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the same whatever the intellectual formulation of it given by theology. And if we are to distinguish the functions of ethics and theology I should say that it is the function of ethics to formulate and make explicit the nature and conditions of good conduct, and the function of theology to work out the relations presupposed and revealed in such conduct between man and God.

VI.—SYMPOSIUM: "FACTS AND PROPOSITIONS."

By F. P. RAMSEY and G. E. MOORE.

I. *By* F. P. RAMSEY.

THE problem with which I propose to deal is the logical analysis of what may be called by any of the terms judgment, belief, or assertion. Suppose I am at this moment judging that Cæsar was murdered; then it is natural to distinguish in this fact on the one side either my mind, or my present mental state, or words or images in my mind, which we will call the mental factor or factors, and on the other side either Cæsar or Cæsar's murder, or Cæsar and murder, or the proposition Cæsar was murdered, or the fact that Cæsar was murdered, which we will call the objective factor or factors, and to suppose that the fact that I am judging that Cæsar was murdered consists in the holding of some relation or relations between these mental and objective factors. The questions that arise are in regard to the nature of the two sets of factors and of the relations between them, the fundamental distinction between these elements being hardly open to question.

Let us begin with the objective factor or factors; the simplest view is that there is one such factor only, a proposition, which may be either true or false, truth and falsity being unanalysable attributes. This was at one time the view of Mr. Russell, and in his essay, "On the Nature of Truth and Falsehood,"* he explains the reasons which led him to abandon it. These were, in brief, the incredibility of the existence of such objects as "that Cæsar died

* In *Philosophical Essays*, 1910.

in his bed," which could be described as objective falsehoods, and the mysterious nature of the difference, on this theory, between truth and falsehood. He therefore concluded, in my opinion rightly, that a judgment had no single object, but was a multiple relation of the mind or mental factors to many objects, those, namely, which we should ordinarily call constituents of the proposition judged.

There is, however, an alternative way of holding that a judgment has a single object, which it would be well to consider before we pass on. In the above-mentioned essay Mr. Russell asserts that a perception, which unlike judgment he regards as infallible, has a single object, for instance, the complex object "knife-to-left-of-book." This complex object can, I think, be identified with what many people (and Mr. Russell now) would call the *fact* that the knife is to the left of the book; we could, for instance, say that we perceived this fact. And just as, if we take any true proposition such as that Cæsar did not die in his bed, we can form a corresponding phrase beginning with "the fact that" and talk about the fact that he did not die in his bed, so Mr. Russell supposed that to any true proposition there corresponded a complex object.

Mr. Russell, then, held that the object of a perception was a fact, but that in the case of judgment the possibility of error made such a view untenable, since the object of a judgment that Cæsar died in his bed could not be the fact that he died in his bed, as there was no such fact. It is, however, evident that this difficulty about error could be removed by postulating for the case of judgment two different relations between the mental factors and the fact, one occurring in true judgments, the other in false. Thus, a judgment that Cæsar was murdered and a judgment that Cæsar was not murdered would have the same object, the fact that Cæsar was murdered, but differ in respect of the relations between the mental factor and this object. Thus, in the *Analysis*

of *Mind*,* Mr. Russell speaks of beliefs as either pointing towards or pointing away from facts. It seems to me, however, that any such view either of judgment or of perception would be inadequate for a reason, which, if valid, is of great importance. Let us for simplicity take the case of perception, and assuming for the sake of argument that it is infallible, consider whether "he perceives that the knife is to the left of the book" can really assert a dual relation between a person and a fact. Suppose that I who make the assertion cannot myself see the knife and book, ~~that~~ the knife is really to the right of the book; but that through some mistake I suppose that it is on the left and that he perceives it to be on the left, so that I assert falsely "he perceives that the knife is to the left of the book." Then my statement, though false, is significant, and has the same meaning as it would have if it were true; this meaning cannot therefore be that there is a dual relation between the person and something (a fact) of which "that the knife is to the left of the book" is the name, because there is no such thing. The situation is the same as that with descriptions; "the King of France is wise" is not nonsense, and so "the King of France," as Mr. Russell has shown, is not a name but an incomplete symbol, and the same must be true of "the King of Italy." So also "that the knife is to the left of the book," whether it is true or false, cannot be the name of a fact.

But, it will be asked, why should it not be a description of a fact? If I say, "he perceives that the knife is to the left of the book," I mean that he perceives a fact, which is not named but described as of a certain sort, and the difficulty will disappear when my assertion is analysed according to Mr. Russell's theory of descriptions. Similarly, it will be said, "the death of Cæsar"

* P. 272.—It should be observed that in the *Analysis of Mind*, a "belief" is what we call a mental factor, not the whole complex mental factors—relations—objective factors.

is a description of an event, and "the fact that Cæsar died" is only an alternative expression for "the death of Cæsar."

Such an objection is plausible but not, in my opinion, valid. The truth is that a phrase like "the death of Cæsar" can be used in two different ways; ordinarily, we use it as the description of an event, and we could say that "the death of Cæsar" and "the murder of Cæsar" were two different descriptions of the same event. But we can also use "the death of Cæsar" in a context like "he was aware of the death of Cæsar" meaning "he was aware that Cæsar had died"; here (and this is the sort of case which occurs in the discussion of cognition) we cannot regard "the death of Cæsar" as the description of an event; if it were, the whole proposition would be, "There is an event *E* of a certain sort, such that he is aware of *E*," and would be still true if we substituted another description of the same event, e.g., "the murder of Cæsar." That is, if his awareness has for its object an event described by "the death of Cæsar," then, if he is aware of the death of Cæsar, he must also be aware of the murder of Cæsar, for they are identical. But, in fact, he could quite well be aware that Cæsar had died, without knowing that he had been murdered, so that his awareness must have for its object not merely an event but an event and a character also.

The connection between the event which was the death of Cæsar and the fact that Cæsar died is, in my opinion, this: "That Cæsar died" is really an existential proposition, asserting the existence of an event of a certain sort, thus resembling "Italy has a King," which asserts the existence of a man of a certain sort. The event which is of that sort is called the death of Cæsar and must no more be confused with the fact that Cæsar died, than the King of Italy should be confused with the fact that Italy has a King.

We have seen, then, that a phrase beginning "the fact that" is not a name, and also not a description; it is, therefore, neither

a name nor a description of any genuine constituent of a proposition, and so a proposition about "the fact that *aRb*" must be analysed into (1) the proposition *aRb*, (2) some further proposition about *a*, *R*, *b*, and other things; and an analysis of cognition in terms of relations to facts cannot be accepted as ultimate. We are driven, therefore, to Mr. Russell's conclusion that a judgment* has not one object but many, to which the mental factor is multiply related; but to leave it at that, as he did, cannot be regarded as satisfactory. There is no reason to suppose the multiple relation simple, it may, for instance, result from the combination of dual relations between parts of the mental factor and the separate objects, and it is desirable that we should try to find out more about it, and how it varies when the form of proposition believed is varied. Similarly, a theory of descriptions which contented itself with observing that "the King of France is wise" could be regarded as asserting a possibly complex multiple relation between kingship, France, and wisdom, would be miserably inferior to Mr. Russell's theory, which explains exactly what relation it is.

But before we proceed further with the analysis of judgment, it is necessary to say something about truth and falsehood, in order to show that there is really no separate problem of truth but merely a linguistic muddle. Truth and falsity are ascribed primarily to propositions. The proposition to which they are ascribed may be either explicitly given or described. Suppose first that it is explicitly given; then it is evident that "it is true that Cæsar was murdered" means no more than that Cæsar was murdered, and "it is false that Cæsar was murdered" means that Cæsar was not murdered. They are phrases which we sometimes use for emphasis or for stylistic reasons, or to indicate the position occupied by the statement in our argument. So also we can say

* And, in our view, any other form of knowledge or opinion that something is the case.

“it is a fact that he was murdered” or “that he was murdered is contrary to fact.”

In the second case in which the proposition is described and not given explicitly, we have perhaps more of a problem, for we get statements from which we cannot in ordinary language eliminate the words “true” and “false.” Thus if I say “he is always right” I mean that the propositions he asserts are always true, and there does not seem to be any way of expressing this without using the word “true.” But suppose we put it thus “For all p , if he asserts p , p is true,” then we see that the propositional function p is true is simply the same as p , as *e.g.* its value “Cæsar was murdered is true,” is the same as “Cæsar was murdered.” We have in English to add “is true” to give the sentence a verb, forgetting that “ p ” already contains a (variable) verb. This may perhaps be made clearer by supposing, for a moment, that only one form of proposition is in question, say the relational form aRb ; then “he is always right” could be expressed by “For all a , R , b , if he asserts aRb , then aRb ” to which “is true” would be an obviously superfluous addition. When all forms of proposition are included the analysis is more complicated but not essentially different, and it is clear that the problem is not as to the nature of truth and falsehood, but as to the nature of judgment or assertion, for what is difficult to analyse in the above formulation is “he asserts aRb .”

It is, perhaps, also immediately obvious that if we have analysed judgment we have solved the problem of truth; for taking the mental factor in a judgment (which is often itself called a judgment), the truth or falsity of this depends only on what proposition it is that is judged, and what we have to explain is the meaning of saying that the judgment is a judgment that a has R to b , *i.e.* is true if aRb , false if not. We can, if we like, say that it is true if there exists a corresponding fact that a has R to b , but this is essentially not an analysis but a periphrasis.

for “the fact that a has R to b exists” is no different from “ a has R to b .”

In order to proceed further, we must now consider the mental factors in a belief. Their nature will depend on the sense in which we are using the ambiguous term belief: it is, for instance, possible to say that a chicken believes a certain sort of caterpillar to be poisonous, and mean by that merely that it abstains from eating such caterpillars on account of unpleasant experiences connected with them. The mental factors in such a belief would be parts of the chicken’s behaviour, which are somehow related to the objective factors, *viz.*, the kind of caterpillars and poisonousness. An exact analysis of this relation would be very difficult, but it might well be held that in regard to this kind of belief the pragmatist view was correct, *i.e.* that the relation between the chicken’s behaviour and the objective factors was that the actions were such as to be useful if, and only if, the caterpillars were actually poisonous. Thus any actions for whose utility p is a necessary and sufficient condition might be called a belief that p , and so would be true if p , *i.e.* if they are useful.*

But without wishing to depreciate the importance of this kind of belief, it is not what I wish to discuss here. I prefer to deal with those beliefs which are expressed in words, or possibly images or other symbols, consciously asserted or denied; for these, in my view, are the most proper subject for logical criticism.

