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Logical Positivism and the Principle of Verification

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by

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VITA

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CHAPTER I

INTRODUCTION

In 1922, there began at the University of Vienna a seminar led by the physicist-philosopher Professor Moritz Schlick. The membership of this seminar group was, in large measure, composed of "amateur" philosophers. They were men whose main or original specialization lay in other fields of knowledge. The original members included, to mention a few, Victor Kraft, historian; Hans Hahn, mathematician; Felix Kaufmann, lawyer; Otto Neurath, sociologist; Kurt Reidemeister, mathematician. And among the numerous visitors who swelled their ranks were such men as the Prague physicist, Philipp Frank, and Alfred J. Ayer of Oxford.

These meetings quickly came to life in 1926 with the arrival of Rudolf Carnap. His Logische Aufbau der Welt and also Ludwig Wittgenstein's Tractatus Logico-Philosophicus were full and precise statements of the early philosophizing of this group and the basis of long discussions. Out of these two works came the first real philosophical position of Logical Positivism.

During the course of these meetings, it was suggested that a name be adopted for the group in order to lend a pleasant aspect to their purposes and to connect them with

the quiet university life of old Vienna. The name adopted accomplished all this and even more, when the nucleus of this new movement became known as the "Vienna Circle." Thus in the borderland of German idealistic influence emerged this modern form of empiricism.

In 1936, however, the meetings ended rather abruptly with the assassination of Professor Schlick by a former student. But the new philosophy, which had its beginning here, did not end with the Vienna Circle. Other movements, in Europe and America, followed; and the philosophy of Logical Positivism, with its great attraction for men of science, continued to grow with the scientific spirit of the age.

Perhaps nowhere today has the positivist movement gained greater momentum than in the United States. This is due, in part, to our own philosophical background and, in part, to the anti-cultural and anti-Semitic policies of Nazism which caused the emigration of several of the leading figures in the movement to this country. Among the group were Rudolf Carnap, Hans Reichenback, Philipp Frank, Richard von Mises, Hervert Feigl, Carl Hempel. The influence of these men has indeed been wide, stemming, as it does, from many of our major Universities - Chicago, California, Harvard, Minnesota, and in some measure from Princeton.

Logical Positivism, however, is not something entirely new in the history of thought. Insistence on experience and the experimental trial and error method has characterized many a philosophical position. In antiquity, we find the Sophists, Stoics and Equicureans; in the Middle Ages, the Nominalists. Modern times has witnessed a greater development of this line of thought, with Bacon, Hobbes, Locke, Hume, Bentham, J. S. Mill, and Spencer in England and, in France, D'Alembert, Saint-Simon, Comte, and Poincaré.

Of this group, David Hume seems to have played the most significant role in the genesis of modern positivism. At least two conclusions of his empirical hypotheses bear close resemblance to common positivist tenets, namely, that the sphere of deductive reasoning is closed to statements about matters of fact and, secondly, the factual statements can ultimately be reduced to statements concerned solely with sense experience.

Auguste Comte, although of the "positive" family, does not bear the close ties of kinship to the modern movement that one might suspect. Any trans-empirical philosophy, for Comte, had simply outlived its usefulness. Consequently, the only "positive" sciences were mathematics, astronomy, physics, chemistry, biology, and sociology. There is a gap between these six basic sciences, however, which eliminates the possibility of a "unity of science." Since the Logical Positivist insists

that all scientific statements can be reduced to statements of sensations, it appears that he is closer to British empirical thought than the French materialist speculation.

The United States, too, has had a history of empiricism. Positivism found rich ground for growth in the soil tilled by pragmatism, instrumentalism, and operationalism. The writings of Charles S. Peirce and especially his essay, "How to Make Our Ideas Clear," gave great impetus to the philosophic movement of pragmatism in this country. The meaning of a statement, Peirce wrote, consists in the sum of its verifiable consequences. There could be no difference in meaning that did not make a difference in practice.[1] Peirce, moreover, like the contemporary British philosopher and scientist, Bertrand Russell, combined this attraction for the empirical with a deep interest in symbolic logic - a combination that is the hall-mark of logical positivism.

Peirce's close friend, William James, continued to develop the philosophy of pragmatism. In his Pragmatism, James stresses continually the relationship of a term's meaning to its "Cash value in experiential terms."[2] A statement has meaning,

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1 Charles S. Peirce, "How To Make Our Ideas Clear," Collected Papers, I, Principles of Philosophy, eds. Hartshorne and Weiss, Harvard University Press, 1931, 400, 402. (numbers refer to paragraph numbers)

2 William James, Pragmatism, New York, 1912, 53, 200.

then, if it has experiential consequences and these consequences constitute the very meaning of the statement. The truth of an idea, consequently, is a process, "the process namely of its verifying itself, its veri-fication."[3]

Other pragmatic theories followed that of James, the instrumentalism of Dewey and the operationalism of Bridgeman, all of which tied American philosophical thought more closely to the empirical.

