

AYER

"The PRINCIPLE of  
VERIFICATION"

NOTICE  
This material may be  
protected by copyright  
law (Title 17 U.S. Code.)

LANGUAGE,  
TRUTH AND LOGIC

by

ALFRED JULES AYER

*Grote Professor of the Philosophy of  
Mind and Logic at University College, London*

DOVER PUBLICATIONS, INC.  
NEW YORK

To R. A.

This Dover edition, first published in 1952, is an unabridged and unaltered republication of the second (1946) edition. It is reprinted by special arrangement with Victor Gollantz, Ltd., and is for sale in the United States of America and Canada only.

Standard Book Number: 486-20010-8  
Library of Congress Catalog Card Number: 52-860

Manufactured in the United States of America  
Dover Publications, Inc.  
180 Varick Street  
New York, N. Y. 10014

## INTRODUCTION

IN THE TEN YEARS that have passed since *Language, Truth and Logic* was first published, I have come to see that the questions with which it deals are not in all respects so simple as it makes them appear; but I still believe that the point of view which it expresses is substantially correct. Being in every sense a young man's book, it was written with more passion than most philosophers allow themselves to show, at any rate in their published work, and while this probably helped to secure it a larger audience than it might have had otherwise, I think now that much of its argument would have been more persuasive if it had not been presented in so harsh a form. It would, however, be very difficult for me to alter the tone of the book without extensively re-writing it, and the fact that, for reasons not wholly dependent upon its merits, it has achieved something of the status of a text-book is, I hope, a sufficient justification for re-printing it as it stands. At the same time, there are a number of points that seem to me to call for some further explanation, and I shall accordingly devote the remainder of this new introduction to commenting briefly upon them.

### THE PRINCIPLE OF VERIFICATION

The principle of verification is supposed to furnish a criterion by which it can be determined whether or not a sentence is literally meaningful. A simple way to formulate it would be to say that a sentence had literal meaning if and only if the proposition it expressed was either analytic or empirically verifiable. To this, however, it might be objected that unless a sentence was literally meaningful it would not express a proposition;<sup>1</sup> for it is commonly assumed that every proposition is either true or false, and to say that a sentence expressed what was either true or false would entail saying that it was literally meaningful. Accordingly, if the principle of verification were formulated in

<sup>1</sup> Vide M. Lazerowitz, "The Principle of Verifiability," *Mind*, 1937, pp. 372-8.

this way, it might be argued not only that it was incomplete as a criterion of meaning, since it would not cover the case of sentences which did not express any propositions at all, but also that it was otiose, on the ground that the question which it was designed to answer must already have been answered before the principle could be applied. It will be seen that when I introduce the principle in this book I try to avoid this difficulty by speaking of "putative propositions" and of the proposition which a sentence "purports to express"; but this device is not satisfactory. For, in the first place, the use of words like "putative" and "purports" seems to bring in psychological considerations into which I do not wish to enter, and secondly, in the case where the "putative proposition" is neither analytic nor empirically verifiable, there would, according to this way of speaking, appear to be nothing that the sentence in question could properly be said to express. But if a sentence expresses nothing there seems to be a contradiction in saying that what it expresses is empirically unverifiable; for even if the sentence is adjudged on this ground to be meaningless, the reference to "what it expresses" appears still to imply that something is expressed.

This is, however, no more than a terminological difficulty, and there are various ways in which it might be met. One of them would be to make the criterion of verifiability apply directly to sentences, and so eliminate the reference to propositions altogether. This would, indeed, run counter to ordinary usage, since one would not normally say of a sentence, as opposed to a proposition, that it was capable of being verified, or, for that matter, that it was either true or false; but it might be argued that such a departure from ordinary usage was justified, if it could be shown to have some practical advantage. The fact is, however, that the practical advantage seems to lie on the other side. For while it is true that the use of the word "proposition" does not enable us to say anything that we could not, in principle, say without it, it does fulfil an important function; for it makes it possible to express what is valid not merely for a particular sentence  $s$  but for any sentence to which  $s$  is logically equivalent. Thus, if I assert, for example, that the proposition  $p$  is entailed by the proposition  $q$  I am indeed claiming implicitly that the English sentence  $s$  which expresses  $p$  can be validly derived from the English sentence  $r$  which expresses  $q$ , but this is not

