, at least in certain important respects, and close to my own. His insistence on the rationality of the ethical enterprise and on the primacy of "good" over "ought" are both sides of one and the same coin. He chose the rational way in ethics. While "ought" as the bearer of "good" corrupts "good" and afflicts it with all the weaknesses of which "ought" is heir, due to its Kantian origin, "good" is free from the irrational weight of "ought." See A. C. Ewing's many attempts to define "good,"[10] which is a rational and indeed logical concept, as Ewing indicates; but Ewing did not realize that "ought" can be logically defined.[11] "Good" can serve as a basis for the rational and even logical definition of "ought." Garnett divines this, even though

he falls victim to the snare of the "ought"—its "imperative," "commanding," "attitudinal" aspects[12]—and disentangles himself only with great difficulty from the mesh by cutting through it with the edge of his definitional element "reasonable." Unfortunately, this Gordian stroke results in an even worse tangle, and the loose ends threaten to become a Hydra that devours all rational possibilities.

The only way out is the one I have taken, to throw overboard the entire "normative" apparatus, start all over again with a clean slate, and define "good" in a way that removes it from the controversies of the schools and makes it capable of solving their problems. To do so it is not necessary—although it is possible,[13]—to follow the present-day fashion in ethical theory and take our cue from the *Oxford English Dictionary*,[14] but we may take it more appropriately from value theory and the nature of axiological reality as divined by G. E. Moore. The resulting formal definition is capable of being applied impartially to all the warring schools. To apply it to Hall, after having applied it to Garnett, will further demonstrate the systematic-empirical import of my method.

Since, as we have seen, the proof of a value theory is in the application, as that of a pudding is in the eating, let us first apply formal axiology to Hall's theory. Then, Hall's attempts to solve a specific problem with his theory will be compared with the application of formal axiology to these problems.

2. Analytic and Synthetic Formulae: "Exemplification" and Intensional Fulfillment

Hall tries to "get at" the nature of value reality "through the structure of value sentences."[15] His "programme" is to treat "all value-predicative sentences of ordinary speech as disguised and incomplete normative sentences."[16] Hall explains,

> Value-predicative sentences in ordinary speech having the form '*a* is good,' where '*a*' is the name of a particular, are incomplete in their value-component in a way which can be expressed by the use of a variable, '*a* is good' thus being properly rendered 'There is a property, *X*, such that it were good that a exemplify *X*.' Now this last sentience, it seems to me, is as it stands a perfectly good normative. It would probably seem more acceptable, as driving the full sense of '*a* is good,' than, for instance, 'There is a property, *X*, such that a ought to exemplify *X*'; but this I think is mainly because the value-requiredness in it is less harsh ('it were good that' is a softer expression than 'ought to')....We may then preserve and even I think clarify the meaning of such everyday expressions as '*a* is good' (here '*a*' names a particular) by replacing them by a conjunction similar to 'There is a property, *X*, such that *a* ought to exemplify *X* and *a* does exemplify *X*.'[17]

Let us first see how Hall arrives at this formula for "*a* is good," and then what it means. Hall arrives at this formula by the following four-step argument,

where each succeeding step is supposed to be identical in meaning with the preceding: (1) "*x* is good," (2) "it is good that *x*..." (3) "it were good that *x*" (4) "*x* ought to..." Let us see how legitimate this sequence is.

(1) Hall begins his argument with the insight common to all axiologists, that "*x* is good" means more than it shows. What it does not show, according to Hall, is (a) a property which is "a specification of the respect or respects in which John is said to be good,"[18] for example, "kindly," and (b) some normative sentence; for sentences of the form "John is good" are "incomplete normatives."

> For some reason, be it commendable social discretion or reprehensible personal laziness, we do not in such cases want to formulate the whole normative sentence. We omit, as the case may be, the subject or the predicate. To make it appear that we have a full sentence we throw the whole into an apparently declarative form with a value-term as predicate.[19]

Hall then combines "John is good" with "John is always kindly" in such a way that, through the sequence of the four propositions mentioned, there arises "John ought to be kindly." The first step is the identification of "John is good" with "It is good that John is always kindly." Hall says, "It would then not seem too inappropriate to claim that 'John is good' in this situation was elliptical for 'That John is always kindly is good' or 'It is good that John is always kindly.'"[20]

This identification, obviously, is crucial, not only for Hall's argument, but also for whatever axiological position he claims. For if "*x* is good" is identical with "it is good that *x* is ..." then, if this is to mean more than "it is good that *x* is good" and hence "..." stands for an attribute other than "good"—the equivalence means committing the naturalistic fallacy. For, the goodness of *x* would be identified with the goodness of *x*'s having any property other than good, such as kindness or pleasantness; and this identification is one aspect of the fallacy in question.

For a value theory to propose "programme" of this sort is certainly no trifle. To do so without any examination, in the very heart of the argument, seems to be less than "analytic," except in my own sense if the word, which means lack of penetration. Hall skips over all the fundamental questions connected with this identification by saying "it would not seem too inappropriate," but in the light of formal axiology, it would. Not only is there a definite logical[21] difference between "*x* is good" and "it is good that *x* is...," a difference which is obvious even to common sense inspection, there is also the profound axiological difference mentioned. Identification of the two expressions means that the goodness of *x* may be identified with the goodness of *x*'s having any property whatsoever: "*x* is good" may mean "it is good that *x* is ϕ" where "ϕ" stands for any property. Thus, "*x* is good" may mean "it is good that *x* is kindly," but it may also mean "it is good that *x* slits throats," "it is good that *x* vomits," "it is good that *x* is a square root," and so on. Thus, not only does the identification commit the naturalistic fallacy, it does

not even set any limit as to the property other than "good" that x has to have for x to be good. This first step, then, is so vague as actually to be meaningless.

Hall's analysis at this crucial point is much more obscure than Moore's, who at least made "good" dependent on the natural properties of the thing that is good. And it is much more vague than my own theory, which defines Moore's and determines in detail the property ϕ that x must possess in order to be good, namely, the intensional properties of the class of which it is said to be a good member. It is difficult to escape the conclusion that Hall's first step—saying that "x is good" is equivalent to "it is good that x is ..."—is logically false, axiologically illegitimate, and actually meaningless.

(2) The second step compounds these errors. Hall now identifies "it is good that x is..." with "it were good that x be..."; and he does so for the peculiar reason of showing "value-assertiveness as different from factual assertiveness."[22] The sentence, "It is good that John is always kindly,"

> apparently asserts, besides a value, a fact, namely that John is always kindly. I do not wish to dispute this. It may well be that every value predicative sentence similar to 'John is good' (in hiding or suppressing its real predicate) is in part an elliptical factual assertion. But if so, we may set this factual element aside, for clearly it is not all. The value-predicative sentence is also a value-sentence, and it is this that we are trying to analyze. Let us put this component in the subjunctive form, not meaning thereby to indicate anything contrary-to-fact, but just value-assertiveness as different from factual assertiveness. In the situation considered above, 'John is good' is, in respect of its value-component, elliptical for 'It were good that John be always kindly.'[23]

First of all, there is no reason why "it were good that x be..." should be a value assertion except on the basis of Hall's assumption that (a) value is normative and (b) "it were good" and so on are normative expressions. But on this basis, this step is superfluous, for it begs the question; and since there is no other basis for this identification, it is arbitrary and erroneous, as was the first. Again, there is a fundamental logical difference between "It is good that John is kindly" and "It were good that John be kindly," which is obvious to common sense inspection, and which Hall introduces by a kind of sleight of hand, by exploiting the vague similarity between "different-from-fact" and "contrary-to-fact." A fundamental axiological significance exists in this substitution of subjunctive for indicative, but it is not the one that Hall had in mind. Hall introduces the "valuative form of contrary-to-fact conditional"[24] in order to account for a phenomenon that puzzles him greatly and which we may call the Cheshire-cat nature of fact and value: the value may exist without the fact, as the grin may exist without the cat.