How then may we describe the philosophy of contemporary logical positivism? John Laird's description is amusing but nevertheless, true:

> By positivism in its most general sense we mean the theory that if you want to know anything about anything, you must either make an appointment with one of the sciences or else be content to be cheated. Outside the sciences there is no information. The poets may beguile you or exalt you but they cannot tell you anything. Theologians may bewilder you, philosophers may rack you and rhetoricians may soothe you. But none of them can tell you anything.[4]

The positivist, to stress the obvious, is a man completely devoted to science and the scientific method. History, he will argue, speaks for itself. For nearly two thousand years, from the time of Aristotle, progress and discovery in science

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3 Ibid., 201. (For present purposes we omit a consideration of James' second criterion of meanings and truth, developed in his theory of the "will to believe.")

4 John Laird, "Positivism, Empiricism and Metaphysics," Proceedings of the Aristotelian Society, XXXIX, 1938-1939, 240.

was relatively slow and small. Then in the 16th century something momentous happened. Success became the order of the day, achievements multiplied, advances were made by leaps and bounds. The names of Copernicus (1472 - 1543), Francis Bacon (1561 - 1642), Kepler (1571 - 1630), and Newton (1642 - 1727), date the beginnings of the rich harvest of science.

In the centuries that followed, man was relieved of many of the burdens formerly imposed by space and time. Medicine has prolonged his life and lessened his sufferings. Mechanics and chemistry have given man a relative mastery over space and time with the locomotive, the auto, the aeroplane. Electricity has given us the light and force a highly productive civilization needs; it has made possible new and more efficient media of communication. And on the dawn of the atomic age, there seems no end to what science can accomplish.

Because of this rich fruitfulness of science, the positivist concludes that scientific methods be required of <u>all</u> fields of human knowledge. In particular, philosophy must disengage itself from the sterile speculation of the past and must proceed along scientific lines. In short, the quite valid methodology of one discipline is quite invalidly demanded of all disciplines.

As the name "Logical Positivism" would imply, attention to mathematics and logic and emphasis on the linguistic aspects

of traditional philosophical problems appear as indelible marks distinguishing logical positivists from the early empiricists. Positivism systematically approaches the problem of meaning by means of a logical analysis of language in distinction to the earlier, more psychologically orientated forms of Empiricism, Positivism, and Pragmatism.[5] This is the logic of logical positivism.

Thus the coupling of sense perception and logic is what differentiates positivism from the older empiricism. As Victor Kraft argues, the positivists have combined the insight into the a priori nature of logic and mathematics with the empiricist tenet of validation by experience alone.[6] Previously, Kraft continues, most of the philosophers who recognized this a priori nature were apriorists even with regard to knowledge of reality. Empiricists, on the other hand, failed to see this a priori nature of logic and mathematics, holding that all knowledge and science is derived from experience as the sole ground of validity. The "Vienna Circle" restricted the empiricist thesis to factual knowledge. All factual knowledge, they maintained, is derived from experience and can be validated by experience alone. The core of empiricism was thereby

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5 Herbert Feigl, "Logical Empiricism," Twentieth Century Philosophy: Living Schools of Thought, ed. Runes, New York, 1943, 377.

6 Victor Kraft, The Vienna Circle, New York, 1953, 23-24

perserved. Though recognizing the a priori validity of logic and mathematics, the early positivists did not veer toward some type of rationalism with respect to factual knowledge since neither logic nor mathematics make any factual assertions at all.

This last notion of non-factual assertions (which the positivist calls tautologies or analytic statements) requires greater development, as it is essential for an understanding of philosophic positivism. Long before the Vienna Circle began its discussions, Immanuel Kent had focused attention on one important noetic fact which no succeeding philosopher could seriously deny. Kant saw clearly that the acquisition of empirical data would not be true human knowledge until it had taken on the forms of the categories. In other words, a perception of an existing other could not be rendered meaningful unless subsumed under some class or concept. Sheer empiricism, consequently, is impossible. In this sense Kant's famous dictum is not altogether erroneous, namely, that perception without concepts is blind and concepts without perception are empty.

For Kant, however, there is a structural necessity to think according to definite forms or categories. Kantian philosophy, as a consequence, petrified notions of Newtonian physics in its explanation of the space-time category. Positivists were fully conscious of this deficiency and endeavored to formulate a doctrine which would leave room for the evolution of science.

Two philosopher-scientists, Ernst Mach and Henri Poincaré, disputed a solution to this difficulty. The question before them was, in essence: what are class notions? Considering the problem on the scientific level, they asked: what are the general principles of science? According to Mach, they are abbreviated economical descriptions of observed facts; according to Poincaré, they are free creations of the human mind which do not tell anything about observed facts.[7] An attempt to integrate the two concepts into one coherent system led to the development of logical positivism. For the positivist all class concepts and generalizations are pure constructions of the mind. They are neither real and objective nor a priori determinations of the mind, but merely arbitrary conventions about how to use some words or expressions; they function as tools of the mind to aid in the correlation of sense data. But such constructions may have factual import, according to positivists, provided they in no way refer to what is, in principle, beyond sense observation. In brief, the whole content of the class must be empirical.