the whole of my claim. For, if I am right, it will also follow that any sentence, whether of the English or any other language, that is equivalent to  $s$  can be validly derived, in the language in question, from any sentence that is equivalent to  $r$ ; and it is this that my use of the word "proposition" indicates. Admittedly, we could decide to use the word "sentence" in the way in which we now use the word "proposition," but this would not be conducive to clarity, particularly as the word "sentence" is already ambiguous. Thus, in a case of repetition, it can be said either that there are two different sentences or that the same sentence has been formulated twice. It is in the latter sense that I have so far been using the word, but the other usage is equally legitimate. In either usage, a sentence which was expressed in English would be accounted a different sentence from its French equivalent, but this would not hold good for the new usage of the word "sentence" that we should be introducing if we substituted "sentence" for "proposition." For in that case we should have to say that the English expression and its French equivalent were different formulations of the same sentence. We might indeed be justified in increasing the ambiguity of the word "sentence" in this way if we thereby avoided any of the difficulties that have been thought to be attached to the use of the word "proposition"; but I do not think that this is to be achieved by the mere substitution of one verbal token for another. Accordingly, I conclude that this technical use of the word "sentence," though legitimate in itself, would be likely to promote confusion, without securing us any compensatory advantage.

A second way of meeting our original difficulty would be to extend the use of the word "proposition," so that anything that could properly be called a sentence would be said to express a proposition, whether or not the sentence was literally meaningful. This course would have the advantage of simplicity, but it is open to two objections. The first is that it would involve a departure from current philosophical usage; and the second is that it would oblige us to give up the rule that every proposition is to be accounted either true or false. For while, if we adopted this new usage, we should still be able to say that anything that was either true or false was a proposition, the converse would no longer hold good; for a proposition would be neither true nor

false if it was expressed by a sentence which was literally meaningless. I do not myself think that these objections are very serious, but they are perhaps sufficiently so to make it advisable to solve our terminological problem in some other way.

The solution that I prefer is to introduce a new technical term; and for this purpose I shall make use of the familiar word "statement," though I shall perhaps be using it in a slightly unfamiliar sense. Thus I propose that any form of words that is grammatically significant shall be held to constitute a sentence, and that every indicative sentence, whether it is literally meaningful or not, shall be regarded as expressing a statement. Furthermore, any two sentences which are mutually translatable will be said to express the same statement. The word "proposition," on the other hand, will be reserved for what is expressed by sentences which are literally meaningful. Thus, the class of propositions becomes, in this usage, a sub-class of the class of statements, and one way of describing the use of the principle of verification would be to say that it provided a means of determining when an indicative sentence expressed a proposition, or, in other words, of distinguishing the statements that belonged to the class of propositions from those that did not.

It should be remarked that this decision to say that sentences express statements involves nothing more than the adoption of a verbal convention; and the proof of this is that the question, "What do sentences express?" to which it provides an answer is not a factual question. To ask of any particular sentence what it is that it expresses may, indeed, be to put a factual question; and one way of answering it would be to produce another sentence which was a translation of the first. But if the general question, "What do sentences express?" is to be interpreted factually, all that can be said in answer is that, since it is not the case that all sentences are equivalent, there is not any one thing that they all express. At the same time, it is useful to have a means of referring indefinitely to "what sentences express" in cases where the sentences themselves are not particularly specified; and this purpose is served by the introduction of the word "statement" as a technical term. Accordingly, in saying that sentences express statements, we are indicating how this technical term is to be understood, but we are not thereby conveying any factual information in the sense in which we should be conveying factual

information if the question we were answering was empirical. This may, indeed, seem a point too obvious to be worth making; but the question, "What do sentences express?" is closely analogous to the question, "What do sentences mean?" and, as I have tried to show elsewhere,<sup>1</sup> the question, "What do sentences mean?" has been a source of confusion to philosophers because they have mistakenly thought it to be factual. To say that indicative sentences mean propositions is indeed legitimate, just as it is legitimate to say that they express statements. But what we are doing, in giving answers of this kind, is to lay down conventional definitions; and it is important that these conventional definitions should not be confused with statements of empirical fact.