> Let us recall what is needed. It is held that value is a property of facts. Yet it is recognized that in some sense it is independent of facts, can obtain when the appropriate fact does not exist, and can be asserted without the assertion of the correlated fact. It is to mitigate this paradox that appeal is made to contrary-to-fact conditionals, to sentences of the form 'If a were *A* it would be good' or 'If a's being *A* were the case, that (state of affairs) would be good.' Here 'good' appears to function as a predicate whose subject is a reference to a state of affairs that does not exist.[25]

Hall is led to this Lewis Carollian construction by his pseudo-ontological view of value. Value "is" and fact "is," but the ways in which they "are" is a mystery. They somehow belong together and they somehow don't; and by introducing the "valuative form of contrary-to-fact conditional," Hall somehow tries to "mitigate" the "paradox" in an attempt to have his factual cake with or without its valuational icing, and the icing with or without the cake. To use the context of Alice in Wonderland, he tries to go in both directions at once, or in neither since both, fact and value, are unknown.

> 'Would you tell me, please, which way I ought to go from here?'
> 'That depends a good deal on where you want to get to,' said the Cat.
> 'I don't much care where,' said Alice.
> 'Then it doesn't matter which way you go,' said the Cat.
> '—so long as I get somewhere,' Alice added as an explanation.
> 'Oh, you're sure to do that,' said the Cat, 'if you only walk long enough.'[26]

In my analysis, the question whether value can appear without fact or fact without value is as meaningful or as meaningless as the question whether the convex can appear without the concave or the concave without the convex, or, to remain in the *Alice in Wonderland* context, whether the Cheshire cat is mad because it growls when it is pleased and wags its tail when it is angry, or whether the dog is mad because it growls when it is angry and wags its tail when it is pleased. Actually, the question is meaningless; for it presupposes the previous determination of the ways fact and value "are." For me, they "are" not at all: they are two among an infinity of aspects in which any datum can appear (another such aspect, for example, would be the musical).

The totality of these aspects, as we have seen above, is value. Fact is one specific value property broken down into primary value properties, which are called "descriptive" properties. Inversely, then, value is the quantification of descriptive properties. It is then possible for value to appear without fact, or for fact to appear without value.[27] If a value property is the quantification of the descriptive properties of a thing, and the thing and its descriptive properties are fact, then value by itself would be the quantification of the descriptive properties without the

thing. Language has an ingenious means of expressing such mere value: the metaphor.

A metaphor is a set of descriptive properties without its referent, and hence applicable to anything. It is, in other words, pure intension. A metaphorical peach is the set of peach properties, or the peach intension, applicable to anything. A peach of a girl, a peach of a car, a peach of a dog are such applications. If a girl, a car, a dog are, descriptively, members of their respective classes C with their respective sets of class properties, ϕ and a peach is a member of its class, D, with *its* set of class properties, ψ, then in a peach of a girl, the girlishness ϕ of some girl x has been imbued with peachiness, ψ, which means that the girlishness of x is peachy, or x is a peach of a girl. This may be signified by $\psi(\phi x)$. Since, theoretically, any intension may serve as a metaphor, any name, as pure intension, may serve as a value property for any combination of intension and extension, that is, for any other name both signified and exemplified. This means that the language of metaphor is (1) the language of pure intension without extensional reference, and (2) the language of pure value without factual reference. If descriptive language is a denumerable infinity of elements ($\aleph_0$), then metaphorical language is a non-denumerable infinity of elements ($\aleph_1$), since each of its denumerably infinite elements has denumerably infinite applications, and $2^{\aleph_0} = \aleph_1$.[28]

Hall's substitution of subjunctive for indicative does not have the axiological significance for me that it has for Hall. But it has another significance, which makes this substitution not irrelevant—but illegitimate. The substitution is made in order to show the difference between "value-assertiveness" and "factual assertiveness." Presupposed is that "John is kindly" is factual assertiveness"; but this seems obviously erroneous, for a person that is "kindly" clearly is a person who possesses value. The vagueness of Hall's analysis and his identification of the valuational with the normative makes him overlook the obvious value character of value-predicates other than "good" and gives him no criterion to differentiate between them, even if he would recognize them as value predicates. Although this second step in the argument presupposes a criterion for distinguishing between value predicates and factual predicates, Hall's doctrine lacks such a criterion.[29]

The second step in Hall's argument also vitiates his final formula, for the "property" that John ought to and does exemplify in order to be good may be a value property as well as a factual one. In Hall's example of kindliness, it actually is a value property, and this destroys the whole distinction on which Hall bases his analysis. Rather than "specifying" the value property "good" by a factual property, he "specifies" it by the property "kindly," which has the same shortcomings as "good" itself, according to Hall's analysis, namely, being a value predicate. Thus he explains *ignotum per ignotius*. His second step not only compounds the error of the first, but is itself both logically erroneous and axiologically illegitimate.

(3) The third step is the identification of "it were good that" with "ought to." Again, this is neither explained nor analyzed, except by saying that "'it were good that' is a softer expression than 'ought to'" and that it is "less harsh." But what

"softer" and "less harsh" mean logically—and the "programme" is supposedly based on the logical structure of value sentences—is nowhere explained, nor could it be, for these are logical terms. They are typically analytic expressions, in my sense of the word, which means synthetically or logically meaningless. Axiologically, the identification is false for, as we have seen, "ought to" is equivalent to "it is better that." If Hall wants to establish that it is equivalent to "it were good that...," he would have to demonstrate this logically and within a coherent and explicit pattern. As it stands, the third step cannot be regarded otherwise than as logically meaningless and axiologically false.

The whole sequence, then, is one of non-sequiturs. It is based on apparent identities of "good"-expressions, without analysis of the logical context in which "good" appears. It strings together entirely different meanings, such as "is good," "it is good that," "it were good that" either without examining, or by examining in a bizarre manner, the logical and axiological relationships between these expressions. It is thus a typical example of an analytic as against a synthetic, a "common sense" as against a scientific, argument. It is difficult to see in which respect, methodologically and logically, this is different from Francesco Sizzi's argument against Galileo's moons of Jupiter.[30] What for Hall is the common sense word "good" for Sizzi is the common sense word "seven." Sizzi's argument was based on apparent identities of "seven"-expressions without analysis of the contexts in which "seven" appears. It strings together entirely different meanings, such as "seven windows in the head," "seven metals," "seven days of the week," "seven planets" without examining, or by examining in a bizarre manner, the logical and scientific relationship between these expressions. It is thus a typical example of an analytic as against a synthetic, a "common sense" as against a scientific argument. Sizzi used the number "seven" analytically and not, as Galileo did, synthetically; and Hall uses the axiological term "good" analytically and not, as is done in formal axiology, synthetically. Thus, his argument is an example of what I call axiological alchemy or astrology.

Adding to this uncritical use of "good"-expressions, in the second step—Hall's identification of value terms with factual terms—it is difficult to see why the whole argument has been undertaken and why Hall did not simply, as did Garnett, in a similar case, rather than deduce or try to justify—just posit "*a* is good" as meaning the formula "There is a property *X*, such that *a* ought to exemplify *X*, and *a* does exemplify *X*." As a deduction or an argument leading from "*a* is good" to this formula, the steps of Hall's argument are not only superfluous—for they are based on the premise that is supposed to arise as a conclusion, that the valuational is the normative—but also damaging to his thesis, for their own errors illuminate the illegitimacy of this premiss.