The mental factors of such a belief I take to be words, spoken aloud or to one’s self or merely imagined, connected together and accompanied by a feeling or feelings of belief or disbelief, related to them in a way I do not propose to discuss.† I shall

* It is useful to believe aRb would mean It is useful to do things which are useful if, and only if, aRb ; which is evidently equivalent to aRb .

† I speak throughout as if the differences between belief, disbelief, and mere consideration lay in the presence or absence of “feelings”;

suppose for simplicity that the thinker with whom we are concerned uses a systematic language without irregularities and with an exact logical notation like that of *Principia Mathematica*. The primitive signs in such a language can be divided into names, logical constants, and variables. Let us begin with names; each name means an object, meaning being a dual relation between them. Evidently name, meaning, relation, and object may be really all complex, so that the fact that the name means the object is not ultimately of the dual relational form but far more complicated.* Nevertheless, just as in the study of chess, nothing is gained by discussing the atoms of which the chessmen are composed, so in the study of logic nothing is gained by entering into the ultimate analysis of names and the objects they signify. These form the elements of the thinker's beliefs, in terms of which the various logical relations of one belief to another can all be stated, and their internal constitution is immaterial.

By means of names alone the thinker can form what we may call atomic sentences, which from our formal standpoint offer no very serious problem. If a , R , and b are things which are simple in relation to his language, *i.e.* of the types for instances of which he has names, he will believe that aRb by having names for a , R , and b connected in his mind and accompanied by a feeling of belief. This statement is, however, too simple since the names must be united in a way appropriate to aRb rather than to bRa ; this can be explained by saying that the name of R is not the word " R ," but the relation we make between " a " and " b " by writing " aRb ." The sense in which this relation unites " a " and " b ," then determines whether it is a belief

but any other word may be substituted for "feeling" which the reader prefers, *e.g.* "specific quality" or "act of assertion" and "act of denial."

* This is most obvious in the case of names, which generally consist of letters, so that their complexity is evident.

that aRb or that bRa . There are various other difficulties of the same sort, but I propose to pass on to the more interesting problems which arise when we consider more complicated beliefs, which require for their expression not only names but logical constants as well, so that we have to explain the mode of significance of such words as "not" and "or."

One possible explanation* is that they, or some of them, *e.g.* "not" and "and" in terms of which the others can be defined, are the names of relations, so that the sentences in which they occur are similar to atomic ones except that the relations they assert are logical instead of material. On this view every proposition is ultimately affirmative, asserting a simple relation between simple terms, or a simple quality of a simple term. Thus, "this is not-red" asserts a relation of negation between this and redness, and "this is not not-red" another relation of negation between this, redness and the first relation of negation.

This view requires such a different attitude to logic from mine that it is difficult for me to find a common basis from which to discuss it. There are, however, one or two things I should like to say in criticism—first, that I find it very unsatisfactory to be left with no explanation of formal logic except that it is a collection of "necessary facts." The conclusion of a formal inference must, I feel, be in some sense contained in the premisses and not something new; I cannot believe that from one fact, *e.g.* that a thing is red, it should be possible to infer an infinite number of different facts, such as that it is not not-red, and that it is both red and not not-red. These, I should say, are simply the same fact expressed by other words; nor is it inevitable that there should be all these different ways of saying the same thing. We might, for instance, express negation not by inserting a word "not," but by writing

* See, especially, J. A. Chadwick, "Logical Constants," *Mind*, Jan., 1927.

what we negate upside down. Such a symbolism is only inconvenient because we are not trained to perceive complicated symmetry about a horizontal axis, and if we adopted it we should be rid of the redundant "not-not," for the result of negating the sentence "*p*" twice would be simply the sentence "*p*" itself.

It seems to me, therefore, that "not" cannot be a name (for if it were, "not-not-*p*" would have to be about the object not and so different in meaning from "*p*"), but must function in a radically different fashion. It follows that we must allow negations and disjunctions to be ultimately different from positive assertions and not merely the assertions of different but equally positive relationships. We must, therefore, abandon the idea that every proposition asserts a relation between terms, an idea that seems as difficult to discard as the older one that a proposition always asserted a predicate of a subject.

Suppose our thinker is considering a single atomic sentence, and that the progress of his meditation leads either to his believing it or his disbelieving it. These may be supposed to consist originally in two different feelings related to the atomic sentence, and in such a relation mutually exclusive; the difference between assertion and denial thus consisting in a difference of feeling and not in the absence or presence of a word like "not." Such a word will, however, be almost indispensable for purposes of communication, belief in the atomic sentence being communicated by uttering it aloud, disbelief by uttering it together with the word "not." By a sort of association this word will become part of the internal language of our thinker, and instead of feeling disbelief towards "*p*" he will sometimes feel belief towards "not-*p*."

If this happens we can say that disbelieving "*p*" and believing "not-*p*" are equivalent occurrences, but to determine what we mean by this "equivalent" is, to my mind, the central

difficulty of the subject. The difficulty exists on any theory, but is particularly important on mine, which holds that the significance of "not" consists not in a meaning relation to an object, but in this equivalence between disbelieving "*p*" and believing "not-*p*."

It seems to me that the equivalence between believing "not-*p*" and disbelieving "*p*" is to be defined in terms of causation, the two occurrences having in common many of their causes and many of their effects. There would be many occasions on which we should expect one or other to occur, but not know which, and whichever occurred we should expect the same kind of behaviour in consequence. To be equivalent, we may say, is to have in common certain causal properties, which I wish I could define more precisely. Clearly they are not at all simple; there is no uniform action which believing "*p*" will always produce. It may lead to no action at all, except in particular circumstances, so that its causal properties will only express what effects result from it when certain other conditions are fulfilled. And, again, only certain sorts of causes and effects must be admitted; for instance, we are not concerned with the factors determining, and the results determined by, the rhythm of the words.

Feeling belief towards the words "not-*p*" and feeling disbelief towards the words "*p*" have then in common certain causal properties. I propose to express this fact by saying that the two occurrences express the same attitude, the attitude of disbelieving *p* or believing not-*p*. On the other hand, feeling belief towards "*p*" has different causal properties and so expresses a different attitude, the attitude of believing *p*. It is evident that the importance of beliefs and disbeliefs lies not in their intrinsic nature but in their causal properties, *i.e.* their causes and more especially their effects. For why should I want to have a feeling of belief towards names "*a*," "*R*," and "*b*"

when aRb , and of disbelief when $\text{not-}aRb$, except because the effects of these feelings are more often satisfactory than those of the alternative ones

If then I say about someone whose language I do not know "he is believing that $\text{not-}aRb$," I mean that there is occurring in his mind such a combination of a feeling and words as expresses the attitude of believing $\text{not-}aRb$, *i.e.*, has certain causal properties, which can *in this simple case** be specified as those belonging to the combination of a feeling of disbelief and names for a , R , and b , or, in the case of one who uses the English language, to the combination of a feeling of belief, names for a , R , and b , and an odd number of "not"s. Besides this, we can say that the causal properties are connected with a , R , and b in such a way that the only things which can have them must be composed of names for a , R , and b . (This is the doctrine that the meaning of a sentence must result from the meaning of the words in it.)

When we are dealing with one atomic proposition only, we are accustomed to leave to the theory of probability the intermediate attitudes of partial belief, and consider only the extremes of full belief and full disbelief. But when our thinker is concerned with several atomic propositions at once, the matter is more complicated, for we have to deal not only with completely definite attitudes, such as believing p and disbelieving q , but also with relatively indefinite attitudes, such as believing that either p or q is true, but not knowing which. Any such attitude can, however, be defined in terms of the truth-possibilities of atomic propositions with which it agrees and disagrees. Thus, if we have n atomic propositions, with regard to their truth and falsity

* In the more complicated cases treated below a similar specification seems to me impossible, except by reference to a particular language. There are ways in which it can apparently be done, but, I think, they are illusory.

there are 2^n mutually exclusive possibilities, and a possible attitude is given by taking any set of these and saying that it is one of this set which is in fact realised, not one of the remainder. Thus, to believe p or q is to express agreement with the possibilities p true and q true, p false and q true, p true and q false, and disagreement with the remaining possibility p false and q false. To say that feeling belief towards a sentence expresses such an attitude, is to say that it has certain causal properties which vary with the attitude, *i.e.* with which possibilities are knocked out and which, so to speak, are still left in. Very roughly the thinker will act in disregard of the possibilities rejected, but how to explain this accurately I do not know.

In any ordinary language such an attitude can be expressed by a feeling of belief towards a complicated sentence formed out of the atomic sentences by logical conjunctions; which attitude it is, depending not on the feeling but on the form of the sentence. We can therefore say elliptically that the sentence expresses the attitude, and that the meaning of a sentence is agreement and disagreement with such and such truth-possibilities, meaning by that that one who asserts or believes the sentence so agrees and disagrees.

In most logical notations the meaning of the sentence is determined by logical operation signs that occur in it, such as "not" and "and." These mean in the following way: "not- P ," whether " P " be atomic or not, expresses agreement with the possibilities with which " P " expresses disagreement and vice versa. " P and Q " expresses agreement with such possibilities, as both " P " and " Q " express agreement with, and disagreement with all others. By these rules the meaning of any sentence constructed from atomic sentences by means of "not" and "and" is completely determined; the meaning of "not" being thus a law determining the attitude expressed by "not- P " in terms of that expressed by " P ."

This could, of course, only be used as a *definition* of "not" in a symbolism based directly on the truth-possibilities. Thus in the notation explained on page 95 of Mr. Wittgenstein's *Tractatus Logico-Philosophicus*, we could define "not- P " as the symbol obtained by interchanging the T's and blanks in the last column of " P ." Ordinarily, however, we always use a different sort of symbolism in which "not" is a primitive sign which cannot be defined without circularity; but even in this symbolism we can ask how "'nicht' means not" is to be analysed, and it is this question which the above remarks are intended to answer. In our ordinary symbolism the truth-possibilities are most conveniently expressed as conjunctions of atomic propositions and their negatives, and any proposition will be expressible as a disjunction of the truth-possibilities with which it agrees.

If we apply the logical operations to atomic sentences in an indiscriminate manner, we shall sometimes obtain composite sentences which express no attitude of belief. Thus " p or not- p " excludes no possibility and so expresses no attitude of belief at all. It should be regarded not as a significant sentence but a sort of degenerate case,* and is called by Mr. Wittgenstein a *tautology*. It can be added to any other sentence without altering its meaning, for " q : p or not- p " agrees with just the same possibilities as " q ." The propositions of formal logic and pure mathematics are in this sense tautologies, and that is what is meant by calling them "necessary truths."

