



Categories

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*Meeting of the Aristotelian Society at 55, Russell Square, London,
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IX.—CATEGORIES.

By G. RYLE.

DOCTRINES of categories and theories of types are explorations in the same field. And the field is still largely unexplored. Moreover the exploration of it is at present handicapped by certain vocabulary-differences between philosophers, which hinder them from reading one another's maps. My object in this paper is rather to remove certain obstacles to the exploration than to proffer surveys of my own.

The matter is of some importance, for not only is it the case that category-propositions (namely assertions that terms belong to certain categories or types), are always philosopher's propositions, but, I believe, the converse is also true. So we are in the dark about the nature of philosophical problems and methods if we are in the dark about types or categories.

I begin with some historical remarks, not in order to exhibit adeptness in philosophical palæontology or even to make upstart doctrines respectable by discerning Norman blood in them, but as a convenient way of jointly opening up the philosophical questions and explaining some traditional terminologies of the topic.

Aristotle's Categories.

What did Aristotle think that his list of Categories was a list of? The word "category" meant what our word "predicate" means and shared all the vagueness and ambiguity of this English substantive. But Aristotle's list of categories was not a glossary of all the predicates that there are. On at least a plausible interpretation of the doctrine, Aristotle's list is intended to be a list of the ultimate types of predicates. But what does this mean?

There are simple propositions, namely those which do not consist of more elementary propositions in junction with each other, that is to say there are propositions into the expression of which there cannot enter such conjunctions as "and," "or," "if," "although," "because," etc. Of these simple propositions some are singular propositions, namely those each of which is about at least one named or directly indicated particular.

Collect a range of simple, singular propositions, all similar in being about the same particular or particulars, then the respects in which these propositions differ from one another will be their predicates. And these predicates are classified into a finite number of families or types, the differences between which types can be indicated, though not defined, in the following way.

Any simple proposition about Socrates, say, is an answer, probably a false one, to some question about Socrates. Any given question about Socrates will generate a range of possible answers, but not any proposition about Socrates will be an answer to this question about him. There are as many different types of predicates of Socrates as there are irreducibly different sorts of questions about him. Thus "How big?" collects "Six foot tall," "five foot tall," "ten stone," "eleven stone," etc., and does not collect "fair haired," "in the garden," or "a stonemason." "Where?" collects predicates of location, "What sort?" collects predicates of kind, "What like?" collects qualities, and so on.

Any two predicates which satisfy the same interrogative are of the same category, and any two which do not satisfy the same interrogative are of different categories. In the main Aristotle seems to content himself with taking ordinary language as his clue to the list of heads of questions, and so of types of predicates.

This programme of cataloguing types was then expanded, either by Aristotle or by his followers. We can not only ask about a particular a series of questions, each of which will yield in its answers a range of possible predicates of that particular; we can also ask with reference to any

such predicate "Who has it?" or "What (in the sense of 'which') has it?" The answers to these questions will name or indicate particulars, like "Socrates," "Fido," "I" and "the Queen." Obviously these questions do not generate ranges of predicates, but ranges of subjects or possessors of predicates, that is, particular substances. So *Socrates* is in the category of Substance, whereas *snub-nosed* is in the category of Quality and *husband* in that of Relation. As a result of this expansion, "category" no longer means "type of predicate" merely, but "type of term" where "term" means "abstractible factor in a range of simple, singular propositions."

Aristotle's actual list of ten (or sometimes eight) types of terms is doubtless unsatisfactory. Certain of the alleged ultimate types are patently only subordinate branches of others, and the criteria used by Aristotle for determining whether a term is of this or that category are fairly loose, where they occur at all. But for his purposes this does not matter much. He chiefly required to be able to demarcate (a) qualities from relations, (b) both from substances, and (c) all three from sorts or kinds. And this he was now able in a rough and unprecise way to do. But we have other fish to fry, so we have to notice other defects in his scheme.