All three steps are faulty with respect to the distinction between fact and value. The first statement, in particular, "*x* is good" is a genuine value sentence, and it is elliptical, not because it omits a normative sentence, but because it conceals a series of purely logical propositions, as I have shown elsewhere.[31] Hall's

argument is not suitable for justifying the assumption that this expression is normative, for its normativity arises only through the faulty steps in question. This proves *a contrario* that declarative sentences may be as valuative as normative ones, and normative sentences as factual as declarative ones. "John is good" is a value sentence with a fact copula; and "John ought to tie his shoes" is a fact sentence with a value copula. In the terminology of formal axiology, the first is a mixed logical, and the second a mixed axiological, proposition.[32] Unless formal axiology's fourfold divisions of value propositions into pure logical, mixed logical, mixed axiological, and pure axiological is made, it is difficult to see how order can be brought into the relation between factual and valuational sentences. Simply identifying normative "ought"-sentences with value, and "is"-sentences with fact, and trying to convert "is"-sentences with value predicates into normative ones, leads to the confusions just discussed.

In terms of formal axiology, factual sentences are pure logical, "*x* is *C*," and value sentences like "*x* ought to be good" are pure axiological ones. In between are mixed logical (logico-axiological) ones like "*x* is good," and mixed axiological (axiologico-logical) ones like "*x* ought to be *C*." Using fact-value terminology, we could say that the first are purely factual, the second purely valuational, the third factual-valuational, and the fourth valuational-factual. But these are typically vague material terms that mean little.

In Hall's "philosophical analysis," only what I call axiological propositions —those with the copula "ought"—are valuational; and he has to twist language in order (a) not to exclude mixed logical and (b) to include mixed axiological propositions. The result is (a) the sequence we discussed and (b) absurdities, such as regarding miscellaneous imperatives like "Run!," "Smoke!," "Brush our teeth!," and the various forms of Donald's wearing or not wearing, having to wear or not to wear, oughting to wear or not oughting to wear rubbers—as relevant to the nature of valuation. The analysis of these and other forms of "imperative logic" are examples of what I mean by axiological alchemy.[33]

Linguistic expressions are valuationally relevant not merely by their structure but by their structure as expressing a materially discerned value phenomenon. Lacking such phenomenal penetration, mere structure is apt to lead astray. Before we examine this in detail, and thus enter into the essence of this kind of "normative" approach of which the errors discussed so far are only manifestations, we must examine Hall's "programme" itself and see what, independent of its "deduction," it says and how it relates to formal axiology.

Let us take Hall's formula for "good" at face value: "*a* is good" means "there is a property, *X*, such that *a* ought to exemplify *X*, and *a* does exemplify *X*." As it stands, this may mean anything. For example, "John is good" may mean "There is a property, 'bow-legged,' such that John ought to exemplify 'bow-legged,' and John does exemplify 'bow-legged.'" As such, this formula is too wide and hence useless, at least for axiological purposes, but not for epistemological ones.[34]

Yet, it may be specified in an axiologically valid sense. First, it must be formulated so as not to commit the naturalistic fallacy. Instead of defining "*a* is good," it must define "*a* is a good *A*." The property *X*, instead of being anything whatever, is then the class-property of *a*, namely *A*; and "exemplification" is class membership. "Ought," which is an undefined term, must be replaced by "is." The result is the axiom of formal axiology in its originally proposed form, namely, "'*x* is a good *A*' means '*x* is a member of *A* and has all the intensional attributes of *A*.'"[35]

The axiom of formal axiology is then a specification of Hall's vague statement. It is the formulation of its analytic content in synthetic form: in terms of strictly logical relations. Hall's formula, in this logical specification, is the analytic "ought" form of my axiom: "'*x* is a good *A*' means '*x* ought to be a member of *A*, and *X* is a member of *A*.'"[36] In this specification, what Hall defines is not "*x* is good" but "*x* is a good *A*." Actually, there is no expression "*x* is good" which does not mean, for Hall, "exemplification" of some property, only that, in his formulation, this does not mean anything logically. In my specification, it does: namely, what it usually means in logic, class-membership. Thus, "Socrates is good" does not any more mean, as for Hall, "Socrates ought to be and is anything (valuational?)" but "Socrates is a member of *A* and has all the intensional properties of *A*."

Hall's formula is in some respect very close to mine. It approaches the logical formulation as closely as any analytic determination of "good" and "ought" possibly can. All that Hall needs in order actually to reach it is to take his term "exemplification" seriously—logically rather than epistemologically, synthetically rather than analytically—and without begging the question, that is, without assuming that the property exemplified is a value property.

From the side of this "property," Hall's formula for "*A* is good" is "For any particular *x*, if *x* exemplifies *A* then it were good that *x* exemplify *A*" or (more harshly) 'For any *x*, if *x* exemplifies *A* then *x* ought to exemplify *A*.'"[37] There is no reason why this should not be interpreted as "To be a man is good" means "If Socrates is a man then Socrates ought to be a man." This would be strikingly similar to my definition of "ought," and the theorem that "*x* ought to be good" is always true, since if *x* is an *A* it is better for *x* to fulfill the intensional properties of *A* than not to fulfill them. However, this does not seem to be Hall's meaning. Rather, "*A*" for him seems to stand for a "value"-universal such as "pleasure." But the formula does not express this and thus, in spite of its creator, approaches my own.

Only a hair's breadth of difference separates Hall's formula for "good" and "ought" from my own. Yet, this hair's breadth covers the infinite abyss between analytic and synthetic thinking. Hall's theory is based on the vague and undefined analytic concept "exemplification," whereas mine is based on the exactly defined synthetic concept of intensional fulfillment. This means that my theory has systematic import, because "intension" is a well-defined element in a system, that of

logic; and it has empirical import because its axiom is based on profound penetration into the nature of the value phenomenon itself, Moore's insight into the nature of goodness. Hall's formula lacks systematic import because it consists of vague concepts, such as "exemplification"—analytic concepts, which, as we have seen, "can be readily defined in any number," but are "of no use for systematic purposes."[38]

Lacking systematic import, Hall's formula also lacks empirical import. It is incapable of discerning all-important axiological distinctions, such as those between "is good" and "it is good that," "it is good that" and "it were good that," and so on. Hall's formula is as good a guess as any analytic formula can be, but it is no map for the axiological jungle. In spite of this, Hall uses it as if it were "following the trail of a rabbit 'through all the twists and turns of the underbrush briarpatch,'"[39] and this makes his undertaking such a valiant and desperate effort. It is not, as a synthetic view would be, a bold leap beyond the jungle to the peak from which the whole territory can be mapped.

Following Hall is like following some mythological hero slugging it out with demonic monsters. The analytic concepts with which he struggles have an uncanny capacity for sprouting ever-new heads with which to devour, ever-new fangs with which to ensnare him. We sigh with relief at the end because, even though he did not conquer, the hero at least survived. The jungle is still as it was before his Odyssey, only more formidable. Thus, Hall "records [his] progress as he has gallantly fought his way out of the jungle; many readers will regret that he has brought out so much of the jungle with him."[40] And some may well question the legitimacy of such an enterprise in philosophy in principle. "There is little excuse for leaving the graphs of one's meandering on paper," to speak with a profound expert on philosophical style and method.[41]

3. The Symbolization of "Ought"

If this were the whole story, Hall's account would not be essentially different from other analytic accounts of goodness, such as Garnett's. But Hall goes a step further, and it is this that makes his procedure so serious. He not only uses his formula as a map for the jungle, but he also uses it for the construction of cartographic instruments. He pretends to build a symbolism on it. He uses analytic concepts to produce synthetic formulations. To try to understand phenomenal reality with vague philosophical concepts is one thing; to put these concepts into symbolic form is another. If vague concepts are incapable of mapping the earth, how will they be able to map the stars?