This whole positivist scheme offered much more possibility of synthesis and unity than the older form of

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7 Phillip Frank, Modern Science and Its Philosophy, Cambridge (Mass.), 1949, 6-9.

empiricism. By adding the device of logic and mathematics, it brought about some manageable control of empirical data. In contrast with pragmatism and operationalism, positivism formulated its criteria of meaning in a strictly logical way, which satisfied the rigid requirements of a formal science. These were, undoubtedly, strong reasons why professional scientists and logicians were drawn to the philosophy of positivism.

What then did philosophy become on positivist terms? Philosophy could be no more than the mental activity of classification of ideas. It is logical analysis, i.e., a clarification of the language used in everyday life.[8] In short, philosophy became logic. Numerous centers of positivism have arisen, all embodying this conception of philosophy: in the United States we find the schools of Carnap, Frank, and Reichenbach, and the Chicago school of Charles W. Morris; in England, there is the Cambridge school divided into groups under Russell and Wittgenstein, and finally the Oxford school of Alfred Ayer.

It was Wittgenstein, however, who was the first to emphasize that the traditional problems of philosophy were nothing but verbal problems. The school of philosophic method

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8 Gustav Bergman, "Logical Positivism," A History of Philosophical Systems, ed. Fern, New York, 1950, 472.

under his leadership at Cambridge, called "therapeutic positivism," maintains that philosophy is not a discipline aiming at some superior type of knowledge or intellectual discovery, but only a method of revealing the linguistic confusions that gave rise to philosophical problems and of solving these problems simply by showing there were no genuine problems to begin with.[9] It is undoubtedly due in large measure to Wittgenstein that we find the positivist preoccupation with semantics (an analysis of the meaning of terms and expressions) and with syntax (the formal analysis of sentence structure).

No matter what the predominant influence, the friendly little discussion group called the "Vienna Circle" set in motion a new movement of empiricism which spread throughout Europe and the United States.

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9 Cf. E. A. Farrell, "An Appraisal of Therapeutic Positivism," I, Mind, LV, 217, January, 1946, 25-46; "An Appraisal of Therapeutic Positivism," II, Mind, LV, 218, April, 1946, 133-150.

CHAPTER II

THE PRINCIPLE OF VERIFICATION

The problem of meaning is undoubtedly the most important and most widely debated topic in positivist circles today. For an understanding of the positivist's stand, moreover, his view of meaning is basic, for on it depends the sum total of his philosophical tenets and conclusions. Since the "principle of verifiability" signifies an essential generalization of this view, a critical analysis of the verifiability principle seems the tool most apt for evaluating the philosophy of contemporary positivists.

The positivists, we noted previously, stands in awe of the luminous achievements of modern science. As a result, he claims that all questions of fact, of whatever branch of knowledge, can be decided by the empirical methods of science alone. So with regard to the general concept of meaning, he infers logically: the meaning of a statement is the method of its verification. This is the verification principle in its simplest form. Whether the individual positivist wishes to equate verification with the meaning of a statement or simply to make it the test of meaning, will make little difference in practice. His two chief problems concern the question of meaning and the question of verification. The former asks under what conditions

a sentence has meaning; the latter, how we discover whether a sentence is true or false. The second question presupposes the first and, in a certain sense, there is only one answer to both problems. For, from a positivist's view, to know what it would be for a sentence to be true is to know its meaning. And if the truth-conditions be impossible even to imagine, the sentence is simply meaningless.

The same point is brought out in an example by Professor Waismann. Contrasting the two propositions "the dog barks" and "the dog thinks," he notes that the first contains a normal use of words while the second contains a use which is outside the boundaries of common speech.[1] In answering a question as to the meaning of the proposition "the dog thinks," Waismann concludes that "explaining the verification is explaining the meaning, and changing the meaning is changing the verification."[2] In this sense, then, meaning would seem to be identical with verification.

There is a further notion, however, which is essential for an understanding of the verification principle. Bertrand Russell has objected that, according to this

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1 F. Waismann, "Symposium: Verifiability," Proceedings of the Aristotelian Society, Suppl. XIX, 1945, 120.

2 Ibid.

principle, propositions like the following are rendered meaningless: "atomic warfare may lead to the extermination of life on earth" and "there was a time before there was life on earth."[3] This is not the case since all positivists make a distinction between practical verifiability and verifiability in principle. An example frequently used by positivists can best clarify the significance of this distinction. The proposition, "there is a mountain 3000 feet high on the other side of the moon," appears to be an unverifiable statement. No human being has ever reported his observations of the moon's farther side. The proposition, consequently, would be meaningless. Positivists insist, however, that verifiability is not a matter of the physical possibility of verification, much less of actual verification. Rather, it refers only to the logical possibility of observation. To determine meaningfulness, one need only to be able to conceive of the observations that would confirm or deny a proposition. The statement, "rivers flow uphill," may be physically impossible to verify, yet it is logically possible or verifiable in principle and hence meaningful.