Returning now to the principle of verification, we may, for the sake of brevity, apply it directly to statements rather than to the sentences which express them, and we can then reformulate it by saying that a statement is held to be literally meaningful if and only if it is either analytic or empirically verifiable. But what is to be understood in this context by the term "verifiable"? I do indeed attempt to answer this question in the first chapter of this book; but I have to acknowledge that my answer is not very satisfactory.

To begin with, it will be seen that I distinguish between a "strong" and a "weak" sense of the term "verifiable," and that I explain this distinction by saying that "a proposition is said to be verifiable in the strong sense of the term, if and only if its truth could be conclusively established in experience," but that "it is verifiable, in the weak sense, if it is possible for experience to render it probable." And I then give reasons for deciding that it is only the weak sense of the term that is required by my principle of verification. What I seem, however, to have overlooked is that, as I represent them, these are not two genuine alternatives.<sup>2</sup> For I subsequently go on to argue that all empirical propositions are hypotheses which are continually subject to the test of further experience; and from this it would follow not merely that the truth of any such proposition never was conclusively established but that it never could be; for however

<sup>1</sup> In *The Foundations of Empirical Knowledge*, pp. 92-104.

<sup>2</sup> Vide M. Lazerowitz, "Strong and Weak Verification," *Mind*, 1939, pp. 202-13.

strong the evidence in its favour, there would never be a point at which it was impossible for further experience to go against it. But this would mean that my "strong" sense of the term "verifiable" had no possible application, and in that case there was no need for me to qualify the other sense of "verifiable" as weak; for on my own showing it was the only sense in which any proposition could conceivably be verified.

If I do not now draw this conclusion, it is because I have come to think that there is a class of empirical propositions of which it is permissible to say that they can be verified conclusively. It is characteristic of these propositions, which I have elsewhere<sup>1</sup> called "basic propositions," that they refer solely to the content of a single experience, and what may be said to verify them conclusively is the occurrence of the experience to which they uniquely refer. Furthermore, I should now agree with those who say that propositions of this kind are "incorrigible," assuming that what is meant by their being incorrigible is that it is impossible to be mistaken about them except in a verbal sense. In a verbal sense, indeed, it is always possible to misdescribe one's experience; but if one intends to do no more than record what is experienced without relating it to anything else, it is not possible to be factually mistaken; and the reason for this is that one is making no claim that any further fact could confute. It is, in short, a case of "nothing venture, nothing lose." It is, however, equally a case of "nothing venture, nothing win," since the mere recording of one's present experience does not serve to convey any information either to any other person or indeed to oneself; for in knowing a basic proposition to be true one obtains no further knowledge than what is already afforded by the occurrence of the relevant experience. Admittedly, the form of words that is used to express a basic proposition may be understood to express something that is informative both to another person and to oneself, but when it is so understood it no longer expresses a basic proposition. It was for this reason, indeed, that I maintained, in the fifth chapter of this book, that there could not be such things as basic propositions, in the sense in which I am now using the term; for the burden of my argument was that no synthetic proposition could be purely ostensive. My reasoning on

<sup>1</sup> "Verification and Experience," *Proceedings of the Aristotelian Society*, Vol. XXXVII; cf. also *The Foundations of Empirical Knowledge*, pp. 80-4.

this point was not in itself incorrect, but I think that I mistook its purport. For I seem not to have perceived that what I was really doing was to suggest a motive for refusing to apply the term "proposition" to statements that "directly recorded an immediate experience"; and this is a terminological point which is not of any great importance.

Whether or not one chooses to include basic statements in the class of empirical propositions, and so to admit that some empirical propositions can be conclusively verified, it will remain true that the vast majority of the propositions that people actually express are neither themselves basic statements, nor deducible from any finite set of basic statements. Consequently, if the principle of verification is to be seriously considered as a criterion of meaning, it must be interpreted in such a way as to admit statements that are not so strongly verifiable as basic statements are supposed to be. But how then is the word "verifiable" to be understood?