Since, says Hall, the nature of value shines through the structure of normative sentences, as that of facts through that of declarative sentences, all that is necessary to devise a symbolism for value sentences is to replace the parenthesis in the expression "$A(a)$" which represents "a exemplifies A" by brackets "$A\{a\}$" and we have a notation for value sentences, "a ought to exemplify A."[42] This new no-

tation, which, according to Hall, is in some respects much better and in some respects much worse than other models,[43] has been amended in subsequent writings, especially as a result of a discussion with E. M. Adams. Amendments in two respects are designed to show up "the fundamental semantical embedment [*sic*] of declaratives in normatives," namely, the forms "$B(a)$ } $A(a)$," to be read "If a exemplifies B, then it ought to be the case that it exemplifies A"[44] and the forms "$(\exists x)A\{x\}$" and $\{x\}A[x]$," to be read respectively, "Something ought to exemplify A" and "There ought to be something to exemplify A." These forms, invented by Adams, were used to argue against Hall's parallelism between fact and value, the very basis of Hall's argument, and were accepted by Hall.[45]

In relation to the second symbolism, the practical problem arises by which we shall now test both Hall's and my own theory, and then discuss the fundamental question of the legitimacy of symbolism in axiological theory.

The problem is that of the notational rendering of the two propositions: "There is an a that ought to exemplify A" and "There ought to be an a that exemplifies A." Oughting-to-be, says Adams, is not oughting-to-exemplify.[46]

> Now 'There ought to be something to exemplify A' is quite different from 'something ought to exemplify A.' The latter may be symbolized by '$(\exists x)A\{x\}$,' combining a familiar notation with Hall's notation for normatives, and this gives us only a generalized form of $A\{a\}$ without any particular significance for our purpose. But the former, 'There ought to be something to exemplify A,' is a different matter. Again drawing on conventional notions, Hall's suggestion for normatives, and improvising to a certain extent, this might be symbolized by '$(\exists x)A[x]$' and read 'there ought to be something that would exemplify A.' This seems to be a basic kind of normative. It is not only not reducible to either '$A\{a\}$' or '$(\exists x)A\{x\}$'; it is not entailed by either and it does not entail either of them. 'Something ought to exemplify A does not entail 'there ought to be something that would exemplify A,' for if the something that ought to exemplify A did not exist it might not be the case that A ought to be exemplified at all. And neither does 'there ought to be something that would exemplify A' entail 'there is something that ought to exemplify A.' It might be *there ought to be a man who would marry Jane and yet not there is a man who ought to marry Jane.*[47]

Thus, Adams discovers a new kind of normative not covered by Hall.

> The ought-to-be or the oughting-to-exist of a particular seems to be a basic kind of normative that we do manage to assert in ordinary language, but cannot be asserted in Hall's suggested ideal language with '$A\{a\}$' as the standard normative form. His not recognizing this seems to have a significant bearing upon his conclusions concerning the nature of ought and, since he identifies the two, the nature of value.

> There isn't the same difficulty about fact. While what is said in the form of '(∃x)A[*x*]' cannot be said in the form of 'A{a},' I see no difficulty in saying anything that is sayable in the form '(∃x)A[*x*]' in the form of '*A*(*a*).' So an ideal language could conceivably get along with the fact-forms of '*A*(*a*)' and '*A*(*a*, *b*),' but not with the ought-forms of '*A*{*a*},' and '*A*{*a*, *b*}.' This argues against [Hall's] theory of parallelism between fact and value and his contention that every value, in a sense, contains a corresponding fact, and explicitly against the contention that the nature of value is shown by the form '*A*{*a*}' or '*A*{*a*, *b*}.'[48]

This conclusion pulls the rug from under Hall's entire theory. Hall, far from minding, lies down beside it. He not only concedes that Adams is right but turns the other cheek, showing that the symbolism does not even adequately represent the form that Adams accepts, which is, "There is an *a* which ought..."

> Just how we should handle existential operators in a normative logic and remain faithful (by and large) to ordinary speech is a puzzle—though not such an absolutely baffling one that I would advocate the complete abandonment of clarification *via* model languages.[49]

Hall then tries various possibilities of accounting symbolically for Adams's distinction, again following the rabbit's path, and coming out nowhere.

The definite problem here is to account for two verbal axiological expressions. A symbolism has been proposed, and it fails to account for the expressions. Formal axiology also proposes a symbolism, so here is a perfect test case for the comparison of two axiological symbolisms. Let us first see how simply and elegantly the notation of formal axiology solves the problem, then examine the reason why Hall's does not.

In the notation of formal axiology,[50] "There ought to be a man who would marry Jane" is symbolized by "I ← C," whereas "There is a man who ought to marry Jane" is "I → C." As in Table 4, p. 176, of *The Structure of Value*, the first assumes the underlying judgment "There is no man to marry Jane," E – C, and the second: "There is a man to marry Jane," I – C. A second meaning for "There ought to be a man to marry Jane," is based on the underlying logical judgment O – C, "There is a man who does not marry Jane." This possibility escaped both Hall and Adams.

The reason that Hall's notation is not capable of solving the problem is that he has not derived the symbolism from the primary qualities of the phenomenon but has adapted a symbolism to the secondary qualities of the phenomenon. He has not penetrated to the nature of the phenomenon, to its *axiometric notion*, and from it derived a notation, but has devised an "arbitrary notation"[51] in terms of which he tries to understand the phenomenon. This means that for each new case a new symbolism will have to be developed, for

there is no one axiom based on the nature of the phenomenon itself, from which the symbolism is derived.

Penetration into the phenomenon would have shown, in the present case, that the distinction made by Adams is *not so much a question of the existential operator as of "ought" itself.* The nature of "ought," not that of the existential operator, is what distinguishes the two propositions. The "ought" in the first proposition is axiologically synthetic; in the second it is axiologically analytic. The difference between the two was defined by the modality of the logical judgments underlying the axiological "ought"-proposition. Synthetic "ought"-propositions, I said, assume that what ought to be is not the case; the modality of the underlying ought judgment is negatory. Analytic "ought"-propositions assume that what ought to be is the case; the modality of the underlying logical judgment is assertory.[52]

The present case is a perfect example of such "ought"-propositions and confirms the soundness of my interpretation. Both propositions are given by the form "Someone ought to marry Jane." This is a logical "I" proposition with an axiological copula and a non-axiological predicate, a mixed axiological proposition. The general form is "I arrow C" where the nature of the arrow is determined by the analyticity, syntheticity, or hypotheticity of "ought." In the case of, "There ought to be a man who would marry Jane," Hall himself gives the rendering of formal axiology: "There ought to be a man [but I suspect there is none] to marry Jane."[53] The notational form is "I ← C;" the proposition has the axiological truth-value of *indeterminacy*;[54] and the underlying judgment is E – C.

Hall formulates the second case as "There is a man [you know who] who ought to marry Jane." This is the same as my own rendering as "There ought to be a man to marry Jane [and there is one!]" or "*a* man [you know who!] ought to marry Jane." Thus, this axiological proposition confirms what is assumed to be the case; its form is "I → C;" its axioxogical value is true;[55] and the underlying judgment is I – C.