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3 B. Russell, "Logical Positivism," Revue Internationale de Philosophie, IV, 1950, 9.

According to the positivist, then, the verification principle is a criterion of cognitive significence rather than of truth. It answers the question: has this proposition factual meaning or not? Truth and falsity enter later when actual verification is accomplished. The proposition about the far side of the moon will not be true until someone actually observes a mountain there 3000 feet high. True, accordingly, means confirmed by empirical observation.

What has been said thus far concerning the verification principle is general enough and would be agreeable to positivists of all shades and hues. But since positivists determine the meaning of reality sentences by their verifiability, the exact formulation of the verification principle will be of the utmost importance to them. And it is here that differences of opinion begin. For purposes of analysis we shall trace the qualifications and revisions of this principle, made by positivists themselves, to determine whether or not such a criterion of meaning is the panacea of philosophical ills it is made out to be. Alfred J. Ayer's formulation of the verification principle will merit extensive consideration. For, in Ayer, there is the self-acknowledged influence of Berkely and Hume, of Russell and Wittgenstein, and particularly of members of the Vienna Circle. His Language, Truth and Logic, furthermore, is the

first clear and full presentation by an English writer of common positivist doctrines and, in addition, offers a detailed and revised account of the verification principle. Indeed, Language, Truth and Logic seems to be regarded as the "catechism" of modern positivism.

In general terms the verification principle may be stated as follows: a sentence is factually significant if, and only if, some observations would be relevant to its truth or falsity. Sense experience alone constitutes factual meaningfulness. Essentially, then, positivism is nothing but a modern version of the old theme "empiricism."

The original, and perhaps most familiar statement of the verification principle, was given by Professor Moritz Schlick in the form: "the meaning of a proposition is the method of its verification."[4] In the eyes of Professor Schlick, this criterion was no mere hypothesis but simply a statement of the way meaning is actually assigned to propositions, both in everyday life and in science.[5] These views can well be considered embryonic - the first, rudimentary contentions upon which the original logical

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4 Moritz Schlick, "Meaning and Verification," Readings in Philosophical Analysis, eds., Feigl and Sellars, New York, 1949, 148.

5 Ibid.

positivist speculations were built. The difficulty with Schlick's criterion, as argued by Carnap, Hempel, Waismann and Ayer, was that it demanded conclusive verifiability as a test of meaning - that is, a proposition could be said to be meaningful only if its truth could be conclusively established in experience.

The main reason for the positivist rejection of conclusive verifiability is that it rules out all propositions of universal form and thus all statements expressing general laws. General propositions like "all men are mortal" and "all bodies are extended," Ayer explains, by nature cover an infinite number of cases and no finite series of observations could possible establish them with certainty.[6] Consequently, if conclusive verifiability is upheld, propositions of this sort must be regarded as pieces of nonsense. But propositions of universal form constitute and integral part of scientific theories, argues Carl Hempel, and he therefore rejects Schlick's criterion as overly restrictive.[7] Waismann is in substantial agreement with both Hempel and

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6 A. J. Ayer, Language, Truth and Logic, New York, 1951, 37.

7 Carl Hempel, "Problems and Changes in the Empiricist Criterion of Meaning," Revue Internationale de Philosophie, IX, 1950, 46.

Ayer but adds conclusive verifiability must be abandoned not only because of the unlimited number of tests involved but also because of the "open texture" of the terms themselves, i.e., the possibility of some totally new experiences or of new discoveries affecting the interpretation of presently accepted facts.[8]

Professor Ayer gives still other reasons for the rejection of Schlick's criterion. Statements about the past, as well as general laws, must be judged non-significant on this criterion. For, as Ayer maintains, historical statements can never be more than highly probable.[9] A more compelling reason from Ayer's view, however, is that, should conclusive verifiability be demanded as a criterion of meaning, it would be impossible to make any significant statement of fact at all. For, on his showing, no factual statement, whether general or purely ostensive, can possibly be more than an empirical hypothesis and hence only probable.[10]

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8 F. Waismann, "Symposium: Verifiability," Proceedings of the Aristotelian Society, Suppl. XIX, 1945, 126-127. Rudolf Carnap makes the same argument in his essay, "Time and Testability," Philosophy of Science, III, 1936, 425.

9 A. J. Ayer, Language, Truth and Logic, New York, 1951, 37.

10 Ibid., 38, 91. (The question of basic or ostensive propositions and that of probability will be treated in chapter IV.)

Thus Professor Schlick's criterion has been abandoned by all present-day positivists. But the arguments traced above bring to light the definite relative notion that will be contained in any new criterion of meaning. As pragmatists assert, there can be no absolute truth for the future may always change things. In like manner, positivists reject the very notion of "absolute," since they can admit only a relative confirmation, to a greater or less degree, of any factual statement whatever. Indeed, Neurath and Popper have argued for the substitution of confirmed and unconfirmed in place of true and false.[11] Carnap, too, has spoken against the notion of absolute, suggesting that the mathematical laws of probability replace conventional truth-values.[12] The absolute for a positivist is simply non-sensical.