It will be seen that, in this book, I begin by suggesting that a statement is "weakly" verifiable, and therefore meaningful, according to my criterion, if "some possible sense-experience would be relevant to the determination of its truth or falsehood." But, as I recognize, this itself requires interpretation; for the word "relevant" is uncomfortably vague. Accordingly, I put forward a second version of my principle, which I shall restate here in slightly different terms, using the phrase "observation-statement," in place of "experiential proposition," to designate a statement "which records an actual or possible observation." In this version, then, the principle is that a statement is verifiable, and consequently meaningful, if some observation-statement can be deduced from it in conjunction with certain other premises, without being deducible from those other premises alone.

I say of this criterion that it "seems liberal enough," but in fact it is far too liberal, since it allows meaning to any statement whatsoever. For, given any statement "S" and an observation-statement "O," "O" follows from "S" and "if S then O" without following from "if S then O" alone. Thus, the statements "the Absolute is lazy" and "if the Absolute is lazy, this is white" jointly entail the observation-statement "this is white," and since "this is white" does not follow from either of these premises, taken

by itself, both of them satisfy my criterion of meaning. Furthermore, this would hold good for any other piece of nonsense that one cared to put, as an example, in place of "the Absolute is lazy," provided only that it had the grammatical form of an indicative sentence. But a criterion of meaning that allows such latitude as this is evidently unacceptable.<sup>1</sup>

It may be remarked that the same objection applies to the proposal that we should take the possibility of falsification as our criterion. For, given any statement "S" and any observation-statement "O", "O" will be incompatible with the conjunction of "S" and "if S then not O." We could indeed avoid the difficulty, in either case, by leaving out the stipulation about the other premises. But as this would involve the exclusion of all hypotheticals from the class of empirical propositions, we should escape from making our criteria too liberal only at the cost of making them too stringent.

Another difficulty which I overlooked in my original attempt to formulate the principle of verification is that most empirical propositions are in some degree vague. Thus, as I have remarked elsewhere,<sup>2</sup> what is required to verify a statement about a material thing is never the occurrence of precisely this or precisely that sense-content, but only the occurrence of one or other of the sense-contents that fall within a fairly indefinite range. We do indeed test any such statement by making observations which consist in the occurrence of particular sense-contents; but, for any test that we actually carry out, there is always an indefinite number of other tests, differing to some extent in respect either of their conditions or their results, that would have served the same purpose. And this means that there is never any set of observation-statements of which it can truly be said that precisely they are entailed by any given statement about a material thing.

Nevertheless, it is only by the occurrence of some sense-content, and consequently by the truth of some observation-statement, that any statement about a material thing is actually verified; and from this it follows that every significant statement about a material thing can be represented as entailing a disjunction of observation-statements, although the terms of this disjunction,

<sup>1</sup> Vide I. Berlin, "Verifiability in Principle," *Proceedings of the Aristotelian Society*, Vol. XXXIX.

<sup>2</sup> *The Foundations of Empirical Knowledge*, pp. 240-1.

being infinite, can not be enumerated in detail. Consequently, I do not think that we need be troubled by the difficulty about vagueness, so long as it is understood that when we speak of the "entailment" of observation-statements, what we are considering to be deducible from the premises in question is not any particular observation-statement, but only one or other of a set of such statements, where the defining characteristic of the set is that all its members refer to sense-contents that fall within a certain specifiable range.

There remains the more serious objection that my criterion, as it stands, allows meaning to any indicative statement whatsoever. To meet this, I shall emend it as follows. I propose to say that a statement is directly verifiable if it is either itself an observation-statement, or is such that in conjunction with one or more observation-statements it entails at least one observation-statement which is not deducible from these other premises alone; and I propose to say that a statement is indirectly verifiable if it satisfies the following conditions: first, that in conjunction with certain other premises it entails one or more directly verifiable statements which are not deducible from these other premises alone; and secondly, that these other premises do not include any statement that is not either analytic, or directly verifiable, or capable of being independently established as indirectly verifiable. And I can now reformulate the principle of verification as requiring of a literally meaningful statement, which is not analytic, that it should be either directly or indirectly verifiable, in the foregoing sense.