In the case overlooked by both Adams and Hall, Hall's rendering would be "There ought to be a man [you know who!] to marry Jane [but I suspect he won't]." Here the form is I ← C, with the underlying judgment being O – C rather than E – C. This last form shows especially clearly that the burden of the problem is not so much on the existential quantifier as on "ought" itself; it cannot be rendered by any of the forms discussed by Hall and Adams. The existential quantifier, in all three forms, does not so much belong to the "ought"-proposition as to the underlying judgments. This, then, is my solution to Hall's "puzzle" about "how we should handle existential operators in a normative logic and remain faithful to ordinary speech."

The distinction between "ought to exist" and "ought to exemplify" has been discussed previously. The underlying judgments of the mixed axiological proposition "*x* ought to exist" are: "*x* exists," "*x* does not exist," and "*x*

may or may not exist,"[56] depending on whether the proposition is axiologically analytic, synthetic, or hypothetical. Hall's four puzzling propositions:

> 'Whether or not it is true that John still loves her it certainly would be good were it true.' 'It ought to be the case that every good man is happy; unfortunately it is false.' "'There are no spies among out top scientists' happens to be false; it ought to have been true." and 'It ought to be the case that every suspect is arrested; I am glad to report that this is the case.'[57]

are examples of respectively hypothetical, synthetic, and analytic "ought propositions." Their forms are: $A \leftrightarrow C$, $A \leftarrow C$, $E \leftarrow C$, and $A \rightarrow C$. Compare this simple notation and its meaning in formal axiology with the somewhat tortured, or as he says, "intolerable" suggestions of Hall.

The reason for the different power of the two notations, the "arbitrary" one of Hall, and the systematic one of formal axiology, is that formal axiology was developed on the basis of an axiomatic notion of the phenomenon, but Hall's was not. Formal axiology is thus a consistent theory, deduced from one axiom that is defined with precision, in logical detail, and on the basis of the phenomenon itself. My symbols "$I \leftarrow C$" and "$I \rightarrow C$" are not arbitrary, but represent precisely defined relations within a synthetic system. In this system, based on the definition of "good" rather than "ought," "ought" itself appears as a precise relation—that between non-fulfillment and the fulfillment of a concept, and the various modes of oughting are exactly defined. No other considerations than those defined enter into the problem. In particular, my interpretation makes it clear that Hall's discussion of the nature of the existential quantifier is irrelevant to the problem as long as it is based on arbitrary symbols rather than on phenomenal insight, for such symbols can never render the modal difference between proposition and judgment that essentially characterizes every "ought"-proposition.

Adams's guess that a difference obtains between oughting-to-be and oughting-to-exemplify, while true, has nothing to do with the present problem, that of rendering the difference between the men to marry Jane. It belongs to an entirely different circle of problems, as discussed in the preceding section. As clarified there, the difference between oughting to be and oughting to exemplify is that between a thing's not possessing any properties at all, and its not possessing the properties of a certain class. In the first case, the thing was worse than one that existed and at least had some properties ("it is better for X to exist than not to exist" or "x ought to exist"). In the second case, the thing is not a member of a particular class, but of another class, and hence ought to exemplify the properties of its own class rather than the other. But it ought to do this only if its own class has more properties to exemplify than the first. If this is not the case, the thing ought not to exemplify the prop-

erties of its own class, but, analytically, the first. All this derives from the definition of "ought" and its positive and negative senses.[58]

I am now ready to discuss the question of symbolization in general and in ethical theory in particular. We have seen that systematic import based on synthetic concepts, legitimate symbolization, means greater empirical efficiency, namely, systemic-empirical import. Illegitimate symbolization is merely empirical import based on analytic concepts. From this point of view, formal axiology has just passed a strenuous test, solving a problem that illegitimate symbolization could not pass. Formal axiology not only solves this problem, but, as a glance at Table 4, p. 176 of *The Structure of Value* shows, it gives the entire matrix within which the problem must be examined, and it specifies its interrelationship to numerous similar problems that neither Adams nor Hall discussed. All this shows much more than a mere difference between particular theories. It demonstrates a fundamental difference in axiological thinking.

Let us now delve to the bottom of this difference in symbolization. We shall find a striking confirmation of my thesis that synthetic concepts give empirical efficiency and analytic do not. The example before us is so striking because of the extreme closeness of Hall's and axiology's formula for goodness. Yet, his is based on analytic concepts and mine on synthetic, his on material and mine on formal concepts. This difference is what gives the two symbolizations their different power.

It is astonishing that so seemingly logical a notion as that of exemplification would be so vague when put in analytic epistemological form. But again, as in *Modern Science and Human Values*, we see Hall retreat before the gap, so narrow and yet so deep, between the two kinds of thinking. As in the historical study, he said that "as a historian I must refrain,"[59] so he now refrains even in his analytic study and asks "the reader to be indulgent as to specific formulations."[60] Again, he sees the issue, but he does not pursue it persistently enough. As he says in the historical study, a Galilean reformation of value theory is needed; and, although he analyzes in detail the Galilean procedure in science, he does not draw the consequences for value theory. Here he says,

> when we utter a value predicative sentence we are saying something very complex in what appears to be a simple sentence, something whose analysis requires a careful consideration of the total content and an expansion of the analyzed sentence into a number of sentences.[61]

Yet, he does not give this pattern of sentences that a value proposition presents. The reason is that Hall made the wrong choice as to his premise. He chose "ought" rather than "good" and thus tainted with the corruption of "ought" the correct rendering of his formulas for "*a* is good" and "*a* is good."

This, together with the analytic rather than synthetic, material rather than formal, understanding of exemplification vitiates his tremendous efforts. My comparison between Hall and Tycho Brahe thus gets a confirmation even on the side of value theory itself. Tycho Brahe came extremely close to the Keplerian notion and had all the empirical material at his fingertips, but he did not go the last mile of synthetic imagination. He was, said Goethe, one of those minds

> who, so to speak, feel themselves at odds with nature and therefore love the complicated paradox more than the simple truth; and they enjoy error because it gives them an opportunity to exhibit their acumen. He, however, who recognizes the true seems to honor God and nature, but not himself; and of this kind was Kepler. [62]

Again, only one step is needed to convert Hall's guesses into scientific axiology: taking the term "exemplification" logically seriously—"For *a* to exemplify *X* means for *a* to be a member of the class of *X*."[63] Once this is done all the rest follows, the connection with Moore's "two different propositions [which] are both true of "goodness" becomes clear, and the theory of axiology becomes an original link in the historical course of moral philosophy rather than a series of *ad hoc* additions.

Thus, no matter how close analytic thinking gets to synthetic thinking, the gap is still infinite and can only be closed by a leap. No matter how close, analytic thinking can never succeed in formulating a logical system. A miss here is always as big as a mile. No matter how "logical" such formulations, unless they are truly logical, that is synthetic and systematic, they must remain arbitrary and insufficient. A symbolism proposed on an analytic basis, then, is no legitimate logical instrument. Rather, the proposal of a symbolism on the basis of vague common sense concepts is the very core of what Hall himself characterized as pre-scientific or, after the creation of the scientific method, pseudoscientific.

To propose such a symbolism is not a trivial matter but a fundamental mistake in axiological thinking. It is as illegitimate as were, from the modern point of view, the alchemical attempts at making gold. They too were a groping from case to case on the basis of everyday language and common sense observations. Since this procedure of pseudo-symbolism is widely used in moral philosophy today, I must discuss it in more detail. Hall's procedure is only one example of a wide practice.