In view of these difficulties connected with complete verifiability, Karl Popper advanced a substitute criterion which he termed complete falsifiability.[13] A

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11 Victor Kraft, The Vienna Circle, New York, 1953, 149.

12 Rudolf Carnap, Logical Foundations of Probability, Chicago, 1950, 177.

13 Karl Popper, Logik der Forschung, Vienna, 1935, 13.

sentence would be factually significant, according to this criterion, if, and only if, it can be definitely confuted by experience. In the first place, all positivists today will not allow that the vast majority of factual propositions can be conclusively confuted any more than they will allow conclusive verification. But even should Popper's supposition be granted, difficulties remain. In establishing any proposition of universal form, how could one ever stop a process of falsifiability? If I have performed n number of tests, where n be taken as any number, and these tests have all verified the proposition in question, why could not another n experiments report quite the contrary? Or vice versa, if n number of tests have disqualified my hypothesis, why could not following tests of equal number validate that hypothesis to some extent? On positivist principles, this may be improbable but nonetheless possible. The non-terminating process of falsifiability Popper himself seems to recognize.[14] And as such, positivists argue that complete falsifiability is inadequate as a criterion of meaning.

Waismann adds a consideration from the scientific viewpoint that would further discredit Popper's criterion.

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14 Ibid., 17, 19, 46, 48.

Theoretically, all that is required to invalidate a universal law is just one negative instance. However, Waismann remarks, "what astronomer would abandon Kepler's laws on the strength of a single observation?"[15] Scientists do, in fact, make the most varied attempts at explaining deviations before rejecting some accepted law.

In light of the inadequacies of Schlick's criterion of conclusive verifiability and of Popper's conclusive falsifiability, positivists were forced to reformulate their verification principle if it was to serve as a satisfactory criterion of meaning. Alfred J. Ayer, and the more contemporary positivists with him, have adopted weak or inconclusive verifiability as that principle. This will be the burden of the following chapter.

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15 F. Waismann, "Symposium: Verifiability," Proceedings of the Aristotelian Society, Suppl. XIX, 1945, 129.

CHAPTER III

THE WEAK SENSE OF VERIFIABILITY

A sentence is verifiable in a weak or inconclusive sense, Professor Ayer explains, not if its truth can be definitely established in experience, but simply if experience can render it probable.[1] Employing this more liberal criterion, he states the new criterion of factual meaning of a proposition in question form: "Would any observations be relevant to the determination of its truth or falsehood?"[2] From Ayer's view, the meaning dogma has been elevated to its throne and any statement that fails to meet its demands must forfeit its right to factual meaning. Of importance to note is that, by means of the verification principle, Ayer has segregated factual statements from all others. The residue will be made up of tautologies and nonsense.

Tautologies or analytic statements play an important role in positivist philosophy and must be considered at some length. The tautological purports to assert nothing of fact;

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1 A. J. Ayer, Language, Truth and Logic, New York, 1951, 37.

2 Ibid., 38.

it is purely a priori. Its whole function, according to Ayer, is to render explicit unsuspected and implicit implications of one's assertions and beliefs.[3] In short, the tautological makes for consistency in logical relationships. For this reason, tautologies are not pieces of nonsense, but give us a special kind of knowledge. Precisely because they say nothing about reality, they cannot be confuted and are therefore certain.

Included in the tautological order are not only logic and mathematics but all class concepts, all universal ideas as well. The positivist is neither a realist nor a Kantian in regard to class knowledge. Class notions have no objective validity whatever; nor are they products of some a priori determinations of the mind to think according to certain categories. For the positivist, the only real is the empirical and class concepts are free creations of the human mind - arbitrary conventions which serve as shorthand controls of empirical data.

The positivist explanation of class concepts, however, as complete and free creations of the mind, will not stand up under an analysis of knowledge. Very generally,

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3 Ibid., 79-81.

there can be no object of the human mind which is absolutely and completely constructed by the mind without some initial point of departure in experience. Even mathematics must have some starting point in experinece, though the slightest. And in such cases where there is partial construction, we are aware of this in reflection.

But more specifically, class knowledge as well cannot be simply and totally a matter of mental construction - there is always a datum, a given. For from a phenomenological view of knowledge, the mind encounters its object; it does not make it. Now positivists claim that the given is merely sensory and nothing more. But no true human experience can be purely sensory; some non-sensory element is always included which categorizes the sense datum and renders it meaningful. To the extent that I am able to verify "this is an animal" by some perception, what I perceive must be "animality" in this. In other words, the datum includes a class, a universal. This would be basic no matter how the relationship of class and inferior be explained and no matter what the ultimate psychological and metaphysical explanation. In any case, with his rejection of this datum, the positivist can never offer an adequate explanation of the phenomenon of knowledge.

Ayer and positivists in general, furthermore,

insist that the tautological order is not only arbitrary and completely independent of experience, but that it is also completely independent of the nature of the mind. There are absolutely no "laws of thought." The law of identity and non-contradiction, according to Ayer, are purely arbitrary conventions, valid in their own right, and do not even depend upon incorporation into a system.[4] In brief, they are valid by virtue of their form alone. It is perfectly conceivable to Ayer that we could have employed different linguistic conventions and that a hundred years from now men may think according to different rules. This is nothing else but intellectual suicide.