1. It is not an easy matter to decide when a sentence expresses a simple proposition. For the fact that a sentence contains only one verb and no conjunctions does not prove that the proposition expressed by it is simple, *i.e.* that the sentence *could* not be paraphrased by a sentence containing conjunctions and a plurality of verbs. And in fact any sentence containing a description, or any sentence containing a dispositional adjective like "brittle," or, again, any sentence containing a kind-name is thus paraphrasable or "exponible." Most grammatically simple sentences express non-simple propositions and so are exponible. (Modern logic largely consists in taking exponibility seriously.) And this involves that the isolation of terms is no simple matter either. Grammatically simple nominative-expressions and predicative-expressions do not necessarily or often stand for logically simple constituents or components

of propositions. The classification of types of abstractible factors in simple propositions must be postponed to the classification of the varieties of propositional forms. We require first a docketing of what are expressed by form-words, namely "syncategorematic" words like *all, some, a, the, any, not, if, or, and, than*, etc., together with what are expressed by grammatical constructions, before we can hope to pin down for indexing any irreducible categorematic words.

2. Moreover we need a method for exhibiting and, what is quite different, a method for establishing type-homogeneities and type-heterogeneities. Aristotle's method, so far as he had one, seems to have consisted in collecting the ordinary interrogatives of everyday speech. He then labels his more important types with nouns formed from these interrogative words. But no reason is given for supposing that the Greek stock of interrogative words is either as economical as possible or as rich as might be desired. However his clue, such as it was, was not a completely silly one. For after all "propositional function" is only "question" writ sophisticatedly. The propositional function "*x* is snub-nosed" differs only in practical associations from "Who is snub-nosed?"; and "Socrates is ϕ " exhibits no more or less than "Where is Socrates?" or "What-like (*qualis*) is Socrates?" or "How big is Socrates?" according to the *genre* selected for ϕ .*

In order to state more precisely where Aristotle was on the right track and where his enterprise is unsuccessful, and also because I shall need them later on in the course of this paper, I want here to introduce some technical idioms. It is patent that in a certain sense, sentences contain parts; for two sentences can be partially similar and partially dissimilar. Let us call any partial-expression which can enter into sentences otherwise dissimilar a "sentence-factor." Thus single words will be sentence-factors, but so will phrases of any degree of complexity as well as entire clauses. Thus in the sentence "I am the

* cf. Lewis and Langford *Symbolic Logic*, pp. 332-4; and Carnap on "W . . . questions" in *Logical Syntax of Language*, p. 296.

man who wrote this paper," " I," " the man who," " who wrote this paper," " wrote this paper " are all sentence-factors.

I call them " factors " rather than " parts," since " parts " would suggest, what is false, that the elements so abstracted can exist outside any such combinations as constitute sentences and, what is worse, that they can occur indifferently anywhere in any such combination, *i.e.* that they are both independent and freely shuffleable counters. The word " factor " is intended to suggest, what is true, that they can only occur as factors in complexes of certain sorts, and can only occur in them in certain determinate ways.

Now though sentence-factors cannot be extracted from all combinations, they can be abstracted from any specified combination. If we take any sentence and substitute for any fragment of it a dotted line, or the phrase " so and so," what is left is a sentence-factor with a signal (namely " so and so " or the dotted line), to show that and how the sentence-factor requires completion. But the dotted line, though it requires some complement or other, would tolerate as its complements any out of an indefinite range of factors. Thus " Socrates is" or " I am the man who so and so," or " Such and such implies that tomorrow is Saturday," are not sentences but sentence-frames only, the gaps in which require to be completed by further sentence-factors. The required complements would, of course, have to be of different sorts in the three different frames. " ugly " would complete one, " visited Edinburgh yesterday " would complete the second, and " today's being Tuesday" would complete the third, and none would complete either of the others.

But though not any factor is fit to be the complement of any gap, there is an indefinite range of possible factors of the same pattern which would complete any given gap. So we abstract a factor from the other factor or factors in any concrete sentence by putting dotted lines or " gap-signs " (like " so and so " or " x " or " ϕ " or " p ") in the place or places of the other factor or factors. A gap-

sign is not itself a word, or a phrase or a clause, nor is it the name or description of one ; it is the name or index of a place for one or for any of a range of appropriate sentence-factors.

