Professor C. I. Lewis, in Book II of his Carus Lectures, *An Analysis of Knowledge and Valuation*, defends the thesis that the meaning of any statement which refers to a material thing may be fully conveyed in statements which refer solely to sense-data or the sensible appearances of things. His account is perhaps the clearest and most careful defence of this empirical thesis which has yet appeared and, in consequence, it enables us to state, more clearly than has been possible before, the characteristic difficulties of empiricism.

According to Professor Lewis, an analysis of the meaning of any ordinary thing statement, such as "This thing is red" or "That is a doorknob," will show that the statement entails an unlimited number of statements referring solely to sense-data. The sense-datum statements are "analytic consequences" of the thing statement; that this is so in any particular case "is certifiable a priori, either by reference to logical rules or by reference to meanings involved or by both together" (p. 249). The relation which thing statement bears to sense-datum statement is similar to that which "T is red" bears to "T is colored" (ibid.). Since the full meaning of any thing statement may be conveyed in the sense-datum statements which it entails, thing statements may be said to be "translatable" into sense-datum statements (p. 181). The principle difficulty with this view concerns the first step: the problem of showing that any ordinary thing statement has, as analytic consequences, statements which refer solely to sense-data.

The roots of the difficulty are the familiar facts sometimes referred to as "the relativity of sense perception." Whether a material thing will ever present, say, a red appearance or sense-datum depends partly upon the thing and partly upon the conditions under which it is observed. If one knew that the thing were red and that the lighting conditions were normal, one could predict that, to a normal observer, the thing would present a red

1 Seldom, of course, does anyone ever formulate any sense-datum statements and, as Professor Lewis admits (p. 173), it may be questioned whether the terms of ordinary language are adequate to convey judgments about sense-data. Although he finds it convenient to present his conclusions by reference to relations between statements, his theory does not purport to be a linguistic analysis. The problem is an epistemological one, concerning our beliefs or judgments about material things, and could be discussed without reference to statements at all. The present issues, however, may be brought into clearer focus if we follow Professor Lewis and discuss the relations between statements. It should be noted that Professor Lewis does not use the brief terms "thing statement" and "sense-datum statement."
appearance. If one knew that the lights were out, or that the observer had a certain type of color blindness, one could predict that the thing would present some other appearance. And so on, for any other thing and its possible appearances. To calculate the appearances with complete success, it is necessary to know both the thing-perceived and the (subjective and objective) observation-conditions, for it is the thing-perceived and the observation-conditions working jointly which determine what is to appear. Professor Lewis believes that "This thing is red" entails as analytic consequences an unlimited number of statements referring solely to what might appear. But the facts of "perceptual relativity" suggest that it doesn't entail any statement about sense-data; they suggest that a sense-datum statement is entailed only when "This thing is red" is taken in conjunction with another thing statement referring to observation-conditions. The translatability thesis requires that both observation-conditions and things-perceived be definable in terms of what might appear. But the facts of perceptual relativity indicate that it is the joint operation of things-perceived and observation-conditions which determines what is to appear; hence the task of the empiricist would seem to be similar to that of an economist who hoped to define both supply and demand in terms of possible prices.

The complexity of the problem will become evident if, before turning to the details of Professor Lewis's view, we consider a simple example. Consider the thing statement

This is red (P)

and the sense-datum statement

Redness will appear (R).

May we say that P entails R? Possibly it will be immediately evident that no contradiction is involved in affirming P and denying R. The following considerations, however, may make the matter clearer.

Taken in conjunction with some other thing statement, referring to observation-conditions, P does entail R. The other statement could be

This is observed under normal conditions; and if this is red and is observed under normal conditions, redness will appear. (Q)

But taken in conjunction, not with Q, but with still another thing statement, also referring to observation-conditions, P entails not-R. This other thing statement could be

This is observed under conditions which are normal except for the presence of blue lights; and if this is red and is observed under conditions which are normal except for the presence of blue lights, redness will not appear. (S)
So far as ordinary usage is concerned, it is quite evident that the statement $S$ is logically consistent with $P$; there is no contradiction involved in affirming one and denying the other. But the conjunction of $P$ and $S$, if they are logically consistent, must entail everything that $P$ entails and can not entail anything logically inconsistent with what $P$ entails. If $P$ and $S$ entail $R$, it is impossible that $P$ entail $R$. Hence "This is red" ($P$) does not entail "Redness will appear" ($R$).