It may be remarked that in giving my account of the conditions in which a statement is to be considered indirectly verifiable, I have explicitly put in the proviso that the "other premises" may include analytic statements; and my reason for doing this is that I intend in this way to allow for the case of scientific theories which are expressed in terms that do not themselves designate anything observable. For while the statements that contain these terms may not appear to describe anything that anyone could ever observe, a "dictionary" may be provided by means of which they can be transformed into statements that are verifiable; and the statements which constitute the dictionary can be regarded as analytic. Were this not so, there would be nothing to choose between such scientific theories and those that I should dismiss

as metaphysical; but I take it to be characteristic of the metaphysician, in my somewhat pejorative sense of the term, not only that his statements do not describe anything that is capable, even in principle, of being observed, but also that no dictionary is provided by means of which they can be transformed into statements that are directly or indirectly verifiable.

Metaphysical statements, in my sense of the term, are excluded also by the older empiricist principle that no statement is literally meaningful unless it describes what could be experienced, where the criterion of what could be experienced is that it should be something of the same kind as actually has been experienced.<sup>1</sup> But, apart from its lack of precision, this empiricist principle has, to my mind, the defect of imposing too harsh a condition upon the form of scientific theories; for it would seem to imply that it was illegitimate to introduce any term that did not itself designate something observable. The principle of verification, on the other hand, is, as I have tried to show, more liberal in this respect, and in view of the use that is actually made of scientific theories which the other would rule out, I think that the more liberal criterion is to be preferred.

It has sometimes been assumed by my critics that I take the principle of verification to imply that no statement can be evidence for another unless it is a part of its meaning; but this is not the case. Thus, to make use of a simple illustration, the statement that I have blood on my coat may, in certain circumstances, confirm the hypothesis that I have committed a murder, but it is not part of the meaning of the statement that I have committed a murder that I should have blood upon my coat, nor, as I understand it, does the principle of verification imply that it is. For one statement may be evidence for another, and still neither itself express a necessary condition of the truth of this other statement, nor belong to any set of statements which determines a range within which such a necessary condition falls; and it is only in

<sup>1</sup> cf. Bertrand Russell, *The Problems of Philosophy*, p. 91: "Every proposition which we can understand must be composed wholly of constituents with which we are acquainted." And, if I understand him correctly, this is what Professor W. T. Stace has in mind when he speaks of a "Principle of Observable Kinds." Vide his "Positivism," *Mind*, 1944. Stace argues that the principle of verification "rests upon" the principle of observable kinds, but this is a mistake. It is true that every statement that is allowed to be meaningful by the principle of observable kinds is also allowed to be meaningful by the principle of verification; but the converse does not hold.

these cases that the principle of verification yields the conclusion that the one statement is part of the meaning of the other. Thus, from the fact that it is only by the making of some observation that any statement about a material thing can be directly verified it follows, according to the principle of verification, that every such statement contains some observation-statement or other as part of its meaning, and it follows also that, although its generality may prevent any finite set of observation-statements from exhausting its meaning, it does not contain anything as part of its meaning that cannot be represented as an observation-statement; but there may still be many observation-statements that are relevant to its truth or falsehood without being part of its meaning at all. Again, a person who affirms the existence of a deity may try to support his contention by appealing to the facts of religious experience; but it does not follow from this that the factual meaning of his statement is wholly contained in the propositions by which these religious experiences are described. For there may be other empirical facts that he would also consider to be relevant; and it is possible that the descriptions of these other empirical facts can more properly be regarded as containing the factual meaning of his statement than the descriptions of the religious experiences. At the same time, if one accepts the principle of verification, one must hold that his statement does not have any other factual meaning than what is contained in at least some of the relevant empirical propositions; and that if it is so interpreted that no possible experience could go to verify it, it does not have any factual meaning at all.

In putting forward the principle of verification as a criterion of meaning, I do not overlook the fact that the word "meaning" is commonly used in a variety of senses, and I do not wish to deny that in some of these senses a statement may properly be said to be meaningful even though it is neither analytic nor empirically verifiable. I should, however, claim that there was at least one proper use of the word "meaning" in which it would be incorrect to say that a statement was meaningful unless it satisfied the principle of verification; and I have, perhaps tendentiously, used the expression "literal meaning" to distinguish this use from the others, while applying the expression "factual meaning" to the case of statements which satisfy my criterion without being analytic. Furthermore, I suggest that it is only if it is literally