Now sentences and sentence-factors are English or German, pencilled or whispered or shouted, slangy or pedantic, and so on. What logic is concerned with is something which is indifferent to these differences—namely (it is convenient though often misleading to say), propositions and the parts or factors of propositions. When two sentences of different languages, idioms, authors or dates say the same thing, what they say can be considered in abstraction from the several sayings of it, which does not require us to suppose that it stands to them as a town stands to the several signposts which point to it. And, just as we distinguish propositions from the sentences which propound them, so we must distinguish proposition-factors from the sentence-factors which express them. But again we must not suppose that this means that the world contains cows and earthquakes *and* proposition-factors, any more than we are entitled by the fact that we can distinguish the two faces of a coin to infer that when I have a coin in my hand I have three things in my hand, the coin and its two faces.

Next, we have seen that the gap in a given sentence-frame can be completed by *some* but not by *any* alternative complements. But there are two sorts of “can” here. “So and so is in bed” grammatically requires for complements to the gap indicated by “so and so” nouns, pronouns or substantival phrases such as descriptive phrases. So “Saturday is in bed” breaks no rule of grammar. Yet the sentence is absurd. Consequently the possible complements must be not only of certain grammatical types, they must also express proposition-factors of certain logical types. The several factors in a non-absurd sentence are typically suited to each other ; those in an absurd sentence or some of them are typically unsuitable to each other. To say that a given proposition-factor is of a certain category or type, is to say that its expression could complete certain sentence-frames without absurdity.

If the interpretation that I have given of Aristotle's

doctrine of categories is correct, we can say that in one important respect it was on the right track. For interrogative sentences, when considered in abstraction from their practical role as petitions or commands, are sentence-frames, and the interrogative words in them are gap-signs. And by distinguishing varieties of sorts of questions, Aristotle is using a general method for exhibiting varieties of type of the factors which would be answers to those questions or complements to those gap-signs.

On the other hand his procedure is defective in the following ways. He only attempts to classify the types of a small sub-class of proposition-factors, namely the constituents and components of simple, singular propositions. Let us call these by their traditional (and typically ambiguous) title of "terms." All terms are factors but most factors are not terms. He proffers no test of when a sentence-factor does and when it does not stand for a term, and seems to assume that a grammatically simple word always stands for a constituent or component of a simple proposition. He relies, apparently, solely upon common sense and common parlance for evidence that a given factor is suited to fill a given gap. But worse than this, he does not recognize that the types of factors control and are controlled by the logical form of the propositions into which they can enter, except in the solitary case of particular substances which, he recognizes, cannot occupy the berths of qualities, relations, magnitudes, positions, kinds, etc., in what he takes to be simple propositions.

He, with the logicians of later ages, seems to have thought that while terms are coupled in propositions and while there are various types of terms, yet there is only one sort of coupling. For the very same term which occurs in one proposition as "subject" can occur in another as "predicate."

As any letter of the alphabet may be juxtaposed with any other letter, without modifying the designs of those letters, so it seems to have been thought that there is no interaction between the form of a proposition and the types of the factors composing it. So no connexion was established between the formal properties of propositions

which render inferences embodying them possible or impossible and the formal properties or types of the terms or other factors in them. The syllogistic rules which Aristotle discovered turn on the concepts expressed by such form-words as *all*, *some*, *this*, *not*, *and* and *implies*, but his treatment of them neither infects nor is infected by his classification of types of terms.

It is as though a grammarian were in his first chapter to give definitions of the types of parts of speech, such as nouns, prepositions, verbs, conjunctions, etc., and in a later chapter to give a quite independent discussion to the rules of syntax, when in truth just these rules must already be latent in the notions of noun, verb, conjunction, etc. It is to treat as freely shuffleable counters factors the determinate rôles of which in the combination into which they can enter are just what constitute their types.

To know all about the logical form of a proposition and to know all about the logical types of its factors are to know one and the same thing.*

Kant's Judgment-forms and categories.

Kant's doctrine of categories starts from quite a different quarter from that of Aristotle, and what he lists as categories are quite other than what Aristotle puts into his index. Kant quaintly avers that his purpose is the same as that of Aristotle, but in this he is, save in a very broad and vague sense, mistaken. Unfortunately Kant borrows for three out of his four heads of categories the same labels as Aristotle had used for three of his ten. As we shall see "Quantity," "Quality" and "Relation" mean completely different sorts of things for the two philosophers.