4. Analytic Shorthand and Synthetic Symbolism

Hall's fundamental thesis is the separation of fact and value and the manifestation of the structure of fact and value, respectively, in the structure of de-

clarative and normative sentences. This means that reality, either fact or value, appears in the structure of everyday language and its analytic concepts. But, as we have seen, this is not the case. The reality corresponding to analytic concepts is not at all that of fact; it is that of a distorted mirage of the world. It is the world of sensible facts, and these facts vary with the conceptual structure of the language. True scientific fact only appears as concomitant of synthetic systems. Thus, to say the least, the structure of fact and its relation to language is more complex than Hall assumes. But then also the relation between value and language must be more complex, and there must be a difference between value as appearing in the structure of analytic versus synthetic language.

There are at least two kinds of fact and two kinds of value, those belonging to and arising from analytic language, like "John is falling downstairs" and "John is good," and those belonging to and arising from synthetic language, such as "$a = \frac{1}{2}gt^2$" which is the formula in mechanics that John exemplifies when falling downstairs, and "'good' = $(\psi)\psi\omega\phi$" which is the formula of formal axiology that he exemplifies in being good, namely, having all the properties contained in his self-concept. Obviously, the formal kinds of fact and value cannot appear in ordinary discourse.

By his fundamental assumption, Hall cuts himself off from a systematic understanding of value reality and limits himself to common sense secondary value phenomena. Yet, on the basis of this analytic kind of understanding, he proposes a symbolism. Let us now examine the nature of such a symbolism. Obviously, it does nor arise, as did Galileo's, out of insight into the phenomenon; for Hall is not concerned with the phenomenon; he is concerned with what people say about it in ordinary value discourse. This resembles the kind of Wittgensteinian procedure that Bertrand Russell characterized as: finding out "what silly people mean when they say silly things." This is not exactly Hall's procedure, but his is not too far from the Wittgensteinian.

Hall presupposes that certain statements that people make are value statements, and hence that the structure of such statements is relevant to "the structure of value." He thus takes the ordinary language of ordinary people as his philosophical guide, rather than penetrating himself to the nature of value, discovering a structure in it, applying this structure to what people say, and then acting as their guide rather than allowing them to guide him. Instead of asking himself, in all seriousness, "What Is Value?" he asks himself, "What Is Being Said About Value?" His procedure is precisely the same as the one he characterizes as alchemical: he observes the secondary qualities of phenomena as if they were primary; and he draws from them all kinds of conclusions, as if they were conclusions about the phenomenon rather than about how the phenomenon appears to, and within, the world of experience. He even goes so far as to suggest a symbolism for these appearances. Let us see what this procedure would mean historically.

It would mean that Galileo would have attempted to "get at"[64] the nature of motion through the structure of motion-sentences. He would have had to collect samples of motion-sentences uttered by people in, and about, motion, and to analyze their structure. For, according to Aristotle, the motion of people is just as relevant to the nature of motion as that of, say, stones. Instead, therefore, of taking the hard road and trying to listen to the language of stones—as he did—Galileo could have taken an easier road and listened to the language of people. There was no more nor less reason for him to listen to the language of stones rather than that of people than there is for axiologists to listen to the language of people rather than that of stones. Both people and stones move, and both people and stones have value—especially "precious stones." It is, therefore, not obvious that the value language of people is more revealing of the nature of value than that of stones. But it is easier to listen to.

Suppose that Galileo, after listening to the motion-sentences of people, had analyzed the structure of these sentences and had proposed a symbolism parallel to that of Aristotle's logic; and instead of writing "S is P" he would have written, whenever it was a question of motion, "S is K," introducing thus the kinetic predicate K; so "S is P" could represent, for example, "Socrates is a man" and "S is K" represent "Socrates is a biped." He could have proposed this notation as a "programme" for the solution of the problem of motion and drawn all kinds of consequences, for example, the parallelism between *Barbara* and *K-Barbara*, *Celarent* and *K-Celarent*, *Darii* and *K-Darii*. To elaborate, he could have observed that Saint Barbara is the patron saint of artillerymen who are continuously on the move and hurl projectiles, that "celer" means "swift," that "celarent" is the common usage of the contrary-to-fact conditional "celerarent," which means a motion so swift that it does not exist, hence is invisible, hence is the swiftest possible. According to Herodotus, Darii's chariot was the swiftest ever, which, he could conclude, makes it obvious that K-Barbara, K-Celarent, and K-Darii are valid motions of the first K-figure, and so on.

Such alchemical procedure,[65] based firmly on common sense and ordinary language, would not have led to the systems of Newton and Einstein. It would not have answered the question, "What is Motion?"; needed was a system that completely disregarded common sense and was based on new insight into the phenomenon itself—as Hall makes so crystal-clear in *Modern Science and Human Values*.

Suppose, then, that Hall, in his better judgment, is right; and value is the phenomenon to be investigated by value theory, as motion is to be investigated by mechanics. Then a procedure such as the above would be no more significant in value theory than it would have been in mechanics. Yet, it is precisely Hall's procedure. In modern logical notation, "$A(a)$" represents "a exemplifies A." Hall replaces "( )" by "{ }" and proposes the new notation $A\{a\}$, "a ought to exemplify A," as a significant contribution to the under-

standing of the *nature* of "ought." Quite seriously, discussions arose as to the merits and demerits of this symbolism, under titles such as "The Nature of Ought";[66] and actual axiological problems were tacked by it, as we have seen.

Yet, the underlying theory lacks precision of thought. Its author is admittedly in the dark about the nature of value, and perhaps even about the nature of exemplification, which he discusses epistemologically rather than logically.[67] Thus, his substitution of "{ } for "( )" in the formula of exemplification cannot possibly mean anything precise either. It is based on a hunch—that the structure of value appears in structure of value-sentences that "par allel" fact sentences.

This procedure has no greater justification than that of our syllogistic Galileo, based on the hunch that the structure of motion appears in structure of motion-sentences and that the structure of such sentences is "parallel" to that of non-motion sentences, hence his substitution of "K" for "P." In both cases, the precision instrument of logic is used on the basis of a hunch, fortified by a metaphor—that of "parallelism"; but such a use of a precision instrument can be hardly more than a pun. Using such an instrument on so vague a basis is certainly contrary to its nature. It is an illegitimate use of symbolism.

This is much more serious than it might appear to be. Far from being "valuable," as Hall thinks, such "arbitrary symbolism"[68] is, on the contrary, damaging to the cause of exact knowledge. For it pretends to be what it is not, namely, a precision instrument. It conceals the nature of a true precision instrument: its exclusive employment in the service of synthetic concepts. In the degree that an arbitrary symbolism, based on analytic concepts, is being taken seriously, the vision for true precision instruments is being clouded, and the alchemical nature of the procedure is covered up. We have, then, here a fundamental lack of understanding of the enterprise of knowledge itself.

This lack lies in the assumption that we can symbolize something that we do not know. The legitimate procedure must be based on the contrary assumption, that we cannot symbolize what we do not know. Whereof we cannot speak, thereof we must—in symbols—be silent. The reason is simply that a symbolism cannot say more than what has been put into it. If we put nothing significant into it, it can give nothing significant back and only idle like a motor that is going nowhere. Significant insight must be formal and synthetic insight. Analytic "insight" is formally without value. And any symbolism based on it is at best shorthand. Hall's substitution of curled brackets for parentheses is not logic but shorthand. Such shorthand is no more significant for the nature of value than the signs of the Zodiac are for the stars. They are as far from truly formal axiology as astrology is from astronomy.