meaningful, in this sense, that a statement can properly be said to be either true or false. Thus, while I wish the principle of verification itself to be regarded, not as an empirical hypothesis,<sup>1</sup> but as a definition, it is not supposed to be entirely arbitrary. It is indeed open to anyone to adopt a different criterion of meaning and so to produce an alternative definition which may very well correspond to one of the ways in which the word "meaning" is commonly used. And if a statement satisfied such a criterion, there is, no doubt, some proper use of the word "understanding" in which it would be capable of being understood. Nevertheless, I think that, unless it satisfied the principle of verification, it would not be capable of being understood in the sense in which either scientific hypotheses or common-sense statements are habitually understood. I confess, however, that it now seems to me unlikely that any metaphysician would yield to a claim of this kind; and although I should still defend the use of the criterion of verifiability as a methodological principle, I realize that for the effective elimination of metaphysics it needs to be supported by detailed analyses of particular metaphysical arguments.

#### THE "A PRIORI"

In saying that the certainty of *a priori* propositions depends upon the fact that they are tautologies, I use the word "tautology" in such a way that a proposition can be said to be a tautology if it is analytic; and I hold that a proposition is analytic if it is true solely in virtue of the meaning of its constituent symbols, and cannot therefore be either confirmed or refuted by any fact of experience. It has, indeed, been suggested<sup>2</sup> that my treatment of *a priori* propositions makes them into a sub-class of empirical propositions. For I sometimes seem to imply that they describe the way in which certain symbols are used, and it is undoubtedly an empirical fact that people use symbols in the ways that they do. This is not, however, the position that I wish to hold; nor do I think that I am committed to it. For although I say that the validity of *a priori* propositions depends upon certain facts about verbal usage, I do not think that this is

<sup>1</sup> Both Dr. A. C. Ewing, "Meaninglessness," *Mind*, 1937, pp. 347-64, and Stace, *op. cit.*, take it to be an empirical hypothesis.

<sup>2</sup> e.g. by Professor C. D. Broad, "Are these Synthetic *a priori* Truths," *Supplementary Proceedings of the Aristotelian Society*, Vol. XV.

equivalent to saying that they describe these facts in the sense in which empirical propositions may describe the facts that verify them; and indeed I argue that they do not, in this sense, describe any facts at all. At the same time I allow that the usefulness of *a priori* propositions is founded both on the empirical fact that certain symbols are used in the way that they are and on the empirical fact that the symbols in question are successfully applied to our experience; and I try in the fourth chapter of this book to show how this is so.

Just as it is a mistake to identify *a priori* propositions with empirical propositions about language, so I now think that it is a mistake to say that they are themselves linguistic rules.<sup>1</sup> For apart from the fact that they can properly be said to be true, which linguistic rules cannot, they are distinguished also by being necessary, whereas linguistic rules are arbitrary. At the same time, if they are necessary it is only because the relevant linguistic rules are presupposed. Thus, it is a contingent, empirical fact that the word "earlier" is used in English to mean earlier, and it is an arbitrary, though convenient, rule of language that words that stand for temporal relations are to be used transitively; but, given this rule, the proposition that, if A is earlier than B and B is earlier than C, A is earlier than C becomes a necessary truth. Similarly, in Russell's and Whitehead's system of logic, it is a contingent, empirical fact that the sign " $\supset$ " should have been given the meaning that it has, and the rules which govern the use of this sign are conventions, which themselves are neither true nor false; but, given these rules the *a priori* proposition " $q \supset p \supset q$ " is necessarily true. Being *a priori*, this proposition gives no information in the ordinary sense in which an empirical proposition may be said to give information, nor does it itself prescribe how the logical constant " $\supset$ " is to be used. What it does is to elucidate the proper use of this logical constant; and it is in this way that it is informative.

An argument which has been brought against the doctrine that *a priori* propositions of the form "p entails q" are analytic is that it is possible for one proposition to entail another without containing it as part of its meaning; for it is assumed that this would not be possible if the analytic view of entailment were

<sup>1</sup> This contradicts what I said in my contribution to a symposium on "Truth by Convention," *Analysis*, Vol. 4, Nos. 2 and 3; cf. also Norman Malcolm, "Are Necessary Propositions really Verbal," *Mind*, 1940, pp. 189-203.