* I apologize, not very humbly, for terminology which, here and elsewhere in this paper I substitute for the terminology of "propositional functions," "variables," "values" and the rest. I do so for the simple reason that this terminology has led to many confusions. Especially it failed to make obvious whether in talking of functions, variables, values, etc., we were talking of certain sorts of expressions or talking *with* certain expressions of certain sorts of things. Should we say that Socrates or "Socrates" is a value of the variable in "x is snub-nosed"? The terminology which I use is meant to be overtly semantic. Its items, too, are meant to be reasonably self-explanatory.

Kant begins by giving a catalogue of judgment forms, a catalogue, that is to say, of the several ways in which one proposition may resemble or differ from another not in topic but in form. He makes no attempt to define the notion of form, or even to justify his catalogue, save by declaring, what is false, that it derived from the findings of traditional logic, which he assumes to be a completed body of ascertained truth. (1) All propositions are determined in respect of "Quantity," that is in respect of the extension of their subjects, and so must be either universal, particular or singular, *i.e.*, of the "all," "some" or "this" form; (2) all propositions are either affirmative, negative or infinite, which are the three "Qualities" of propositions; (3) all propositions are of one of the three "Relation" patterns, "s is P," "if p then q," and "p or q"; and (4) all propositions are of one of the three varieties of "Modality," *i.e.*, of the "is" form, the "may be" form or the "must be" form. These judgment forms are not yet Kant's categories, but they are the source from which he, somewhat mysteriously, proposes to derive or deduce them.

Kant's line of approach was, in principle, much more enlightened than Aristotle's had been. Unfortunately his execution was hopelessly misguided. His sub-variety of "infinite" judgments is a fraud; there are several sorts of "universal" judgment, but the sort which he was considering should come under the heading of hypothetical judgments; the division into assertoric, problematic and apodeictic is wrong-headed, the two last being special cases of hypotheticals; the division into categorical, hypothetical and disjunctive embodies a cross-division and contains one glaring omission, for (a) what he had in mind was the distinction between simple and compound propositions and (b) he omitted from this latter class conjunctive propositions of the "p and q" form. Only of simple propositions is it true that they must be either affirmative or negative and either universal or particular or singular, since in a two-limbed conjunctive, disjunctive or hypothetical proposition, for instance, one of the conjoined propositions may be one while the second is one of the others. The distinction

between the disjunctive and the hypothetical forms is false. No overt distinction is drawn between general and non-general propositions ; no place is found for such propositions as "seven cows are in the field," "most men wear coats," "John is probably dead." And lastly in simple singular propositions no distinction is drawn between attributive and relational propositions ; Aristotle's category of relational predicates is completely ignored. Indeed Kant fails to follow Aristotle's doctrine of categories at all, for he notices no type-differences inside subject-predicate propositions, and purloins the titles "Quality," "Quantity" and "Relation" for his own quite different purposes. Namely, in Aristotle's use "green," "sweet" and "honest" signify qualities, but in Kant's use, "Quality" signifies a proposition's being affirmative or negative. "Quantity" is, for Aristotle, the name of the family of predicates of magnitude or size ; for Kant it is the name of the respect in which propositions are of the "all" or the "some" or the "this" form. Relations, lastly, are in Aristotle's use such predicates as "cousin of," "above," "bigger than," but in Kant's they are what are expressed by such conjunctions as "if," "or" and (he should have added) "and."

But when all this is said, it has to be acknowledged that Kant was recognizing as cardinal in the search for categories or types facts which Aristotle had not noticed at all in this connection. Kant saw that there is a variety of respects in which propositions may be formally similar and dissimilar. As we saw, in Aristotle's doctrine of categories, the rôles of "form-words" like *all*, *some*, *the*, *a*, *any*, *if*, *or*, *and*, *not* are unnoticed, and mediæval followers relegated these words to limbo under the grudging appellation of "syncategorematic." Kant's doctrine (though he does not notice the point) restores them from the limbo of logic to its workshop.

Aristotle seems generally to suppose that while there is a moderate variety of types of factors, yet there is only one sort of coupling to which they are subject. (In his doctrine of Predicables he half sees that in general propositions there are different sorts of coupling, but this is not allowed

to modify his theory of terms.) Kant sees that there is a galaxy of sorts of coupling and that these determine or are determined by the sorts of factors that can be coupled. Aristotle's is an "alphabetic" theory of factors and a simple "juxtaposition" theory of their combinations; Kant's is a "syntactical" theory about the combinations of factors, and consequently a "syntactical" theory about the types of those factors—or so I interpret his cryptic utterances about "functions of unity."