We may draw a similar conclusion with respect to any other categorical sense-datum statement $R'$. Although there may be a statement about observation-conditions, $Q'$, such that "This is red" ($P$) and $Q'$ entail $R'$, there is also a statement about observation-conditions, $S'$, such that $P$ and $S'$ entail not-$R'$. Hence $P$ does not entail $R'$.

Professor Lewis admits that no thing statement, such as "This is red," entails any categorical sense-datum statement, such as "Redness will appear"; he admits further that "This is red" does not entail any sense-datum conditional, such as "If such-and-such should appear, then such-and-such would appear" (p. 237). The sort of sense-datum statement which is entailed is considerably more complicated. It is a conditional of the form: "If such-and-such a presentation (or sense-datum) should appear and such-and-such feelings of action (also sense-data) should appear, then in all probability such-and-such another sense-datum would appear" (cf. pp. 248 ff). For reasons essential to his account of knowledge and action, the antecedent of the sense-datum statement must refer both to some "sensory clue" and to a feeling of activity, and the consequent must be prefaced by some such phrase as "in all probability." These complications, however, do not affect the principle now under discussion.

We may utilize the above letters again in discussing Professor Lewis's view. One of his examples is the thing statement

There really is a doorknob in front of me and to the left. ($P$)

One of the complicated sense-datum statements which are analytic consequences of this might be

If I should seem to see such a doorknob and if I should seem to myself to be initiating a certain grasping motion, then in all probability the feeling of contacting a doorknob would follow. ($R$)

According to Professor Lewis, $R$ is an analytic consequence of $P$; or, in other words, $P$ entails $R$. But, again, if $P$ entails $R$, then it is

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2 Cf. op. cit., pp. 240, 248–249. We are to suppose, of course, that the words which appear in this statement are in what Professor Lewis calls the "expressive language," referring solely to sense-data.
logically impossible that there be a statement $S$, consistent with $P$ and such that $P$ and $S$ entail not-$R$. Hence, if there is such a statement $S$, $P$ does not entail $R$. Is there, then, such a statement $S$?

It should be remarked that we are not asking whether there is such a statement $S$ which is true. For Professor Lewis’s theory concerns the meaning of thing statements, what is certifiable a priori by reference to logic and the meanings of terms. If there is a statement $S$, which in conjunction with $P$ entails not-$R$, then, whether or not $S$ is true, the theory—at least in application to this case—is mistaken.

Clearly there are many such statements $S$. One might be

I am unable to move my limbs and my hands but am subject to delusions such that I think I’m moving them; I often seem to myself to be initiating a certain grasping motion, but, when I do, I never have the feeling of contacting anything. ($S$)

This statement in conjunction with $P$ entails not-$R$. There is no reason to suppose that $S$ is inconsistent with $P$. Hence it is false that $P$ entails $R$. Similarly, for any other complex sense-datum statement $R'$ which might be thought to be an analytic consequence of $P$, it would seem to be possible to formulate a statement $S'$, consistent with $P$, and such that $P$ and $S'$ entail not-$R'$.

Thus it remains to be seen in what sense any sense-datum statement can be regarded as an analytic consequence of “This thing is red” or “That is a doorknob.”

It was suggested above that statements such as “This thing is red” entail sense-datum statements only when taken in conjunction with some other thing statement pertaining to observation-conditions. Thus, in our earlier example, “This is red” ($P$) does entail a sense-datum statement when it is conjoined with our statement $Q$: “This is observed under normal conditions; and if