Similarly, " p and not- p " excludes every possibility and expresses no possible attitude: it is called a *contradiction*.

In terms of these ideas we can explain what is meant by logical, mathematical, or formal inference or implication. The inference from " p " to " q " is formally guaranteed when "if p , then q " is a tautology, or when the truth-possibilities with

* In the mathematical sense in which two lines or two points form a degenerate conic.

which " p " agrees are contained among those with which " q " agrees. When this happens, it is always possible to express " p " in the form " q and r ," so that the conclusion " q " can be said to be already contained in the premiss.

Before passing on to the question of general propositions I must say something about an obvious difficulty. We supposed above that the meanings of the names in our thinker's language might be really complex, so that what was to him an atomic sentence might after translation into a more refined language appear as nothing of the sort. If this were so it might happen that some of the combinations of truth and falsity of his atomic propositions were really self-contradictory. This has actually been supposed to be the case with "blue" and "red," and Leibniz and Wittgenstein have regarded "this is both blue and red" as being really self-contradictory, the contradiction being concealed by defective analysis. Whatever may be thought of this hypothesis, it seems to me that formal logic is not concerned with it, but presupposes that all the truth-possibilities of atomic sentences are really possible, or at least treats them as being so. No one could say that the inference from "this is red" to "this is not blue" was formally guaranteed like the syllogism. If I may revert to the analogy of chess this assumption might perhaps be compared to the assumption that the chessmen are not so strongly magnetised as to render some positions on the board mechanically impossible, so that we need only consider the restrictions imposed by the rules of the game, and can disregard any others which might conceivably arise from the physical constitution of the men.

We have so far confined ourselves to atomic propositions and those derived from them by any finite number of truth-operations, and unless our account is to be hopelessly incomplete we must now say something about general propositions such as are expressed in English by means of the words "all" and "some," or in the notation of *Principia Mathematica* by apparent variables.

About these I adopt the view of Mr. Wittgenstein* that "for all x, fx " is to be regarded as equivalent to the logical product of all the values of " fx " i.e. to the combination fx_1 and fx_2 and fx_3 and . . . , and that "there is an x such that fx " is similarly their logical sum. In connection with such symbols we can distinguish first the element of generality, which comes in in specifying the truth-arguments, which are not, as before, enumerated, but determined as all values of a certain propositional function; and, secondly, the truth-function element which is the logical product in the first case and the logical sum in the second.

What is novel about general propositions is simply the specification of the truth-arguments by a propositional function instead of by enumeration. Thus general propositions, just like molecular ones, express agreement and disagreement with the truth-possibilities of atomic propositions, but they do this in a different and more complicated way. Feeling belief towards "for all x, fx " has certain causal properties which we call its expressing agreement only with the possibility that all the values of fx are true. For a symbol to have these causal properties it is not necessary, as it was before, for it to contain names for all the objects involved combined into the appropriate atomic sentences, but by a peculiar law of psychology it is sufficient for it to be constructed in the above way by means of a propositional function.

As before, this must not be regarded as an attempt to define "all" and "some," but only as a contribution to the analysis of "I believe *that all (or some)*."

This view of general propositions has the great advantage that it enables us to extend to them Mr. Wittgenstein's account of logical inference, and his view that formal logic consists of tautologies. It is also the only view which explains how " fa " can be inferred from "for all x, fx ," and "there is an x such that

fx " from fa . The alternative theory that "there is an x such that fx " should be regarded as an atomic proposition of the form " $F(f)$ " (f has application) leaves this entirely obscure; it gives no intelligible connection between a being red and red having application, but abandoning any hope of explaining this relation is content merely to label it "necessary."

Nevertheless, I anticipate that objection will be made on the following lines: firstly, it will be said that a cannot enter into the meaning of "for all x, fx ," because I can assert this without ever having heard of a . To this I answer that this is an essential part of the utility of the symbolism of generality, that it enables us to make assertions about things we have never heard of and so have no names for. Besides, that a is involved in the meaning of "for all x, fx " can be seen from the fact that if I say "for all x, fx ," and someone replies "not- fa ," then even though I had not before heard of a , he would undoubtedly be contradicting me.

The second objection that will be made is more serious; it will be said that this view of general propositions makes what things there are in the world not, as it really is, a contingent fact, but something presupposed by logic or at best a proposition of logic. Thus it will be urged that even if I could have a list of everything in the world " a ," " b ," . . . " z ," "for all x, fx " would still not be equivalent to " $fa, fb . . . fz$," but rather to " $fa, fb . . . fz$ and $a, b . . . z$ are everything." To this Mr. Wittgenstein would reply that " $a, b . . . z$ are everything" is nonsense, and could not be written at all in his improved symbolism for identity. A proper discussion of this answer would involve the whole of his philosophy, and is, therefore, out of the question here; all that I propose to do is to retort with a *tu quoque*! The objection would evidently have no force if " $a, b . . . z$ are everything" were, as with suitable definitions I think it can be made to be, a tautology; for then

* And also, apparently, of Mr. Johnson. See his *Logic*, Part II, p. 59.

it could be left out without altering the meaning. The objectors will therefore claim that it is not a tautology, or in their terminology not a necessary proposition; and this they will presumably hold with regard to any proposition of the sort, *i.e.* they will say that to assert of a set of things that they are or are not everything cannot be either necessarily true or necessarily false. But they will, I conceive, admit that numerical identity and difference are necessary relations, that "there is an x such that fx " necessarily follows from " fa ," and that whatever follows necessarily from a necessary truth is itself necessary. If so, their position cannot be maintained; for suppose a , b , c are, in fact, not everything, but that there is another thing d . Then that d is not identical with a , b , or c is a necessary fact; therefore it is necessary that there is an x , such that x is not identical with a , b , or c , or that a , b , c are not the only things in the world. This is, therefore, even on the objector's view, a necessary and not a contingent truth.

In conclusion, I must emphasise my indebtedness to Mr. Wittgenstein, from whom my view of logic is derived. Everything that I have said is due to him, except the parts which have a pragmatist tendency,* which seem to me to be needed in order to fill up a gap in his system. But whatever may be thought of these additions of mine, and however this gap should be filled in, his conception of formal logic seems to me indubitably an enormous advance on that of any previous thinker.

My pragmatism is derived from Mr. Russell; and is, of course, very vague and undeveloped. The essence of pragmatism I take to be this, that the meaning of a sentence is to be defined by reference to the actions to which asserting it would lead, or, more vaguely still, by its possible causes and effects. Of this I feel certain, but of nothing more definite.

* And the suggestion that the notion of an atomic proposition may be relative to a language.

II. By G. E. MOORE.

I SHOULD like, first of all, to get as clear as possible as to what the class of entities is, with the logical analysis of which Mr. Ramsey is concerned. In his first sentence he tells us that he proposes to discuss the logical analysis of *judgment*; but in his second he goes on to give an illustration, from which it would appear that the class of entities with the logical analysis of which he really is concerned is a certain class of *facts*. He does not, by way of illustration, mention any actual member of the class in question, but only tells us that, *if* at a particular moment he were judging that Cæsar was murdered, then the fact that he was doing so *would* be a member of that class. That is to say, he only tells us that, if there *were* any fact of a certain kind, any such fact would belong to the class with which he is concerned. And the *kind* of fact, with regard to which he does tell us this can I think, be defined as follows: We all know that if, at a particular moment, Mr. Ramsey were to utter the words "I am now judging that Cæsar was murdered," he *might*, by uttering those words at that moment, be expressing a *fact*. He *would*, in any case, be expressing a *proposition*; but if, at the moment in question, he happened to be really judging that Cæsar was murdered, then, and then only, he would, by uttering these words at that moment, be *also* expressing a fact. The fact in question would be a fact, with regard to the particular moment in question, to the effect that he was at that moment judging that Cæsar was murdered. But he might, of course, actually be judging that Cæsar was murdered, at moments at which he did not utter the words "I am now judging that Cæsar was murdered"; and, in the case of any such moment, there would

be a fact, of the kind he means, which was a fact with regard to that moment, although he would not be actually expressing it in this way. Of any such fact, however, it would still be true that it was *the* fact, such that, *if* at the moment in question he *had* uttered the words "I am now judging that Cæsar was murdered," then, by uttering those words at that moment, he *would* have expressed it; or, in other words, it would be *the* fact which he *could* have expressed by uttering those words at that moment. The *kind* of fact, therefore, with regard to which he implies that, if there were any facts of that kind, they would belong to the class of entities which he is concerned to analyse, can, I think, be defined as follows: An actual fact, F, is of the kind in question, if and only if there is *some* particular moment, such that F is the only fact of which it is true that, by uttering at that moment the words "I am now judging that Cæsar was murdered," Mr. Ramsey *could* have expressed F. Obviously there may be no actual facts which are of this kind. There is a fact of this kind, if and only if there is a moment with regard to which it is true that Mr. Ramsey did judge at it that Cæsar was murdered; and there are several facts of this kind, if and only if there are several such moments.

But, supposing there were any facts of this kind, to what class would they belong? Obviously they would belong to ever so many different classes; but there can be no doubt, I think, as to which of these classes must have been *the* class of which Mr. Ramsey intended to give them as an illustration. It can, I think, be defined as follows. Consider the class of sentences consisting of the sentence "I am now judging that Cæsar was murdered," together with all other sentences which resemble it in that they begin with the words "I am now judging that," and are completed by a set of words which resemble the words "Cæsar was murdered" in that, if uttered by themselves, they would constitute a significant sentence. And next

consider the class consisting of every fact of which it is true that there are a moment, a particular individual, and a sentence of the class defined, such that, *if* that individual had uttered or were to utter at that moment the sentence in question, then, by uttering that sentence at that moment, he would have expressed or would express the fact in question. This, I think, is the required class. Put more shortly, it is the class consisting of all facts which could have been or could be expressed by the utterance, on the part of some particular individual at some particular moment, of a sentence of the form "I am now judging that *p*." Obviously Mr. Ramsey's sub-class, consisting of all facts which *he* could have expressed or could express by uttering at a particular moment the sentence "I am now judging that Cæsar was murdered," would, if there were any members of this sub-class, belong to the class in question. And I think there can be no doubt that this must have been the class which he meant to indicate, if we make one, rather important, proviso. The proviso I mean is as follows: Mr. Ramsey assumes, later on (and his whole view of negation depends upon the truth of this assumption), that there are two fundamentally distinct though, in a certain sense, "equivalent," kinds of fact, the one a kind such that any fact of the kind might be expressed by using a sentence of the form "I am *disbelieving* that *p*," and the other a kind such that any fact of the kind might be expressed by using a sentence of the form "I am *believing* that not-*p*." It seems to me that this view is very likely true, though I have never been able to find any evidence that it is so which seemed to me at all cogent. And, if it is true, I think there is no doubt that Mr. Ramsey would wish to include among the objects of his analysis all facts which could be expressed by "I am *disbelieving* that *p*," just as much as those which could be expressed by "I am *believing* that *p*." And if so, then the class of facts I have just defined could only be identified with the class intended

by him, if any fact of the sort which might be expressed by "I am disbelieving that p " could *also* be properly expressed in English by "I am believing that not- p ." This may, of course, quite well be the case; even if there are the two fundamentally distinct kinds of negation which Mr. Ramsey assumes, it is quite possible that it is correct English to express the fact that *either* kind is occurring by "I am believing that not- p ." But it is only *if* this is the case that the class I have defined could be identified with the class intended by him; if it is not, then to define the class he intends, we should have to say that it is the sum of the two classes: facts which could be expressed by "I am now judging that p ," and facts which could be expressed by "I am now disbelieving that p ." As regards the latter phrase, it is, of course, not, in fact, good English; it is not good English to say, *e.g.*, "I disbelieve that Mr. Ramsey intended to analyse judgments." The way in which we actually express facts of the class which he describes by this phrase, if there are such facts at all, is by "I don't believe that p ."