However Kant's categories are not identical with his forms of judgment. They are, in some obscure way, the projections of these logical forms upon the field of natural things and events. Natural facts, facts that is that are establishable by observation or by memory of or induction from or causal inference from observations, all embody certain principles of structure, which somehow derive from the items in the table of judgment-forms. Nature consists of things possessing extensive and intensive magnitudes, being in states at particular moments of time and undergoing mutations or perpetuations of state according to causal laws. Everything empirical must and nothing non-empirical can embody these categories. So metaphysical propositions trespass against category-rules.

The mysterious Metapsychology, by means of which Kant tries to prove both that Nature must be so constituted and that we can know that it must be so constituted, need not be considered here. What would be relevant would be an exposition of the differences that Kant professes to find between his logical types and his categories or natural types. It looks as though he confusedly believed that there exist two sorts of facts or propositions, logicians' facts or propositions and scientists' facts or propositions, and that the forms of the latter are step-children of those of the former. But this would be an absurd view, for in fact the logicians' forms are simply what they abstract from ranges of partially similar and partially dissimilar propositions which hail, very likely, directly from the text books of scientists, historians, explorers, mathematicians or theologians. So the alleged distinction is, I think, a bogus one.

Kant contributes nothing to the technical problem how to exhibit or symbolize type-homogeneities and heterogeneities in abstraction from the concrete factors which exemplify them. Nor does he explain how they are established, save by recommending us to read traditional logic.

Before leaving the history of the topic, we should notice one presupposition which Aristotle and Kant share, which is, I believe, unreflectively shared by a number of contemporary philosophers. Namely, it was supposed that there exists a finite catalogue of categories or types ; for instance, that there exist just ten (or eight) types of terms, or that there exist just twelve judgment patterns, just as there exist just twenty-six letters in the English alphabet, just sixty-four squares on the chess-board and just six species of chessmen. This seems to be pure myth. There are various gambits at chess, but there is no finite roster of them ; and there are various grammatical constructions of English sentences, but there can be no complete table of those varieties.

Scholasticism is the belief in some decalogue of categories, but I know of no grounds for this belief.

It follows that I do not think that we can ever say of a given code-symbolism in formal logic that its symbols are now adequate for the symbolization of all possible differences of type or form. It may, of course, be adequate for the exhibition of all the type-differences that concern us in the course of some particular enquiry.

Generalization of the Topic.

When a sentence is (not true or false but) nonsensical or absurd, although its vocabulary is conventional and its grammatical construction is regular, we say that it is absurd because at least one ingredient expression in it is not of the right type to be coupled or to be coupled in that way with the other ingredient expression or expressions in it. Such sentences, we may say, commit type-trespasses or break type-rules. Latterly the attention of logicians has been focused on certain sorts of type-trespasses, like those which are committed by " I am now lying " and " ' Heterological ' "

is heterological." These sorts are interesting, because their absurdities are not obvious but manifest themselves in the generation of contradictions or vicious circles, whereas "Saturday is in bed" is obviously absurd before any contradictions are seen to result from the hypothesis that it is true.

Moreover we can be actually led by seemingly valid arguments to propounding propositions of the former sorts, whereas only the deliberate intention to produce balderdash would get us to formulate sentences of the latter sort. That is, some type-trespases are insidious and others are not. It is the insidious ones which force us to consider type-rules; the others we only attend to because we are already considering type-rules. But it would be a mistake to restrict the theory of types to the theory of certain special type-rules.

To ask the question To what type or category does so and so belong? is to ask In what sorts of true or false propositions and in what positions in them can so and so enter? Or, to put it semantically, it is to ask In what sorts of non-absurd sentences and in what positions in them can the expression "so and so" enter? and, conversely, What sorts of sentences would be rendered absurd by the substitution for one of their sentence-factors of the expression "so and so"? I adopt the word "absurd" in preference to "nonsensical" or "meaningless" for the reason that both the two last words are sometimes used for noises like "brillig" and "abracadabra," and sometimes for collocations of words having no regular grammatical construction. Moreover, both have recently been adopted for polemical purposes in aid of a special theory. "Absurd" has helpful associations with the *reductio ad absurdum*, and even its nuance of ridiculousness is useful rather than the reverse, for so many jokes are in fact type-pranks.