Ayer notwithstanding, man is capable of knowing being and the principles which necessarily follow upon being. In reflection he realizes that his intellect is moved to assent by the evidence of being; he realizes that being, the whole of reality, is the object of his knowledge and that this object is intelligible. By knowledge of being, then, man at least implicitly understands that "being is" and "that being cannot be and not be at the same time under the same respect." To this necessity ex parte rei, there corresponds a necessity ex parte mentis. Since man's

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4 Ibid., 81.

assent is determined by the evidence of being, the principles of identity and non-contradiction are absolute necessities of thought precisely because identity and non-contradiction are intrinsic necessities of being. These principles cannot be arbitrary conventions of linguistic use; they transcend language and have their roots in being itself. Human thought contrary to these principles is simply impossible.

In our analysis thus far we have seen Ayer's criterion of factual meaning, namely, verifiability in principle. The tautological or analytic, though devoid of factual meaning, is nonetheless meaningful within its own framework. A genuine proposition - and this corresponds roughly to Hume's "relations of ideas" and "matters of fact" - is either a priori or empirical. Ayer concludes then that any statement which is neither analytic nor empirically verifiable is nonsensical.[5] All metaphysical, i.e., all non-empirical statements of existential import, are reduced to nonsense. The razor of verifiability has indeed cut away a good deal of the flesh of human knowledge.

On what grounds now does Ayer reject metaphysics as meaningless? On strictly metaphysical grounds. According to the verification principle, a statement whose

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5 Ibid., 39.

validity cannot be tested by sense observation is nonsensical. The only real, consequently, is the empirical. The verification principle is itself a metaphysical statement concerning the nature of reality, a metaphysic of empiricism dressed up in 20th century clothes. To identify verifiability with verifiability by sense experience, to limit the real to the sensible, is an arbitrary assumption which begs the whole question of epistemology and metaphysics from the start.

Let us review the arguments of several philosophers who bring to light the arbitrary and metaphysical character of Ayer's anti-metaphysical views. Dr. A. C. Ewing, first of all, asks how the positivist establishes the truth of his view that sense observation is the sole determinant of factual meaning.[6] This cannot be shown to be true even in a single case of sense experience, argues Ewing. For how could the positivist ever know by sense experience that there is not a part of the meaning of a statement which he simply cannot verify? And the fact that we do not have any sense experience of the part in question proves nothing, since the whole question is whether there is something in

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6 A. C. Ewing, "Meaninglessness," Mind, XLV, 177, 353.

what we mean that transcends the empirical. But how could the positivist know by sense experience that there is not? At the outset, the verification principle must be an arbitrary limitation on the scope of human experience and a metaphysical assertion limiting reality to the empirical.

John Laird brings out essentially the same point in a variant argument. Any form of empiricism, Laird contends, is a metaphysic - a doctrine about ultimates, asserting that, for any human thinker, the only ultimates are contained in human empeiria.[7] Should the positivist deny he is asserting anything ultimate, he continues, there is still no way out. The positivist is caught between the horns of a dilemma: either he gives no reason for his insistence on sensory experience and his doctrine becomes purely arbitrary; or he gives a reason, which, on his own showing, is merely provisional and not ultimate. In that case, he would ostensibly be refraining from metaphysics out of policy, but would covertly be admitting that there are ultimate reasons for his position. Positivists are not anti-metaphysicians then, but only metaphysicians in disguise.

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7 John Laird, "Positivism, Empiricism and Metaphysics," Proceedings of the Aristotelian Society, XXXIX, 218.

Raphael Demos, finally, exposes the capricious nature of the positivist stand in a most emphatic way.[8] On the positivist's own principles, we recall, one does not challenge rules; they are arbitrary conventions valid in virtue of their form alone. Now the positivist is the close friend of modern science and makes it clear that this is what we mean by evidence in science. All well and good, says Demos, but we mean something more by evidence in metaphysics. If rules are purely arbitrary and if the metaphysician does not adopt the rules of the scientist - as the positivist deplores he does not - by what right does he criticize the metaphysician for not conforming to the rules of the scientist? Why should he question the rules of the metaphysician at all?

The same general objection may be applied to the positivist doctrine of meaning. On what basis does the positivist determine the meaning of meaning? His only criterion is the linguistic usage of science. But, once again, the linguistic usage in metaphysics is that meaning does not mean the same as in science. Nonetheless,

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8 Raphael Demos, "Aspects of Positivism," Philosophical and Phenomenological Research, XII, 3, March, 1953, 383-38 .

positivists criticize the metaphysician for not conforming to scientific usage, which, as Demos remarks, "is like scolding somebody for speaking French according to French grammar and contrary to English grammar."[9]

Clearly, the verification principle arbitrarily limits evidence and meaning, and rejects metaphysics because the principle itself involves a metaphysics. Indeed, the positivist cannot but help adopt some theory of the universe, some world view, to serve as the foundation stones of his views on science, history, psychology, ethics, theology and so on. The verification principle, however, in destroying metaphysics, necessarily destroyes itself. It destroys itself precisely because it itself is a metaphysic and because it includes in the realm of nonsense the philosophical principles on which its own conclusions depend.