3 A. J. Ayer, who also defends the translatability thesis, admits that no thing statement, such as “This thing is red,” entails any particular sense-datum statement. But, he holds, the thing statement does entail numerous disjunctive “sets” of sense-data statements, “where the defining characteristic of the set is that all its members refer to sense-contents that fall within a certain specifiable range” (Language, Truth and Logic, 2nd edition, p. 13; cf. Foundations of Empirical Knowledge, pp. 240–241). E.g., each member of a set might refer to some specific shade of red, not referred to by the other members, but all of the sense-data referred to would fall within the “fairly indefinite range” of redness. The view that the thing statement entails such a set, however, is subject to the difficulties noted above in the case of single statements; for, again, it would seem to be possible to find another thing statement which, taken in conjunction with “This thing is red,” entails the contradictory of any set which Mr. Ayer might mention.
this is red and is observed under normal conditions, redness will appear.’’ Without seeking to beg any questions, we might call the latter part of Q a psychophysical statement, for it refers to sense-data which will appear under certain physical conditions. The sense-datum statement (“Redness will appear”) is entailed, not by the thing statement (“This is red”) but by the conjunction of: (i) the thing statement; (ii) the statement about observation-conditions (“This is observed under normal conditions”); and (iii) the psychophysical statement (“If this is red and is observed under normal conditions, redness will appear”). As we have seen, the thing statement, “This is red,” if conjoined with a different statement about observation-conditions and with a different psychophysical statement, may entail a different sense-datum statement.

It could be contended that the psychophysical statement (iii) is analytic, that “If this is observed under normal conditions, redness will appear” is an analytic consequence of “This is red.” This fact would be of little use to the translatability program, however. For this method of deriving sense-datum statements from “This is red” proceeds by utilizing additional thing statements (“This is observed under normal conditions,” referring presumably to lighting arrangements, ocular conditions, and so on). Instead of eliminating thing statements in this manner, therefore, we would be multiplying them. And the new thing statements would present our old difficulties again.4

The translatability thesis, however, does claim to provide an account of the respect in which our knowledge of things is founded in, and is verifiable and falsifiable in, sense experience. If we deny this thesis we must provide an alternative account of the manner in which such experience may be said to justify our knowledge of things.5 This is not the place to pursue this further question in detail; but it is relevant to note that, in principle, the problem becomes similar to that of the validity of memory and that Professor Lewis’s own method of treating the latter problem may in fact be applicable to both problems. The possibility of our having any knowledge at all, he believes, requires that we make two assumptions about memory: ‘‘First; whatever is remembered, whether as explicit recollection or merely in the form of our sense of the past, is prima facie credible because so remembered. And second; when the whole range of empirical beliefs is taken into account, all of


5 Similarly, we should have to reconsider the thesis, fundamental to Professor Lewis’s views (as well as to Mr. Ayer’s), that a synthetic statement is meaningful only to the extent to which it refers to possible experience. But it is reasonable to suppose that the acceptability of such a criterion of meaning should be secondary to considerations such as those discussed above.
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them more or less dependent upon memorial knowledge, we find that those which are most credible can be assured by their mutual support, or . . . congruence” (p. 334). If thing statements are not translatable into sense-datum statements, it may be that the validity of our perceptual knowledge of things requires similar assumptions. It may be that whenever the presence of a sense-datum leads one to accept a belief about a material thing (e.g., whenever, as a matter of fact, the presence of a red sense-datum leads one to accept the belief that one is observing a red thing) the belief which is thus “perceptually accepted” is prima facie credible because it is so accepted. Indeed Mr. Price has said as much. And it may be that when the whole range of our perceptual beliefs are taken into account, all of them more or less dependent upon our perceptual acceptances, we find that those which are most credible can be assured by their mutual support. These assumptions do not claim any faculties for man which are not involved in Professor Lewis’s defence of memory. Whether they will suffice for justifying perceptual knowledge, however, is a question which can be answered only on the basis of a discussion as thorough as the one which Professor Lewis devotes to memory.

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PROFESSOR CHISHOLM AND EMPIRICISM

Professor Chisholm questions the adequacy of the account of perceptual knowledge which I have put forward, on the ground that this account is incompatible with “the familiar facts sometimes referred to as ‘the relativity of sense perception.’”

I have held that what the statement of a perceptually learned objective fact, such as “This (seen object) is red” or “This is square,” means—in one specific, and specified, sense of the word “meaning”—is explicable by some set of statements representing predictions of possible experience and having the form, “If $S$ be given and act $A$ initiated, then in all probability $E$ will follow,” where $S$, $A$, and $E$ each refers to some recognizable item of direct experience, and the colloquial phrase “in all probability” is intended to suggest a probability approximating to certainty.

7 “Perceptual acceptance” is Mr. Price’s term. Cf. Perception, pp. 139 ff.
9 Page 512, preceding.