The class of facts which I have just defined, and which I will hereafter refer to as my first class, seems to me to be a very definite one, and one of which there is no doubt whatever that there are members. There certainly are facts, each of which is a fact with regard to a particular individual and a particular time, such that if at the time in question the individual in question had uttered a sentence of the form "I am judging that p ," he would have expressed the fact in question. If, therefore, as he implies in his second sentence, it were facts of this class, with regard to the analysis of which Mr. Ramsey intends to make certain propositions, the question whether these propositions were true or false would be a definite one. But is it really facts of this class which he intends to analyse? There are two other classes of entities, each of which can be defined by reference to facts of this class (and, as far as I can see, in no other way), with

regard to each of which it might be suggested that it was entities of that class, and *not* of my first class, with the analysis of which he really is concerned; and my own view is that it is one of these other classes that he really is concerned with. Both of these other classes are very apt to be confused both with my first class and with one another, and it seems to me very important to distinguish them clearly.

The first of these two classes is the class of *judgments*; and I see no way of defining this class except as follows. Let F be a fact of my first class; let A be the individual of whom it is true that by uttering at a certain moment a sentence of the form "I am now judging that p " he would have expressed F ; and let T be the moment in question. For instance, if Mr. Ramsey ever did judge that Cæsar was murdered, as he probably may have done the first time he was told so, F might be the fact which he would have expressed by uttering at that moment the words "I am now judging that Cæsar was murdered," if he had then uttered them. We so use the term "judgment" that we should say: if A really did judge at T that p , then there must have been an event in A 's history (one and only one) which occurred at T , and which was a *judgment* that p . Indeed, we so use it that F is either identical with or equivalent to the fact which A might have expressed by saying at T "There is *some* event (one and only one), which is occurring now, which is an event in my history, and which is a *judgment* that p ." And I see no way of defining what is meant by a "judgment," in that sense of the term in which every judgment is an event or occurrence, except by saying that it is an event of the sort (whatever that may be) which is such that this equivalence holds. We all understand what is meant by a sentence of the form "A judged at T that p ," and we so use "judgment" that, in the case of every such sentence, a sentence of the form "There was an event in A 's history, which occurred at T , and was a judgment that p ,"

where A , T and p have the same values as in the original sentence, will either express the same proposition which the original sentence expressed or a proposition equivalent to it, in the sense that it both entails and is entailed by it. This, of course, does not tell us what would be the analysis of the proposition, with regard to a particular event, E , "E is a judgment"; still less does it tell us how, if at all, any particular event E , which was a judgment, could be analysed. But it does make certain points clear. It makes clear (1) that no fact of my first class *is* a judgment, since every such fact is either identical with or equivalent to some fact, with regard to a particular individual, time and proposition, to the effect that there was one and only one event in that individual's history, which occurred at that time and was a judgment that p . Clearly no such fact will itself *be* a judgment. A judgment is an event and occurs *at* a time; no such fact is an event, and none occurs *at* a time, though each is a fact *about* a time. But (2) though no fact of my first class *is* a judgment, yet to every fact of my first class there will *correspond* one and only one judgment, since every such fact is or is equivalent to a fact, with regard to a certain description, to the effect that there is one and only one judgment which satisfies that description; and hence each such fact will have to the judgment which does in fact satisfy the description, and to nothing else, the relation constituted by the double fact that *it is*, or is equivalent to, a fact, to the effect stated, *about* that description, while the judgment is the only thing to which the description in question applies. The fact and the corresponding judgment will be distinguished from and related to one another in some such way as that in which Mr. Ramsey maintained (p. 156) that the fact that *Cæsar died* is distinguished from and related to the event *Cæsar's death*. And, finally (3) (what seems to me a very important point, almost universally overlooked), although it follows that to every fact of my first class there will correspond one and only

one judgment, it by no means follows that to every judgment there will correspond *only* one fact of my first class. Suppose I am making two judgments simultaneously: *e.g.*, that I am *both* judging that p and also, simultaneously, that q , where p and q are different propositions. We shall then have two different facts of my first class. And to each there will correspond one and one only judgment: namely, to the first the event in my mental history, occurring at that time, which is a judgment that p , and to the second the event in my mental history, occurring at that time, which is a judgment that q . But there is nothing whatever in the definition of a judgment to show that these two descriptions may not both apply to the *same* event; that the very same event in my history which is a judgment that p , may not also be a judgment that q . And if this should be so, then to one and the same judgment there will correspond two different facts of my first class. It seems to me to be constantly assumed that an event which is a judgment that p cannot also be a judgment that q , but I do not know of any solid grounds for this assumption; it seems to me to rest merely upon a confusion between judgment, in the sense in which only *events* are judgments, and a certain class of *facts*. It is quite obvious that the fact that I am judging that p cannot be identical with the fact that I am judging that q , if p and q are different; but it is by no means equally obvious that the event which is my present judgment that p may not be identical with the event which is my present judgment that q . Suppose at a given moment I am judging with regard to two objects A and B , both of which I am perceiving, that A has to B the relation R . It seems to me quite obvious that the event which is my judgment that A has R to B , must also have two very different characters—the very same event must also be both a perception of A , and a perception of B . But if the same event, which is a judgment that A has R to B , is also both a perception of A and a perception of B , why should it not also

have other characters as well? Suppose I am also judging, with regard to another relation *S*, that *A* has *S* to *B*, why should not the same event which has the character of being a judgment that *A* has *R* to *B*, also have the character of being a judgment that *A* has *S* to *B*? For my part, I see no reason to think that more than *one* event ever occurs in my mental history at any one time. It is perfectly certain that there are an immense number of different *characters* of which it is true that some event having each of those characters is occurring in my mental history at a given time; but so far as I can see, it may be always one and the same event which has all these different characters. And if you say that it is not, I do not see on what principle you are to determine which among the characters in question belong to different events and which to the same.

Is it, possibly, with the analysis of *judgments*, in this sense which I have tried to explain, and *not* with that of facts of my first class, that Mr. Ramsey is concerned? He constantly speaks, of course, as if it were *judgments*, but all such expressions of his can, I think, easily be interpreted as merely a loose and abbreviated way of referring to *facts* of a certain class. And I cannot help thinking that it is not really to judgments, in this sense, that he means his propositions to apply at all. If it were of judgments that he is speaking, all we could say, I think, is that every single proposition which he makes about their analysis is in the last degree dubious. It is utterly doubtful, in the first place, whether judgments can be analysed at all. Even if they can, it is utterly doubtful whether they ever contain any "objective" factors; whereas he is assuming throughout that the entities, with the analysis of which he is concerned, certainly always do contain "objective" factors. And, thirdly, if he were dealing with judgments, he would be making throughout the highly doubtful assumption, of which I have just spoken, that a judgment that *p* cannot be identical with a judgment that *q*, if *p* and *q* be different.

I cannot believe that he really means to make any of these highly doubtful propositions. I think that what he implies in his second sentence so far expresses his real purpose, that it is a class of *facts* of a certain sort, each of which, though not identical with any judgment, has a certain special relation to one and only one judgment, that he really intends to analyse.

But is the class of facts in question really the one which he has indicated? That is to say, is it my first class of facts? I cannot believe that it is, for the following reason, among others. Every fact of my first class is, it seems to me, quite plainly a *general* fact; and, whereas Mr. Ramsey assumes throughout and expressly states to begin with that every entity, with the analysis of which he is concerned, consists *in the holding of some relation or relations between certain factors*, he would, if I understand rightly the latter part of his paper, deny that any *general* fact so consisted. Of course, it is possible that he may think that facts of my first class are *not* general facts, and that therefore they may really be capable of analysis in the way he says. But there seem to me to be many other indications that it is not really facts of this first class that he is trying to analyse; and what I want now to do is to state what seems to me to be the true alternative. I hold that what he is really trying to analyse are *neither* judgments, *nor* facts of my first class, but a second class of facts, which I will hereafter call my second class, related in a peculiar way to both; and what I want to do is to try to make clear what this second class is.

Suppose that Mr. Ramsey were now uttering the words "I am now judging that Cæsar was murdered," and were, by uttering them now, expressing a fact; as he would be doing if and only if he were actually judging now that Cæsar was murdered. I say that the fact which he would thus express would, quite certainly, be merely a *general* fact; that it would be either identical with or equivalent to a fact, with regard to a certain description which

could only apply to a *non-general* fact, to the effect that there was one and only fact which answered to that description; and that hence there would necessarily be one and only one non-general fact, which was *the* non-general fact corresponding to it—corresponding, in the sense, that it was *the* non-general fact answering to the description in question. I hold that, similarly, in the case of *every* fact of my first class, there is one and only one non-general fact, which is *the* non-general fact corresponding to it. I shall hereafter suggest that it is possible that, in the case of some or all of these non-general facts, there may be one or more other facts *equivalent* to each of them, in the sense that they both entail and are entailed by the fact in question. And my second class of facts consists of all those non-general facts which correspond to facts of my first class, together with all those facts (if any) which are equivalent to any such non-general fact. This I believe to be the class of entities with the analysis of which Mr. Ramsey is really concerned.