That all this, so obvious in natural science, is so obscure in moral and social science, is astonishing. Such pseudo-theoretical exercises are detected in their true significance, not by moral or social, but by mathematical and nat-

ural scientists, who are trained in genuine formal methods and their applications. Consider the following criticism of a well-known sociological theory by E. T. Bell, keeping in mind that what he says of the use of "mathematics" in this social theory also applies to the use of "logic" in present-day axiology.

> There is no more pathetic misapprehension of the nature and function of mathematics than the trite cliché that mathematics is a shorthand....Mere symbolization of any discipline is not even a respectable parody of mathematics....The S-theory has yet to take its first step toward generative mathematical symbolism....No reckless abuse of the mathematical vocabulary can [of itself] transform a theory not yet mathematical into anything more substantially mathematical than a feeble mathematical pun....There is no mathematics in the book.[69]

In all cases, genuine methods are based on an original insight, formal or synthetic insight into the phenomenon itself. Only when such an insight has been reached can a symbolism help us and indeed give us wings. Without such previous insight it is as harmful, as with it, it is helpful. Without formal insight, our wings are feathers, and the axiologist is an Icarus, certain to be burned by Plato's sun. With formal insight, our wings are powerful jets, and the axiologist a Lindbergh covering unknown spaces.

An analytic symbolism such as Hall's or Adams's therefore cannot succeed; nor will any other endeavors of symbolic manipulations where insight into the phenomenon is admittedly missing. This rather severe conclusion, which is obvious on the basis of our distinction between analytic and synthetic knowledge, will now be illustrated, first by a contemporary, then by an actual—not an imaginary—historical example.

At present we know nothing about flying saucers. Suppose we assume that existing language about flying saucers would reveal their nature. We would then assemble all the sentences that have been uttered about flying saucers, distill from them their logical structure, express this structure in some new symbols, and operate with these symbols as if we were operating with the structure of the nature of flying saucers. Obviously, we would not be taken seriously.

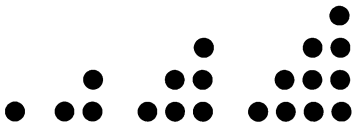
The same procedure when applied to value, of which we know nothing either, is regarded as plausible.

Let us then go a step further. You made a mistake, we may be told. Flying saucers are of a very intricate structure; it cannot be discovered in the everyday language of ordinary discourse, but it can be expressed in mathematical equations. Once this is done, you will know what flying saucers are. This, of course, is a great advance; but it does not get us any further along because it puts the cart before the horse. No doubt, the nature of flying saucers will be revealed by the structure of the equations that account for them. We can thus,

quite plausibly, define a flying saucer as that which makes a legitimate flying-saucer equation legitimate. But will the use of semantical rules in the ideal language of flying saucers—say, applied mathematics—help us to gain an insight into flying saucers? Hall thinks that in the parallel case of value "With many reservations, ...to some degree it can."[70] Obviously, however, it cannot. For how would I know that a certain structure, say, a certain set of differential equations, refers to flying saucers if I do not know what flying saucers are? I must first know what I am talking about before I can talk about it meaningfully, let alone in a technical way.

It cannot be different with value. First, I must know what value is before I talk about it, let alone in a technical language. How would I know that a certain structure of sentences—say the normative—refers to value if I do not know what values are? Assuming that the structure of value shines through the structure of certain sentences is neither more nor less justified than assuming that the structure of flying saucers shines through the structure of certain sets of differential equations.

Now an actual historical example will be given. Plato knew very little about the constitution of matter. However, the Pythagoreans had shown that the triangular numbers 1, 3, 6, 10, 15, 21, and so on, can be represented in the forms of triangles, as follows:



These numbers have very peculiar properties, the Pythagoreans noted, especially the fourth of them. *Ten* is not only a triangle, but also the sum of the preceding triangular numbers. Therefore, it is the sacred *tetractuis*, the holy fourth triangular number, in which all things are contained. Obviously, therefore, it is the archetypal pattern of the universe. From it, and from the triangular series in general, the four elements, fire, air, earth, and water can be generated and represented in terms of the then known four regular solids, fire being the tetrahedron, air the octahedron, earth the hexahedron (or cube), and water the icosahedron. And since "the world must be solid," we read in Plato's *Timaeus*, it is a matter of common sense, Plato believed, that the structure of the universe is revealed in the structure of the triangular numbers.[71] Plato knew of no good reason why this should not be so, for he knew as little about the structure of triangular numbers as about the constitution of matter; and anything can be said about what we do not know, especially something about which we know equally little. By Plato's time the fifth solid, the dodecahedron, had been discovered. Rather than spoil the fourfold harmony of the elements, Plato had he Demiurge "use it to embroider the heavens with constel-

lations."[72] The fifth solid, rather than being another material element, became the "quintessence," the "fifth essence," regulating the whole. Johannes Kepler made impressive use of all this, having the dodecahedron symbolize the twelve signs of the Zodiac, and thus the universe.

Plato's use of numbers is an exact analog of Hall's procedure. As much and as little reason exists for Hall's belief in the essential normativity of value and its structure shining through the structure of normative sentences, as for Plato's belief in the "essential triangularity" of matter and its structure shining through the structure of triangular numbers. Indeed, Hall's guess would be an ingenious one if it had as much plausibility as Plato's. Following up the Pythagorean/Platonic clues, Kepler detected the first and second laws of planetary orbits. He did so, it is true, on the basis of Tycho Brahe's painstaking empirical materials; this phenomenal basis made him successful where Plato and other numerologists, those who used numbers without empirical basis, had failed. From this we may conclude that a similar phenomenal basis may give to the endeavors of our modern logicologists, those who use logic without empirical basis, valuational relevance. Phenomena are often not seen except by those who look for them; and only those can look efficiently who have the corresponding theoretical framework.

Although the phenomena of the moral life are all around us, lacking a comprehensive theoretical framework, we see only snatches; and our ethical treatises, instead of giving us the moral drama of the age are full of meaningless little anecdotes and inane examples of people using imperatives, normatives, and the like, that are either trite, like "Be charitable," or trivial, like "Use the starting handle." They are far from being even Keplerian. And Kepler's discoveries became significant only after being combined with the minute empirical investigations of Galileo within the empirico-theoretical system of Sir Isaac Newton. There is, thus, a long way to go before logicological or logological valuational efforts become morally relevant, if ever they will. Most of numerology, mathematical symbolism without phenomenal basis, remained sterile and without significance for the development of natural science. Why should it be different with logicology—logical symbolism with phenomenal basis—in the development of the science of value?

The difference between numerology or logicology and genuine system building is that the genuine thing includes a phenomenal basis that is systematically rendered by symbols; but in numerology both a phenomenal basis and its symbolic rendering in a consistent theory are missing. Its symbols are nothing but symbols, snatches of notation outside of any systematic matrix, wisps of haze offered as pieces of cloth. Fundamental problems in moral philosophy can no more be solved by mere notation than very fundamental problems in natural philosophy. The alchemists had no precedent and had to feel their way, but we do have a precedent, namely the alchemists, negatively, and their scientific successors, positively. As it is, moral philosophy follows

methodologically the procedures of alchemists and astrologists; and our logological symbols have no more relevance for value than alchemical symbols had for matter, or astrological ones for the stars.