What are Types Types of?

Only expressions can be affirmed or denied to be absurd. Nature provides no absurdities; nor can we even say that thoughts such as beliefs or supposals or conceptions are or are not absurd. For what is absurd is unthinkable.

So it is, on the whole, prudent to talk logic in the semantic idiom and to formulate our theories and enquiries in such a way as to advertize all the time that we are considering whether such and such expressions may or may not be coupled in such and such ways with other expressions.

The danger is, of course, that we shall be taken and shall unwittingly take ourselves to be talking grammar, as if it was all part of one topic to say "Plural nouns cannot have singular verbs" and "The dotted line in '. . . . is false' can be completed with 'What you are now saying' and cannot be completed with 'What I am now saying'"

We try, then, to say that absurdities result from the improper coupling not of expressions but of what the expressions signify, though the coupling and mis-coupling of them is effected by operating upon their expressions.

But there is not and cannot be any univocal title for all the *significata* of expressions, since if there was such a title, all these *significata* would be of one and the same type. And just this is what was at bottom wrong with the Lockean terminology of "ideas" and the Meinongian terminology of "objects," words which were employed to perform exactly this impossible task.

Other commonly used titles have extra nuisances as well. "Terms" retains some of its traditional associations and should be used, if at all, for particulars-or-qualities-or-relations, etc. "Concepts" does not cover either particulars or entire propositions or even complexes of concepts. So I use "proposition-factor" (intending it to have all possible type-ambiguities), to collect whatever is signified by any expression, simple or complex, which can be a complement to a gap-sign in some sentence-frame or other (or which can be a value of a variable in some propositional function or other). And, if asked such questions as Do proposition-factors exist? How many of them are there? Are they mental? What are they like? my answer is "All such questions are ridiculous, since 'factor' is and is meant to be the meeting-place of all type-ambiguities."

Of course we could dispense with any such word. Its functions are purely stenographic. Questions about the

types of factors are, in a way, just questions about the possibilities of co-significance of certain classes of expressions. But just as the "factor" idiom (like the "idea" idiom) is liable to entrap us in myth, so the semantic idiom is liable to entrap us in a confusion between logical and grammatical questions.

Two proposition-factors are of different categories or types, if there are sentence-frames such that when the expressions for those factors are imported as alternative complements to the same gap-signs, the resultant sentences are significant in the one case and absurd in the other. It is tempting but not quite correct to say, as the converse of this, that two factors are of the same type if there is any case where both can fill the same gap. For "I" and "the writer of this paper" can be alternative nominatives to hosts of significant sentences but both cannot fill the gap in ". . . . never wrote a paper." It follows that though nearly, it is not quite true to say that every gap-sign in its context in a determinate sentence-frame indicates the category of all its possible complements. But wherever a particular gap-sign is thus tolerant of typically dissimilar complements, that gap-sign has typical ambiguity which a better symbolism would escape. For the fact that a given gap in a sentence-frame *can* be filled by complements between which there are certain differences of form is itself a fact about the types of those different complements.

The Genesis of Type-riddles.

How do we come to be exercised about the forms of propositions or the types of proposition-factors? Or, to put it in a less new-fangled way, what makes it urgent for us to find definitions or analyses of concepts? For we do not gratuitously rummage in dictionaries or encyclopædias after notions on which to perform elucidations. Type-problems seem to be forced upon us in two main ways.

(1) There are concepts with which we are perfectly familiar and which we are perfectly competent to employ—incessantly occurring, for instance, in questions which we know quite well how to solve. Yet whole classes of ordinary propositions embodying one or more of such concepts, some

of which propositions we have perfectly good reasons for accepting as true, are ruled out as false by other propositions, no less well authenticated, embodying other equally familiar concepts. In a word, we are confronted by antinomies. We are sure that some out of one family of propositions are true and that some out of another family are true, yet the truth of any from the one family seems flatly to contradict all out of the other. I see a bent stick and the stick is straight ; I am to blame for an action, and the action issued from a character which my forbears bequeathed and my school moulded, and so on.

Now if the apparent contradiction or, rather, class of contradictions is resolvable, it can only be because the logical forms of the conflicting propositions are not what we had supposed, since it is only in virtue of the forms of propositions or the types of their factors that they do (or do not) imply (or imply the negatives of) one another.