Consider what fact Mr. Ramsey would express by saying now "I am now judging that Cæsar was murdered," if he expressed a fact at all. It seems to me quite plain that all he would be expressing would be a fact to the effect that he was making *some* judgment of a certain kind, *i.e.*, for this reason alone, a *general* fact. There are many different ways of judging that Cæsar was murdered, and all he would be telling us would be that he was so judging *in some way or other*. There are, for instance, an immense number of different descriptions, by which we can think of Cæsar: we can think of him as the author of the *De Bello Gallico*; as the original of a certain bust in the British Museum; as the brother of the Julia who was a grandmother of Augustus, etc., etc. And anybody who was judging, with regard to any such description, which does actually apply to Cæsar, that *the* person who answered to it was murdered, would be *ipso facto* judging that Cæsar was murdered. It is surely quite plain that, if Mr. Ramsey were

judging *now* that Cæsar was murdered, he must be judging, with regard to *some* such description, that the person who answered to it was murdered; and no less plain that by merely saying "I am now judging that Cæsar was murdered," he would *not* be expressing, with regard to the particular proposition, of this form, which he would in fact be believing, the fact that he was believing that particular proposition. All that he would be *expressing* would be the fact that he was believing *some* proposition, which was a proposition to the effect that Cæsar was murdered. I do not see how this can be disputed. And this is not all: the fact which he would be expressing might be a fact which would be *general* for yet other reasons. It is, for instance, possible that, whenever one judges, one judges with some particular degree of conviction, with some particular degree of vagueness, etc., etc.; and, if so, then the fact which he would be expressing by his words would only be a fact to the effect that he was believing with *some* degree of conviction, *some* degree of clearness or vagueness, etc., *some* proposition of a certain kind; *the* fact, with regard to the particular degree of conviction, vagueness, etc., with which he would in fact be believing the proposition of the kind in question, which he was in fact believing, to the effect that he was believing it with *that* degree of conviction, vagueness, etc., would certainly not be expressed by his mere use of the words "I am now judging that Cæsar was murdered." And, finally, it is perfectly possible that the use of the word "I" may conceal yet another element of generality; indeed, on Mr. Ramsey's own view, if I understand him rightly, it certainly would. For he holds apparently that certain instances of certain kinds of word would necessarily be related in a certain way to the "objective" factors in the fact, of the kind he wishes to analyse, which there would be if he were making the judgment now; and though, by merely saying "I am now judging that Cæsar was murdered," he might possibly be expressing the fact, with regard to the *kinds* of words in question,

that *some* instances of words of that kind were related in the necessary way to *some* "objective" factors of a certain kind, the fact, with regard to the particular instances of those kinds of words, which were in fact so related, to the effect that *those particular instances* were so related, is, it seems to me, one which he would certainly *not* be expressing. For these reasons it seems to me that every fact of my first class is, quite certainly, a *general* fact, which is, or is equivalent to, a fact, with regard to a certain description, to the effect that there is one and only one non-general fact answering to that description; and that it is only if we consider these non-general facts, each of which corresponds to one and only one fact of my first class, together with any other non-general facts which may be equivalent to any one of these, that we get the class of entities with the analysis of which Mr. Ramsey really is concerned. If his class really is some other class, I have not the least idea how it can be defined.

With regard to this second class of facts, which I have tried to define, it is, I think, worth noticing that none of them, so far as I can see, could possibly be expressed in any actual language; perhaps, even none could be expressed in any possible language. This is one characteristic which distinguishes them sharply from facts of my first class, all of which, *ex hypothesi*, could be expressed in English. And surely it is, in fact, obvious that in the case of every, or nearly every, fact which could be expressed by using words of the form "I am now judging that *p*," there always is some other unexpressed and inexpressible fact of a sort, such that what you are expressing is only the fact that there is *some* fact of that sort.

Assuming, then, that it is these inexpressible facts of my second class with the analysis of which Mr. Ramsey is really concerned, what propositions does he make about their logical analysis?

There are, first of all, two such propositions, which, if I understand him rightly, he means to assert to be "hardly open to question" in his very first paragraph. The first is (1) some proposition which might be expressed by the words "Every such fact contains at least one 'mental' and at least one 'objective' factor"; and the second, (2) some proposition which might be expressed by the words "Every such fact consists in the holding of some relation or relations between the 'mental' and 'objective' factors which it contains."

Now I must confess I feel some doubt as to what Mr. Ramsey is here asserting. As regards (1) I think the words *can* be given a meaning such that the proposition they express really is "hardly open to question"; but I am not certain that Mr. Ramsey is really asserting this proposition and nothing more. As regards (2) I think it is not possible to give them any natural meaning such that the proposition they express would be "hardly open to question," though I do not wish to deny that one or more of the questionable propositions they might express may *possibly* be true. I will try to explain the chief doubts and difficulties I feel with regard to them.

As regards (1) I think the following proposition really is not open to question, viz., that every fact of my second class both contains at least one "objective" factor, and also contains at least one factor which is not *merely* "objective." And what is here meant by an "objective" factor can, I think, be defined as follows: Let *F* be a fact of my second class, and *A* be a factor contained in *F*. *A* will then be an "objective" factor of *F*, if and only if *either* (1) both (a) *F* entails that *A* is being believed, and also (b) if *F* entails with regard to any other entity, *B*, that *B* is being believed, then *B* is contained in *A*; or (2) there is some sense of the word "about," such that *F* entails that, in that sense, something is being believed *about* *A*. To say of *A* that it fulfils the first of these conditions is equivalent to saying

of it that it is *the* proposition, *p*, which is such that, if you were to assert *F*, then *p* would *either* be the *only* proposition which, in asserting *F*, you would be asserting to be believed, *or*, if not, would contain all other propositions which you were asserting to be believed—a proposition with regard to *A*, which would be usually expressed by saying that *A* is *what*, in asserting *F*, you would be asserting to be believed, or *the* “content” which you would be asserting to be believed, or (as Mr. Ramsey puts it, p. 154) *the* proposition which you would be asserting to be “judged.” And hence, no factor which *F* contains, will be an “objective” factor which satisfies this first condition, unless *F* contains a factor which is a proposition; and *F* will not do this unless, as Mr. Johnson puts it,* propositions are “genuine entities.” I understand Mr. Ramsey to be so using the term “objective” factor, that, *if* propositions are “genuine entities,” then every fact of our class will contain one and only one “objective” factor which satisfies this first condition; whereas, if they are *not* (as he goes on to maintain), then the only “objective” factors contained in any fact of our class will be “objective” factors which satisfy our second condition.

But, to return to my proposition that: Every fact of my second class both contains at least one “objective” factor and also contains at least one factor which is not *merely* objective. The language used implies that *every* factor contained in such a fact may possibly be “objective,” but that, if so, one at least among them must be not *merely* objective. And it seems to me that if you are to give to (1) any meaning whatever, which is really not open to question, it must be a meaning which allows this possibility—which allows, therefore, that there may be some facts of this class, such that every “mental” factor of them is *also* an “objective” factor of them. To say this is to

say that one and the same factor may possibly enter into the same fact in two different ways; and it is a well-known puzzle about facts of the class we are concerned with that this does *prima facie* seem to be true of some of them. To give what I regard as the strongest instance. Suppose Mr. Ramsey really were judging now that Cæsar was murdered. Then in the fact of my second class corresponding to the fact that he was so judging, it seems to me quite clear that the present moment (or something corresponding to it) would be an “objective” factor; since it seems to me quite clear that he would be judging, with regard to or *about* this time, that an event of a certain kind took place before *it*. As a general rule, whenever we use a past tense to express a proposition, the fact that we use it is a sign that the proposition expressed is *about* the time at which we use it; so that if I say twice over “Cæsar was murdered,” the proposition which I express on each occasion is a different one—the first being a proposition with regard to the earlier of the two times at which I use the words, to the effect that Cæsar was murdered before *that* time, and the second a proposition with regard to the later of the two, to the effect that he was murdered before *that* time. So much seems to me hardly open to question. But, if so, then in the hypothetical fact with regard to Mr. Ramsey which we are considering, the time at which he was making the judgment would certainly be an “objective” factor; but also, *ex hypothesi*, the very same moment would also be a factor in this fact in another way, since it would also be the time, with regard to which the fact in question would be a fact to the effect that he was making that judgment *at* that time. I do not say that some view according to which the very same time (or something corresponding to it) would *not* be a factor in the fact in question in both of these two different ways may not possibly be *true*; but I do say that no such view can be properly described as “hardly open to question.” And

this is a doubt which would clearly affect the immense majority of facts of my second class ; if, in this case, the same time would be a factor in the supposed fact in both of two different ways, then, in the immense majority of facts of this class, some one time *is* a factor in both of the two ways at once ; since (1) by definition, some time always *is* a factor in such a fact in the non-objective way ; (2) the immense majority of our judgments are judgments to the effect that something was, is, or will be the case, and (3) in all such cases the same time would (if it would be so in the case supposed) be also an "objective" factor in the fact in question. But there is another familiar doubt of the same kind, which affects a much smaller, but important, class among the facts we are considering. Suppose I were now judging that I am seeing a human being. Here it seems, *prima facie*, as if not only would the present time enter in both ways into the fact of my second class corresponding to the fact that I was making this judgment, but also as if I myself (or something corresponding to me) should enter in both ways into the fact in question ; *prima facie*, I should both be an "objective" factor in the fact in question, because the judgment made would be a judgment *about* me, and should also be not *merely* an "objective" factor in it, because the fact in question would be a fact to the effect that I was making the judgment. The question whether this really is the case, involves, of course, the familiar puzzle as to what the sense is in which I can be an object to myself. And, of course, I do not say that no view, according to which, in such cases, I (or something corresponding to me) am *not* both an "objective" factor in the fact in question and also a factor in a non-objective way, is *true* ; but I do say that no such view can be properly described as "hardly open to question."

I think, therefore, that if we are to find for (1) any meaning which really is hardly open to question, it must be a meaning such that to say of a given factor, B, that it is a "mental" factor

in a fact, F, of the class in question, is not inconsistent with saying of B that it is *also* an "objective" factor in F, but is inconsistent with saying of B that it is *merely* an "objective" factor in F. And the meaning of "mental factor" which I suggest as sufficient for this purpose, and as also giving (so far as I can discover) the sense in which Mr. Ramsey is really using the term, is the following : Let F be a fact of my second class, and B a factor in F. Then B will be a "mental" factor in F, if and only if both (1) B is not *merely* an "objective" factor in F and also (2) B is not the time (or whatever factor in F corresponds to this time) *about* which F is a fact to the effect that a certain judgment is being made at that time.