It took Galileo and Antoine Lavoisier to overcome this kind of thinking. They did so by finding in the phenomena themselves the primary qualities that made them accessible to formal notation. Before them, mathematics was used at random; and alchemistic and astrological procedure can be defined as *the random use of mathematics applied to analytic concepts*. Galileo and Lavoisier made clear that the precision tool of mathematics can be used legitimately only where the subject matter has been prepared for its use. Alchemists and astrologists used numbers prematurely. Such premature use of a precision instrument is typical of pseudo-science; it resembles the use of the surgical knife without a knowledge of anatomy. It is methodological quackery—only that the body suffering from it today is the body politic rather than the physical body, as it was in Paracelsus's time. Formalism, then, is nothing to play with; it is a serious matter. To use it without proper preparation of the subject matter is no less irresponsible in moral philosophy than in natural philosophy. We are in the age not only of moral alchemists, but also of moral barbers.

No use of mathematics is legitimate other than the application to primary properties. Where the phenomena in question are not "resolved"—in the Galilean sense—into such properties, the use of mathematics is an idle game. Numbers cannot be used legitimately without having first penetrated to the essence of that which numbers are supposed to represent. No isomorphism between phenomena and symbolism can exist unless there is phenomenal *morphé*.

What is true for natural philosophy must be true for moral philosophy. Formal notations, whether of numerical or of logical symbols, may be applied to value only if the phenomenon of value itself has been resolved into primary properties and defined in formal terms. Such definition, such penetration to the very marrow of the phenomenon, ought to be the true labor of the axiologist, as it has always been that of the physicist and chemist. Without such phenomenal penetration, any use of formal notation is an attempt at reaping the fruit without having sowed, a fundamentally unsound and illegitimate procedure. The conclusion is inevitable that any use of formal notation with reference to value is an idle and fruitless game, unless we know what value is in the sense of having broken down the phenomenon to its primary properties that are accessible to such notation.

Only when a definition of the value phenomenon itself has been offered in logical terms can logical notation be used successfully. It can be used only within a total formal theory of value, and not without or outside of it. The logical model, the "miniature logic" that accounts for value, must be built first, just as Galileo built the geometrical model, the "miniature geometry"

that accounts for motion.[73] This kind of logical model formal axiology tries to build.

The present situation in moral philosophy is precisely analogous to the corresponding situation in natural philosophy with respect to *the symbolic nature of value.* Many critics of the algorithmic games of pseudo-philosophers of nature did not, like Galileo, know the correct answer; but they divined it, as did Francis Bacon. Bacon made exactly the same points against his fellow naturalists' attempt to jump the empirical gun that were made above with respect to values.

The procedure of applying logical symbols to value has value for valuation only if valuation is a matter of logic. Whether and how it is should be the fundamental question to be examined by axiologists *before* venturing to propose value symbolism. Bacon reacted against the premature use of precision instruments, be it Aristotelian logic, Platonic mathematics, or any separation of theory and practice.[74] Bacon never understood the difference between the illegitimate use of mathematics and its legitimate use in the hands of Copernicus and Galileo. Neither of them was like the empiricist ant or the dogmatic spider; but they were, especially Galileo, like the industrious and form-creating bee. Bacon's characterization of the situation in the natural philosophy of his time applies quite accurately to our present-day situation in moral philosophy. Those who have handled axiology

> have been either men of experiment or men of dogmas. The men of experiment are like the ant: they only collect and use; the reasoners resemble spiders, who make cobwebs out of their own substance. But the bee takes a middle course; it gathers its material from the flowers of the garden and of the field, but transforms and digests it by a power of its own. Not unlike this is the true business of philosophy; for it neither relies solely or chiefly on the powers of the mind, nor does it take the matter which it gathers from natural history and mechanical experiments and lay it up in the memory whole, as it finds it: but lays it up in the understanding altered and digested. Therefore, from a closer and purer league between these two faculties, the experimental and the rational, (such as has never yet been made) much may be hoped. [75]

No such "league" exists yet in moral philosophy, both because the empirical material is not recognized, and the theoretical framework is not created. Most present-day axiologists are either ants, or spiders, or both, jumping from pseudo-empirical materials like the popular vocabulary of the man in the street to pseudo-rational conclusions. This is precisely the contortion of "experience" and hence of thought of which Bacon speaks.

> Men of learning, but easy withal and idle, have taken for the construction or for the confirmation of their philosophy certain rumors and vague fames or airs of experience, and allowed to these the weight of lawful evidence. *And just as if some kingdom or state were to direct its counsels and affairs, not by letters and reports from ambassadors and trustworthy messengers, but by the gossip of the streets; such exactly is the system of management introduced into philosophy with relation to experience.* Nothing duly investigated, nothing verified, nothing counted, weighed, or measured, is found in [axiology]; and what in observation is loose and vague, is in information deceptive and treacherous.[76]

What is investigated, verified, counted, weighed, or measured is nothing relevant to the subject matter, value, or at least this relevance is not investigated. Thus,

> We have as yet no [moral] philosophy that is pure; all is tainted and corrupted: in Aristotle's school by logic; in Plato's by natural theology; in the second school of Platonists, such as Proclus and others, by mathematics, *which ought only to give definiteness to natural philosophy, not to generate or give it birth.* From a [moral] philosophy pure and unmixed, better things are to be expected. No one has yet been found so firm of mind and purpose as resolutely to compel himself to sweep away all theories and common notions, and to apply the understanding, thus made fair and even, to a fresh examination of particulars. Thus it happens that [moral] knowledge, as we have seen it, is a mere medley and ill-digested mass, made up of much credulity and much accident, and also of the childish notions which we at first imbibed.[77]

This kind of method led to the number games of Galileo's scholastic adversaries and to the concoctions of the hermetics.

We are in exactly the same danger of going astray in axiology in both of these directions. Being clear about the true direction is of fundamental importance: the substitution of synthetic for analytic, axiomatic for categorial concepts. Otherwise, we shall be unable to cut a swath through the jungle that is today's moral philosophy, swarming as it does with the ants of pseudo-scientific empiricists, from positivists to logicological symbolists, and with the spiders of dogmatism, from analytic "system" builders to theological moralists.

This chapter has tried to examine the illegitimacy of using formal methods without empirical, or with pseudo-empirical, content. Before turning next to the illegitimacy of using empirical methods without theoretical, or with pseudo-theoretical form, let us, by way of summary, remember Bacon's famous words on the middle axioms, which every axiologist ought to remember before flying off, even tentatively, into the stratosphere of symbolism.

> The understanding must not...be allowed to jump and fly from particulars to remote axioms and of almost the highest generality...and taking stand upon them as truths that cannot be shaken, proceed to prove and frame the middle axioms by reference to them; which has been the practice hitherto; the understanding being not only carried that way by natural impulse, but also by the use of syllogistic demonstration trained and inured to it. But then, and then only, may we hope well of the sciences, when in a just scale of ascent, and by successive steps not interrupted or broken, we rise from particulars to lesser axioms; and then to middle axioms, one above the other; and last of all to the most general. For the lowest axioms differ but slightly from bare experience while the highest and most general [which we now have] are notional and abstract and without solidity.[78]

As Goethe remarked, "It is the mistake of weak spirits to jump in reflection, from the singular right away to the universal."[79] In order to give our axioms solidity they must be synthetic rather than analytic, something which Bacon did not clearly see. To be synthetic they must be anchored deeply in the phenomenon, and this he clearly saw. Just as Bacon's contemporaries in natural philosophy tried to fly before they could walk, so our contemporaries in moral philosophy try to fly airplanes before solving the most elementary equations in aerodynamics. Their "understanding must not therefore be supplied with wings but rather hung with weights."[80] However, weights—and measures, and classifications, and other empirical paraphernalia—have their own governor in axiology. The expert axiologist must navigate between the two dangers of pseudo-logicism and pseudo-empiricism. To the second we shall now turn.