But let us return to Professor Ayer's formulation of the verification principle. A statement has factual meaning, he argued, only if observations can be made which would be relevant to its truth or falsehood.[10] But has

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9 Ibid., 383. The same general argument is advanced by John Wisdom in "Metaphysics and Verification," Mind., XLVII, October, 1938, 452-498.

10 A. J. Ayer, Language, Truth and Logic, New York, 1951, 26.

any philosopher, to the most extreme sceptic or idealist, ever made a statement to the truth of which he did not think some observation or other was relevant? On the same point, Isaiah Berlin contends that relevance is not a precise logical category, realizing that "fantastic metaphysical systems" are free to claim that observations are relevant to their truth.[11]

To avoid this difficulty, Ayer attempts another formulation of the verification principle. He states it thus:

> ...it is the mark of a genuine proposition, not that it should be equivalent to an experimental proposition (one which records an actual or possible observation), or any finite number of experiential propositions, but simply that some experiential propositions can be deduced from it in conjunction with certain other premises without being deducible from those premises alone.[12]

It is to be noted, first of all, that this formulation involves some inferential process. But how can Ayer know from sense experience alone whether an inference is legitimate or not? Surely not from logic or mathematics, for these sciences are tautological, saying nothing at all about reality - and presumably Professor Ayer is saying something

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11 I. Berlin, "Verifiability in Principle," Proceedings of the Aristotelian Society, XXXIX, 233.

12 A. J. Ayer, Language, Truth and Logic, New York, 1951, 38-39.

of factual import. Since the principles of inference assuredly cannot be objects of empirical observation, how can Ayer determine the validity of any inferential process?

Perhaps a more embarrassing difficulty is that now the verification principle allows meaning to any statement whatsoever. Ayer himself admits this deficiency in the revised edition of Language, Truth and Logic, giving the example.

> ...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.[13]

To emend the difficulty by leaving out the part about other premises would exclude hypotheticals from the class of empirical propositions and, therefore, make nonsense of scientific theories. So Professor Ayer attempts to meet the difficulty by still another formulation of the verification principle. Though more lengthy and involved than the original formulation, it deserves quotation in full:

> ...a statement is directly verifiable if it is either itself an observation-statement, or is such that in

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13 Ibid., 11-12. I. Berlin pointed out this difficulty in "Verifiability in Principle," Proceedings of the Aristotelian Society, XXXIX, 234.

> conjunction with one or more observation-statements it entails at least one observation statement which is not deducible from these other premises alone; and... 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.[14]

A statement has factual meaning, then, if it is either directly or indirectly verifiable.

It is interesting to note what positivists themselves have to say about Ayer's revised criterion. According to Carl Hempel, this criterion, like Popper's criterion of complete falsifiability, allows factual significance to any conjunction whatever.[15] An explanation of terminology may be necessary to follow Hempel's reasoning. By S.N he means the expression obtained by connecting two sentences by the work and, for example, "all swans are white and the absolute is perfect." Take the conjunction S.N, where S satisfies Ayer's criterion, while N is a statement like "the absolute is perfect," which is to be rejected by the

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14 Ibid., 13.

15 C. Hempel, "Problems and Changes in the Empiricist Criterion of Meaning," Revue Internationale de Philosophie, IX, 1950, 50.

same criterion. Hempel points out, however, that

> ...whatever consequences can be deduced from S with the help of legitimate subsidiary hypotheses can also be deduced from S.N by means of the same subsidiary hypotheses, and as Ayer's new criterion is formulated essentially in terms of the deducibility of a certain type of consequence from the given sentence, it countenances S.N along with S.[16]

And Professor Church makes substantially the same point in his review of Ayer's second edition of Language, Truth and Logic.[17]

The verification principle becomes more and more suspect and Ayer himself hedges more and more. He tells us, you recall, that a statement is factually meaningful (non-analytic), if, and only if, it is either directly or indirectly verifiable. But this becomes shortly: "unless it (a factual statement) satisfied the principle of verification, it would not be capable of being understood in the sense in which either scientific or common-sense statements are habitually understood."[18] All this means, however, is that unless a statement has the sort of verification a scientific or common-sense statement has, it will

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16 Ibid.