Let us now turn to consider what proposition Mr. Ramsey can be expressing by the words (2) : "Every such fact consists in the holding of some relation or relations between the 'mental' and 'objective' factors which it contains." It seems to me that any proposition which these words could properly express is questionable for both of two different reasons. (a) It seems to me that one of the factors, which are such that a fact of this class will always consist in the holding of some relation or relations between that factor and other factors, is always *the time* (or whatever corresponds to it) which is such that the fact in question is a fact, with regard to that time, to the effect that a certain judgment is being made *at* it ; and I think it is questionable whether this factor is not sometimes neither an "objective" nor a "mental" factor. We have seen that very frequently it does seem to be an "objective" factor ; but it would be rash to maintain that there are no cases in which it is not. And as for its being a "mental" factor, I have expressly defined "mental" in such a way that it will *never* be a "mental" factor. Of course, it always will be a factor which is not *merely* objective ; and it might be suggested that Mr. Ramsey is using "mental" merely to mean "not merely objective" ; in which case I should agree that the

proposition expressed by (2) is not questionable for this first reason. I do not, however, believe that he is so using "mental."

(b) It seems to me also questionable whether such a fact may not contain factors which are "objective," but which are not among the factors such that the fact *consists* in the holding of some relation or relations between those factors. I fancy Mr. Ramsey would maintain that no relational fact can contain any factors except factors which are such that the fact consists in the holding of some relation or relations between those factors; and I do not say that this view of his is not *true*, but only that it is questionable. He might, of course, so define "factor" that it would be necessarily true; but I do not think that he is actually using the term "factor" in such a way.

Having laid down these two preliminary propositions about the logical analysis of all facts of our second class, as "hardly open to question," Mr. Ramsey next goes on to express his belief in certain propositions about the "objective" factor or factors in any such fact. And I think we can distinguish three propositions of this class, in which he expresses belief, though he himself does not distinguish them. The first is (1) Every such fact contains more than one "objective" factor; the second (2) In every such fact, among the factors, which are such that the fact consists in the holding of some relation or relations between those factors, there are more "objective" factors than one; or in other words: In the case of no such fact is there any objective factor, which is the *only* objective factor which is a member of that class among the factors of the fact, which are such that the fact consists in the holding of some relation or relations between them; the third (3) In no such fact is there ever any objective factor, such that all the other objective factors of that fact are contained in it.

In the case of none of these three propositions does he, so far as I can see, offer any argument whatever in its favour. What

he does do is to mention two different views, which are such that if *either* of them were true, then (2) and (3) would be false, and with regard to which he supposes (mistakenly, I think) that, if either of them were true (1) would be false too. In the case of the first of these views, he himself offers no argument against it, but refers us to arguments which Mr. Russell has brought against it, and contents himself with telling us that he agrees with Mr. Russell's conclusion that (2) and (3) are both true. In the case of the second, he does bring arguments against it, which raise very important questions, which I shall have to discuss. But it is clear that even if these arguments were successful, they could not prove (2) and (3) in the absence of cogent arguments against the first view; and not even then, unless these two views are the *only* alternatives to (2) and (3).

I do not intend to argue these three propositions any more than Mr. Ramsey has done. With regard to (1) it seems to me unquestionably true. But with regard to (2) and (3), I doubt both these propositions, though it seems to me very likely that both are true. (2) seems to me to raise a very important question as to whether a principle which Mr. Ramsey believes in, and to which we shall have to refer again, is true: namely, the principle: *There cannot be two different facts, each of which entails the other.* If this principle were true, then, it seems to me, if we accept (1), we should have to accept (2) also. For suppose I were now making some judgment with regard to two objects, *a* and *b*, and a relation *R*, to the effect that *a* has *R* to *b*. There must, it seems to me, in such a case, certainly be some fact of my second class which consists in the holding of some relation or relations between the three objective factors, *a*, *R*, *b*, and some not merely objective factors; and this fact could not possibly be identical with any fact which consisted in the holding of some relation or relations between the proposition *aRb* and some not merely objective factors, since the same fact cannot possibly

consist *both* in the holding of some relation or relations between *one* set of factors (a , R , b and some not merely objective factors), and *also* in the holding of some relation or relations between another different set of factors (the proposition aRb , and some not merely objective factors). There could, therefore, if Mr. Ramsey's principle were true, be no fact of my second class which consisted in the holding of some relation or relations between a proposition and some not merely objective factors. For any fact, which so consisted, would, if (1) is true, be *either* identical with *or* equivalent to (*i.e.*, both entailing and entailed by), some fact which consisted in the holding of some relation or relations between a *plurality* of objective factors and some not merely objective factors; and we have seen it could not be identical with any such fact, whereas, by Mr. Ramsey's principle, it could not *either* be equivalent to it. The same argument would apply to any other sort of single objective factor, with regard to which it might be suggested that some facts of our class consist in the holding of some relation or relations between one and only one objective factor of the sort and some not merely objective ones. If (1) is true, *i.e.*, if every such fact would actually contain a plurality of objective factors, it must necessarily be *either* identical with *or* equivalent to some fact consisting in the holding of some relation or relations between a plurality of objective factors and some not merely objective ones; and, if Mr. Ramsey's principle were true, it could be neither. *If*, therefore, Mr. Ramsey's principle were true I should say (2) must be true, but I can see no conclusive reason for thinking that his principle is true, nor any other conclusive reason for thinking that (2) is true. As for (3), I should say that it might possibly be false, even if (2) were true, the question here raised being merely the question whether a given fact may not *have* factors which do not belong to the class of factors such that it *consists* in the holding of some relation or relations between them. Thus, in our case,

it might be held that the fact which consisted in the holding of some relation or relations between a , R , b and some "mental" factors, also had for a factor the proposition, aRb ; although, *ex hypothesi*, this proposition is not one of the factors, in the holding of a relation or relations between which this fact consists, and although it might also be true that there is no equivalent fact which does consist in the holding of a relation between this proposition and some not merely objective factors. As for the arguments which Mr. Russell has brought forward to show that propositions are not genuine entities, and that therefore (3), and consequently (2) also, cannot be true, it seems to me perfectly certain that neither any one of them singly, nor all of them taken together, is by any means conclusive; nor can I find any which does seem to me conclusive. I am not persuaded, therefore, that either (3) or (2) are true, though it seems to me quite likely that they are.

As for the second view, incompatible with (2) and (3), which Mr. Ramsey goes on to discuss, it seems to me perfectly certain that this view is false; but for a reason quite different from, and much simpler than, those which he gives. The view in question is as follows. Suppose S_1 were judging now that Cæsar was murdered, and S_2 were judging now that Cæsar was not murdered. There would then be two different facts of my second class, one corresponding to each of these two general facts. And what the view in question suggests is that each of these two facts of my second class has for an objective factor *the fact* that Cæsar was murdered; according to Mr. Ramsay, it even goes further than this, and suggests that this fact is the *only* objective factor in each of them, thus constituting a view which is incompatible with (1), as well as with (2) and (3). It holds, of course similarly, that wherever we have a general fact of the form "S is now judging that p ," where p is false, the fact corresponding to not- p (or some fact equivalent to it) is an objective factor in the fact of my second

class corresponding to this general fact; and that, wherever we have a general fact of the form "S is now judging that p ," where p is true, the fact corresponding to p is an objective factor in the fact of my second class corresponding to this one.

My simple objection to this view is that the fact that Cæsar was murdered could not possibly be a factor at all, either objective or otherwise, in any fact corresponding to a fact of the form "S is now judging that Cæsar was not murdered"; for the simple reason that, if it were, then from the mere fact that S was making the particular judgment he was making to the effect that Cæsar was *not* murdered, it would *follow* that Cæsar *was* murdered. From any fact whatever in which the fact that Cæsar was murdered was a factor, it would, of course, follow that Cæsar *was* murdered. And nothing seems to me more certain than that from a fact from which there follows a fact of the form "S is now judging that p ," it cannot possibly follow *also* that p is false. If, as this view says, it always *did* follow, then from the fact from which I was able to infer, in a particular case, that I *was* judging that p , I should always, if p happened in fact to be false, be able to infer with certainty that p was false. The very same fact of my second class which enabled a person who was judging that Cæsar was *not* murdered, to know that he was making this judgment, would at the same time enable him to know with certainty that Cæsar *was* murdered! It seems to me that this is an absolutely conclusive *reductio ad absurdum* of the view in question: and that hence, instead of saying, as this view says, that *wherever* we have a general fact of the form "S is now judging that p ," and p happens to be false, then the fact corresponding to not- p (or some equivalent fact) is a factor in the corresponding second-class fact, we must say, not merely the contradictory, but the contrary of this—namely, that in *no* such case can the fact corresponding to not- p be a factor in the corresponding second-class fact.

With regard to the second half of what it asserts, namely, that wherever we have a general fact of the form "S is judging that p ," and p is *true*, then the fact corresponding to p is a factor in the second-class fact corresponding to our general fact, the case is, I think, different; we are able here to assert with certainty the contradictory of this proposition, but not its contrary. This is because, if we use "judge" in the very wide sense in which philosophers often do use it, *i.e.*, a sense such that every case of *knowing* that p is also a case of *judging* that p , then there will be *some* general facts of the form "S is judging that p ," where p is true, such that from the corresponding second-class fact it really does follow that p , namely, those in which the corresponding second-class fact is a case of *knowing*. But here, too, we are able to assert with certainty the *contradictory* of the view in question, since it is quite certain that, even where p is in fact true, the second-class fact which enables us to know that we are judging that p does not *always* enable us to know that p .

The discussion of this view illustrates very clearly the importance of the distinction between facts of my first class and facts of my second. If, as Mr. Ramsey implied in his second sentence, the kind of facts he was trying to analyse were really facts of my *first* class, then we should have to understand this view as asserting that the fact that Cæsar was murdered is a factor both in any general fact of the form "S is judging that Cæsar was murdered" and in any general fact of the form "S is judging that Cæsar was not murdered." And to this view we should be able to make the absolutely conclusive and general objection that from a fact of the form "S is judging that p ," there *never* follows either p or not- p . Nothing is more certain than that we so use the word "judge" in English, that the proposition expressed by a sentence of the form "S is judging that p , and p " is never a tautology; and the proposition expressed by a sentence of the

form "S is judging that p , but not- p " is never a contradiction. This is the great distinction between the use of the words "judge" and "believe," and the use of the words "know" and "perceive" (in that sense of "perceive" in which we speak of "perceiving," not things, but *that* so and so is the case). "S knows that p , and p " or "S perceives that p , and p " do express tautologies; and "S knows that p , but not- p " or "S perceives that p , but not- p " do express contradictions. Mr. Ramsey speaks of the view that "perception is infallible," as if there were some doubt about it. I cannot see how there can be any doubt. To say that "perception is infallible" is only an awkward way of saying that any proposition of the form "S is perceiving that p " entails p . And if you are using "perceives" in any way in which it can be correctly used in English, it is perfectly certain that the proposition expressed by any sentence of the form "S is perceiving that p " does entail p ; every expression of the form "S is perceiving that p , but not- p " is quite certainly a contradiction in terms. Of course, this by itself tells us nothing as to the analysis of "S is perceiving that p "; for it is equally true that "S is judging *truly* that p , and p " is a tautology, and "S is judging *truly* that p , but not- p " a contradiction. The doctrine that perception is infallible is, therefore, perfectly consistent with the view that "perceives" merely means the same as "judges truly." But how anybody can doubt that perception always *is* infallible, and judgment always fallible, passes my comprehension. The first merely means "S is perceiving that p , but not- p " is *always* a contradiction; the second merely means "S is judging that p , but not- p " is *never* a contradiction. And both of these statements seem to me quite certainly true.