(2) Then, when we have begun to explore the mechanics of some of our concepts and propositions, we find ourselves embarrassed by some purely technical perplexities. We are not quite sure how to use our own professional implements. But we only want to be sure of the designs of our trade-keys because we want to use them upon locks which were recalcitrant before we started our operations—unless we are carried away by virtuosity. Enquiries such as this one, into the nature of categories, or into the species of relations are in fact such technical questions. But *any* uncharted concept is liable to generate antinomies, for ignorance of its chart is ignorance of some of the implications and compatibilities of the propositions containing it. Concepts of common sense, of the sciences and of philosophy itself can and do all generate antinomies. The problem of the internality of relations arose out of antinomies resulting from the philosophers' technical concept of *relation*.

How are Types Determined ?

It has long been known that what a proposition implies, it implies in virtue of its form. The same is true of what it is compatible and incompatible with. Let us give the label "liaisons" to all the logical relations of a proposition,

namely what it implies, what it is implied by, what it is compatible with and what it is incompatible with. Now, any respect in which two propositions differ in form will be reflected in differences in their liaisons. So two propositions which are formally similar in all respects save that one factor in one is different in type from a partially corresponding factor in the other, will have liaisons which are correspondingly dissimilar. Indeed the liaisons of a proposition do not merely *reflect* the formal properties of the proposition and, what this involves, those of all its factors. In a certain sense, they are the same thing. To know all about its liaisons is to know all about the formal structure of the proposition, and *vice versa*. Though I can obviously entertain or believe a proposition without having yet noticed all its liaisons. Indeed I must grasp it before I can consider them, otherwise I could not be the victim of antinomies.

The operation of extracting the type of a factor cannot exclude the operation of revealing the liaisons of propositions embodying it. In essence they are one operation. Of course, with the familiar sorts of propositions upon which logicians have worked for centuries or decades, we short-circuit the enquiry, by subsuming them direct under the appropriate formulæ. But to be told that a proposition is of the form "S a P" or of the form " $\text{Ex. } \phi x. \sim \psi x$ " is to be told nothing unless we are able to work with the code-symbols according to the rules of their use, which means unless we know how to read off the liaisons, the patterns of which are what these symbols prescribe.

Now the operation of formulating the liaisons of a proposition just is the activity of ratiocination or argumentation (in which of course there need not be, though there may be, a polemical purpose). And this is why philosophizing is arguing, and it is just this element of ratiocination which, as a rule, is left out of the latter-day definitions of philosophy as "analysis." For these generally suggest that analyzing is some sort of paraphrasing. But some sorts of paraphrase throw no philosophical light, for they fail to exhibit just those features of propositions and their factors, obscurity about which involves us in antinomies,

namely their liaisons which flow from or constitute their logical types and forms. Mere increase of prolixity is not enough. When an argument is a philosophical one and when not, are further questions the discussion of which would not here be in place.

The Type of Category-propositions.

I call a proposition a "category-proposition" which asserts something about the logical type of a factor or set of factors. Some types have been officially recognized and endowed with trade-names, like "quality," "state," "substance," "number," "logical construction," "category," etc. We could call these "category-words." Carnap misleadingly calls them "universal words." But propositions asserting that factors are of named types differ only in brevity of expression from propositions asserting that factors are of described types.

All such propositions are philosophers' propositions (not necessarily, of course, of professional or paid philosophers), and the converse is also, I think, true.

Now assertions about the types of factors are, as we have seen, assertions about what sorts of combinations of them with other factors would and what would not produce absurdities. And as only collocations of symbols can be asserted to be absurd or, consequently, denied to be absurd, it follows that category-propositions are semantic propositions. This does not imply that they are of the same type as the propositions of philologists, grammarians or lexicographers. There are not English category-propositions as opposed to German ones, or Occidental as opposed to Oriental. Nor does it imply that they can say nothing about the "nature of things." If a child's perplexity why the Equator can be crossed but not seen, or why the Cheshire Cat could not leave its grin behind it is perplexity about the "nature of things," then certain category-propositions will give the required information about the nature of things. And the same will hold good of less frivolous type-perplexities. But what are the tests of absurdity?