For these reasons it seems to me that the argument which Mr. Ramsey actually brings against this view is quite irrelevant to the analysis of judgment, since the view is, in any case, quite untenable for the reasons I have given. But his argument is,

I think, highly relevant to the subject of "facts and propositions," and, therefore, I must try to consider it. Unfortunately, it seems to me very obscure both *what* the conclusion of it is supposed to be, and how the argument is supposed to yield that conclusion. The conclusion which he seems to draw is that what Mr. Russell held to be true of judgment, *i.e.*, that (1), (2) and (3) are all true, is true not only of judgment, but also of any form of knowledge, including perception; in which case it would seem to follow that he is maintaining that *facts* are not "genuine entities" any more than propositions are. But he never expressly says so. All that he expressly says is that any analysis of the non-general fact corresponding to a fact of the form "S is perceiving that p ," which says that it *consists* in the holding of some relation or relations between the fact corresponding to p and some not merely objective factors, "cannot be accepted as ultimate." If he merely means by this that (1) is true, *i.e.*, that in such a non-general fact there is always a *plurality* of objective factors—that it is *not* true that the only objective factor in it is the fact corresponding to p —then I should completely agree with him. If he means, further, that such a non-general fact is always *either* identical with or equivalent to a fact which consists in the holding of some relation or relations between a plurality of objective factors and some not merely objective factors, I should agree with him again. If he means, further still, that no such fact is either identical with or equivalent to a fact which does consist in the holding of some relation or relations between the fact corresponding to p and some not merely objective factors, then I feel very doubtful. And if he means, lastly, that in no such fact, nor in any fact equivalent to such a fact, is the fact corresponding to p a factor at all, I feel more doubtful still.

But how does he suppose his arguments to support any of these conclusions? He begins the argument by giving reasons,

which I do not dispute, for saying that phrases of the form "the fact that p " in sentences of the form "S is perceiving the fact that p " are not names. He goes on to state that, in his opinion, such phrases are not descriptions either, but in favour of this opinion he offers no argument whatever. He merely suggests that those who hold the contrary opinion may have been led to hold it by confusing that usage of the phrase, "the death of Cæsar," in which, according to him, it really is a description (a description of an *event*), with another usage—that in which it has the same meaning as the phrase "the fact that Cæsar died," this latter being a usage in which, according to him, it is *not* a description. But even if it were true that those who hold that "the fact that Cæsar died" is a description, always hold it only because of this confusion, it would still remain possible that their opinion was a true one; and, so far as I can see, he gives no ground whatever for supposing that it is *not* a true one. But, even if a phrase of the form "the fact that p " never is a description, what would follow from this? The only conclusion he directly draws is that, if such a phrase is neither a name nor a description, then such a proposition as "I know the fact that Cæsar died" must be analysed into "Cæsar died and p ," where p is a proposition in which neither the fact that Cæsar died, nor any character which belongs to that fact and that fact only, is a constituent. But does it follow that, supposing "I know that Cæsar died" also expresses a *fact*, then neither in the non-general fact corresponding to this general fact, nor in any fact equivalent to it, is the fact that Cæsar died a factor? This is the conclusion he seems ultimately to draw, and I cannot see that it follows.

I will just state briefly the only clear point I can see about all this. I do see an objection, which I imagine Mr. Ramsey would consider conclusive, to the view that expressions of the form "the fact that $a R b$ " ever are descriptions. If they ever

are, then, if " $a R b$ " does express a fact, there must be some character, ϕ , which belongs to that fact and to nothing else, which is such that the *proposition* $a R b$ is *either* identical with *or* equivalent to a proposition, with regard to ϕ , to the effect that one and only one thing possesses it. And it seems, at first sight, to be perfectly obvious that every proposition, without exception, *is* either identical with *or* equivalent to some proposition, with regard to a certain character, to the effect that there is one fact, and one only, which has that character; this being, I imagine, why Mr. Johnson holds that propositions *are* characters of facts;* although, of course, the mere fact that in the case of every *true* proposition, there is some character of a fact such that the proposition in question is either identical with *or* equivalent to a proposition to the effect that *there is a fact which has that character*, gives no justification whatever for the view that any proposition whatever, true or false, *is* a character of a fact. But now consider the hypothesis, with regard to the *fact* $a R b$, that there is some character ϕ , belonging to it and to nothing else, such that the *proposition* $a R b$ is either identical with *or* equivalent to the proposition that there is one and only one fact which has ϕ . The only *constituents* of the proposition in question are a , R , and b , none of which is identical with ϕ ; hence the proposition $a R b$, cannot be identical with the proposition "There is one and only one thing which has ϕ ." But, on Mr. Ramsey's principle, that two *different* facts or propositions cannot possibly be equivalent, there also cannot possibly be any character ϕ , such that the proposition $a R b$ is *equivalent* to the proposition "There is one and only one thing which has ϕ ." It would seem to follow, then, from this principle, that there cannot possibly be any character which belongs to the fact $a R b$ and to nothing else; and hence that there cannot be any phrase

* *Logic*, Part I, p. 14.

which is a description of it. Hence, if I accepted Mr. Ramsey's principle, I should think that a phrase of the form "the fact that $a R b$ " never can be a description. But, in fact, I do not see how we can possibly do justice to the facts without supposing that there are genuinely different propositions and genuinely different facts, which nevertheless mutually entail one another. And hence, I should say that phrases of the form "the fact that $a R b$ " are descriptions. And I think that my view on this point, whether true or false, is certainly not due to confusion between the two different usages of "the death of Cæsar," which Mr. Ramsey points out. I was at one time habitually guilty of this confusion, but I discovered many years ago that it was a confusion.

Mr. Ramsey next proceeds to an excursus, which is confessedly quite irrelevant to the analysis of judgment, but which is again highly relevant to the subject of "facts and propositions." In this excursus, he says two things: (1) that "it is true that p " means no more than " p ," and (2) that there is no problem of truth, separate from the problem of the analysis of judgment; that to analyse judgment is the same thing as to solve the problem of truth; and that it is only through a "linguistic muddle" that any one holds the contrary opinion.

I cannot help dissenting from both these opinions, although Mr. Ramsey thinks their truth so obvious; and I will try to give quite clearly my reasons for dissent. Both points are very closely connected, and it will appear that the question whether I am right or he, again depends on whether his principle that there cannot be two different propositions or two different facts, each of which entails the other, is true; if it is true, then I think he must be right on this point also; but I think that what I am going to say is a good reason for supposing that principle of his to be false.

As regards (1), I admit that "it is true that p " can be properly used in such a way that it means no more than " p ." But

I hold that there is *another* usage of it, such that, in this usage, "it is true that p " always means something *different* from p , although something which is *equivalent* to it, *i.e.*, both entails and is entailed by it. And my reasons for this can best be given by considering (2).

As regards (2), I hold that a certain particular "correspondence" theory of truth is a correct theory; that the question whether this theory is correct or not certainly forms a part of anything which could properly be called "the problem of truth"; but that it does not form any part of the problem of the analysis of judgment, but raises at least one quite distinct question. The particular "correspondence" theory in question is as follows: In the case of facts of my first class—facts which could be expressed by the use of a sentence of the form "I am now judging that p ," it sometimes happens that the particular p in question would also express a fact, and sometimes that it would *not*. For instance, I sometimes judge that it will be fine to-morrow, and it *is* fine the next day; but sometimes when I so judge, it is *not* fine the next day. In the first case, we should say that, in judging that p , I was judging *truly*; in the second that, in judging that p , I was judging *falsely*. Now it seems to me that, in many cases, where *both* expressions of the form "I am now judging that p " and the particular p in question *would* express facts, we notice a certain relation which holds between the first and the second of these two facts—a relation which *only* holds between facts of my first class and other facts, and which only holds between a fact of my first class and another fact, where the particular p in question does express a fact. Let us call this relation "correspondence." What I believe is, that sometimes when we say "In judging that p , I was judging *truly*," we are thinking of this particular relation, and mean by our expression: "The fact that I was judging that p , *corresponds* to some fact." And my particular "correspondence" theory of truth, is only a theory to the effect

that some of the ways in which we use "true," are such that the meaning of "true" is to be defined by reference to this particular relation which I have called "correspondence," and that *all* our usages of "true" are such that a proposition expressed by the help of that word is *equivalent* to some proposition in which this relation occurs. It is obvious that *what* "corresponds" in my sense is never itself true; only facts of my first class "correspond," and these are never true. But many usages of "true" are, I hold, to be defined by reference to this relation; and, in particular, *one* of the meanings of "It is true that *p*" is a meaning in which this means "If anyone were to believe that *p*, then the fact (of my first class) in question would *correspond* to a fact." To say this is, I hold, *equivalent* to saying "*p*"—each proposition entails the other; but they are not identical, since in the one the relation of correspondence is a constituent, in the other not.

Surely the question whether this particular "correspondence" theory is true or not forms a part of "the problem of truth"? And how can it form a part of the problem of the analysis of judgment? I fancy what Mr. Ramsey may have been meaning to say is that the further problem as to the *analysis* of the relation which I call "correspondence" is identical with that of the analysis of judgment. But even this, it seems to me, cannot possibly be true, although obviously the analysis of judgment will have an extremely important bearing on the other problem.

Mr. Ramsey next proceeds to consider what he calls the "mental factors" in a belief; that is to say, if my former interpretation was right, those *not merely objective* factors in facts of my second class, which cannot be identified with that particular not merely objective factor which is the *time* about which the fact in question is a fact.

And here I confess I am in a great difficulty, because he goes on to say that it is only to one particular sub-class among facts of my second class that his remarks are intended to apply, and

I cannot understand, from his language, *what* particular sub-class it is that he does intend them to apply to. He describes the sub-class in question as "beliefs which are expressed in words, or possibly images or other symbols, consciously asserted or denied." That is to say, it looks at first sight, as if he meant to confine himself to cases in which he not only judges, *e.g.*, that Cæsar was murdered, but actually *expresses* his belief, by uttering aloud, or writing down, the words "Cæsar was murdered" or other equivalent words, or by using some other physical symbols. But his "possibly images" seems inconsistent with this supposition; he cannot suppose that any belief could be *expressed*, in this sense, by the use of images. But what, then, does he mean by "expressed"?

However, he goes on to say that he takes the "mental factors of such a belief to be words spoken aloud, or to one's self, or merely imagined, connected together, and accompanied by a feeling or feelings of belief or disbelief." This looks as if he meant to say that even if the belief in question is "expressed" in images or other symbols and *not* in words, yet words are always present; but I suppose this is not what he means, but only that he is going to consider only those cases in which it is "expressed" in words, and to assume that, where, if ever, it is "expressed" in images or other symbols and *not* in words, the same will apply, *mutatis mutandis*, to the images or symbols as to the words in other cases. It looks also as if he meant to say that the feeling or feelings of belief or disbelief are *not* "mental factors," but I suppose he really means to say that they are.

He next tells us that he will "suppose for simplicity that the thinker with whom we are concerned uses a systematic language without irregularities and with an exact logical notation like that of *Principia Mathematica*." That is to say, he proposes to give up the problem of the analysis of actual beliefs altogether, and to consider only what *would* be the analysis of a certain sub-class

among facts of my second class, if the individual about whom they were facts used a language such as nobody does use. He goes on to say something about the manner in which the words which were "mental factors" in such a fact *would* be related to the objective factors in it. And I gather part of his view to be that the only objective factors in it would be factors such that for each of them, there was a "name" among the mental factors.

I find it very difficult to extract from all this any definite propositions at all about actual beliefs. But I will mention three points as to which it seems to me (perhaps wrongly) that Mr. Ramsey is implying something with which I should disagree. (1) It seems to me quite doubtful whether, even if we confine ourselves to cases of belief in which the proposition believed is what Mr. Ramsey calls "expressed" in words, the words in question are always, or even ever, factors in the fact of my second class at all. I cannot see why they should not merely *accompany* the mental factors in such a fact, and not themselves *be* such factors. Any words with which I *express* a belief do seem to me to be subsequent to the belief, and not, therefore, to be factors in it. (2) An enormous number of our actual beliefs seem to me to be beliefs in which some of the objective factors are sense-data or images presented to us at the moment; and I imagine this would be the case with many even of Mr. Ramsey's sub-class, which are, in the sense he means, "expressed" in words. In the case of these objective factors it seems to me there are no words which are "names" for them or which represent them in any way, so that Mr. Ramsey's "feelings" of belief or disbelief would have to be related *directly* to these objective factors—not, as he implies, only related to them by being related to words which were "names" for them or related to them in some other way. I do not see why Mr. Ramsey's individual with the ideal language should not have such beliefs: but perhaps he would reply that such beliefs would not belong to his sub-class of beliefs "expressed"

in words. (3) Even if Mr. Ramsey were right as to the last two points, there seems to me to be one very important relation between the mental and objective factors, which he has entirely omitted to mention. He speaks as if it were sufficient that his ideal individual should have belief feelings attached to words, which were in fact *names which meant* the objective factors. It would surely be necessary also, not merely that those names should *mean* those objective factors, but that he should *understand* the names.

There are two other topics in Mr. Ramsey's paper, about which I should like to say something, though I have not space to say much—namely his explanation of "the mode of significance" of the word "not," and of the words "all" and "some."

As regards the first, I am by no means convinced that Mr. Chadwick's view is not the true one; and Mr. Ramsey's ground of objection to it (for I can only find *one*, though he speaks as if there were several) does not appeal to me at all. He points out that on Mr. Chadwick's view "not-not-*p*" would be a *different* proposition from "*p*," although, admittedly, "not-not-*p*" follows formally from "*p*," and also "*p*" from "not-not-*p*"; and he says he "feels" that the conclusion of a formal inference must be "contained" in the premises in such a sense, that if both "*p*" is contained in "not-not-*p*," and also "not-not-*p*" is contained in "*p*," then "*p*" and "not-not-*p*" must be identical. This is the proposition to which I have referred so often before: That there cannot be two *different* propositions, which mutually entail one another. I have no feeling that it must be true, and have given a reason for dissenting from it.

Nevertheless, I am, of course, not convinced that Mr. Chadwick's view is true, and I have a "feeling" against it, to the effect that "the mode of significance" of "not" must be somehow derived from the relation of *disbelieving*. I do not trust this feeling very much, because, as I have said, I cannot find any

evidence that there are two fundamentally distinct occurrences—disbelieving that p and believing that not- p . But the feeling inclines me to think that some such view as Mr. Ramsey's is very likely true. The only point I should like to raise about that view is one which will perhaps show that I have misunderstood it. It seems to me that, on any view, there certainly are negative facts. It certainly is a fact, for instance, that King George is not at this moment in this room; or that the earth is not larger than the sun. On Mr. Ramsey's view, would it be possible to give any analysis of such facts? I should have thought it would; and that the analysis would be of some such kind as that the first fact would be the fact that, if anyone were to disbelieve that King George is in this room, then this disbelief would, under certain circumstances, produce certain consequences: that if, for instance, it were to lead to certain expectations, these expectations would be realized. If Mr. Ramsey's view would lead to the result that such a fact was to be analysed in some such way, I see no conclusive reason why it should not be true.

The other point is the "mode of significance" of "all" and "some."

In support of his view on this question, Mr. Ramsey urges, among other arguments, that it is the only view which explains (1) how " fa " can be inferred from "for all x, fx ," and (2) how "there is an x such that fx " can be inferred from " fa ." And with regard to these two arguments, I want to say that the first does not seem to me a strong one, because the supposed fact, which Mr. Ramsey's view would explain, does not seem to me to be a fact. "Can be inferred from" must plainly be understood to mean "can be *formally* inferred from" or "is entailed by": and I entirely deny that fa is entailed by "for all x, fx ," fa is entailed by the conjunction "for all x, fx " and " a exists"; but I see no reason to think that "for all x, fx " by itself entails it. The fact, therefore, that Mr. Ramsey's view would explain, and

in fact render necessary, this supposed fact, seems to me not an argument in its favour, but against it.

But in the case of the second argument, I admit I do feel force in his contention that Mr. Chadwick's theory as to the analysis of "There is an x such that fx " gives no intelligible connection between "This is red" and "Something is red." I do not know, however, that Mr. Chadwick's theory is the only alternative to his, though I can think of no other. And I must admit that I feel a stronger objection to his than I do to Mr. Chadwick's.

Mr. Ramsey then goes on to answer supposed objections to his view.

The first objection is one which he puts in the form: "It will be said that a cannot enter into the meaning of 'for all x, fx ,' because I can assert this without ever having heard of a ." And to this he gives two answers. His first answer does not seem to me to meet the objection, since what the objection denies is *not* that, when we judge "for all x, fx ," we are making a judgment "*about* things we have never heard of and so have no names for"; obviously, in *some* sense of "about" we are. By saying that a does not *enter into the meaning* of " x, fx ," what it means is that, in judging that "for all x, fx ," we are not judging *about* a in the *same* sense as if we were judging fa —that, in short, a, b, c, d , etc., are not all of them *factors* in a fact of my second class corresponding to "I am judging that x, fx ." I must own it seems to me obvious that they are not: and this answer of Mr. Ramsey's goes no way to meet my objection. Nor does his second answer. This is that a certainly is "involved in the meaning of" "for all x, fx ," because "not- fa " is certainly inconsistent with "for all x, fx ." This answer seems to me to make two separate assumptions, both of which I should dispute. Namely (1) that if " fa " is entailed by "for all x, fx ," then " fa " must be *contained* in it. I have already said that this proposition does not appeal to me as self-evident. And (2) that, since "not- fa " is inconsistent with "for all x, fx ,"

therefore "for all x , fx " must entail " fa ." This seems to me to be a mistake because "not- fa " in the sense in which it is inconsistent with "for all x , fx ," is not the contradictory of " fa ," but equivalent to the conjunction of " a exists" with the contradictory of " fa ." All that follows, then, from the fact that "not- fa " is inconsistent with "for all x , fx ," is not that the latter entails " fa ," but, as I said before, that the latter, *together with*, " a exists," entails " fa ."

The second objection is one which Mr. Ramsey calls "more serious," and he says that he has not space to give a full answer to it. He tries, instead, to retort to it with a *tu quoque*. In this retort, however, he makes a step, of which I, at least, should deny the validity. He supposes that if the objector admits (as I should admit) that numerical difference is a *necessary relation*, he is bound also to admit that, supposing a , b , c are not everything, but there is also another thing d , then that d is not identical with a , b , or c is a *necessary fact*. But I should hold that, though numerical difference is a *necessary relation*, yet, in the case supposed, that d is other than a is *not* a *necessary fact*. For numerical difference is a *necessary relation* only in the sense that, if a and d both exist, then a must be other than d . But to say that " a is other than d " is a *necessary fact* would entail besides that " a exists" is necessary, and that " d exists" is necessary, which I should deny.

VII.—SYMPOSIUM: IS THE "FALLACY OF SIMPLE LOCATION" A FALLACY?

By L. S. STEBBING, R. B. BRAITHWAITE, and D. WRINCH.

I. By L. S. STEBBING.

IN this symposium we are, I understand, to consider the theory of location recently set forth in Professor Whitehead's *Science and the Modern World*. I do not think that Professor Whitehead anywhere speaks of a "fallacy of simple location." He accuses traditional physics of the "fallacy of misplaced concreteness" and says that an instance of this fallacy is to be found in the belief that what has simple location are material things, and he denies that such things as a crimson cloud, a green leaf, an oblong table have simple location. There is material that has simple location, but this material is an abstraction of a very high degree of abstractness. It seems to me, therefore, that the question proposed for discussion is somewhat misleading and should be reformulated into a set of questions of the form: "Is the ascription of simple location to *so-and-so* a fallacy?" Pages 81-90 of *Science and the Modern World* make this quite clear. The need for brevity prevents my quoting here more than two short passages, but I assume acquaintance with the whole argument.

"To say that a bit of matter has *simple location* means that in expressing its spatio-temporal relations, it is adequate to state that it is where it is, in a definite finite region of space and throughout a definite finite duration of time, apart from any essential reference of the relations of that bit of matter to other