17 A. Church, "Review of Language, Truth and Logic," Journal of Symbolic Logic, XIV, 1949, 52-53.

18 A. J. Ayer, Language, Truth and Logic, New York, 1951, 16.

not be a scientific or common-sense statement! Thus John Wisdom amusingly writes that by an analysis of the verification principle we arrive at its complementary platitude, that "every sort of statement has its own sort of meaning."[19]

Indeed, on Ayer's own admission, this supposedly self-evident criterion of meaning is not all it seemed to be. To quote Professor Ayer:

> In putting forward the principle of varification 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 or empirically verifiable.[20]

And again:

> 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 work "meaning" is commonly used. And if a statement satisfied such a criterion, there is, no doubt, some proper use of the work "understanding" in which it would be capable of being understood.[21]

The verification principle, consequently, is quite incapable of eliminating metephysics or anything else. And for this we have Ayer's own testimony:

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19 J. Wisdom, "Note on the New Edition of Professor Ayer's Language, Truth and Logic," Mind, LVII, October, 1948, 418.

20 A. J. Ayer, Language, Truth and Logic, New York, 1951, 15.

21 Ibid., 16.

> ...although I should still like to 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.[22]

A frank and honest admission, to be sure.

Though difficulties with the verification principle have multiplied, many positivists, including Hempel, Frank, Stace, Feigl and Church, believe satisfactory solutions may still be reached by a systematic use of the logistic method.[23] We ask the further question, then, whether, on positivist principles, a justification of this principle as a criterion of meaning is at all possible. Now the positivist might offer either a priori or empirical reasons to establish his position. But he is barred from giving any a priori reason because, on his own saying, the a priori is a free creation of the human mind incapable of justifying any theory whatsoever. And he cannot ever attempt to offer empirical reasons since an empirical inspection of meaning is a logical impossibility contradicting the very notion of "verifiability in principle." If the verification principle cannot be justified in either of these two ways, it must be considered a purely arbitrary assumption.

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22 Ibid.

23 Cf. page 36a, 36b.

Professor W. T. Stace has proposed what he considers to be a more basic criterion of meaning than Ayer's, which he states as follows:

> A sentence, in order to be significant, must assert or deny facts which are of a kind or class such that it is logically possible directly to observe some facts which are instances of that class or kind. And if a sentence purports to assert or deny facts which are of a class or kind such that it would be logically impossible directly to observe any instance of that class or kind, then the sentence is non-significant.[24]

Ayer, however, denies that the verification principle rests upon such a principle. He argues that while 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 verification principle, the converse of this does not hold.[25] Ayer rejects Stace's proposal as overly liberal.

Carl Hempel likewise rejects the principle of observable kinds. In his opinion, it suffers from the same deficiency as Ayer's first formulation of the verification principle, namely, that it would allow factual significance of any statement whatever.[26] In the same article Hempel

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24 W. T. Stace, "Positivism," Mind, LIII, 211, July, 1944, 218.

25 A. J. Ayer, Language, Truth and Logic, New York, 1951, 14.

26 Carl Hempel, "Problems and Changes in the Empiricist Criterion of Meaning," Revue Internationale de Philosophie, IX, 1950, 49-50.

advances a further substitute criterion called "translatability into an empiricist language." This criterion he does not fully develop, but even should it be found more satisfactory than previous criteria, it would still face the important and basic problem of justification.

To this line of reasoning the positivist might reply that his criterion is indeed arbitrary. He would explain that the criterion is an arbitrary convention about what he understands by meaning which, as such, requires no justification.[27] Very well. But if this be his stand, as Ewing remarks, the positivist is excused from having to prove his theory "only at the expense of admitting that there is no more reason for accepting it than there is for accepting any theory whatever."[28]

No, answers Professor Ayer, the verification principle is not supposed to be "entirely arbitrary" because unless a statement satisfied this criterion of meaning, it could not be understood as scientific and common-sense statements are. But all this means, as pointed out previously, is that unless a statement has the kind of verification a scientific or common-sense statement has, it will not be a scientific or common-sense statement. Granted, I say, but we are now a long way from the positivist's original announcement of the verification principle as the criterion of meaning, a universal criterion, capable of eliminating all metaphysics and of solving all outstanding philosophical disputes.

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27 C. Hempel, "Problems and Changes in the Empiricist Criterion of Meaning," Revue Internationale de Philosophie, IX, 1950, 60.

28 A. C. Ewing, "Meaninglessness," Mind, XLV, 351. Pap has argued in reply that the verification principle can be justified by introspection. (Elements of Analytic Philosophy, New York, 1949, 340.) But this is outside of the verification principle since such evidence cannot, even in principle, be verified.

There is a more fundamental reason, however, which closes all avenues of justification to the positivist. From the start, the positivist limits true knowledge (non-analytic) to the correlation of observational data. The human knower cannot rise above the level of sensation. By what possible means, then, can the validity of sense knowledge be established? Sensation, by nature, does not carry with it its own justification. Because the senses are limited and conditioned by matters, with sense knowledge alone man could never make a complete retour and reflect back on the nature and validity of his act and faculty of sense. On his premises, the positivist can never hope to give a rational account of his theory.

More fundamentally still, the positivist can find no justification of the verification principle without appealing to metaphysics - and that, a metaphysics of empiricism. To assert that the only true knowledge is reducible to sense is implicitly to assert that the only real is the sensible. This metaphysical assertion the positivist cannot and never attempts to prove. It is his initial act of faith.

Future attempts to formulate a verification principle, even should they be successful to the extent of eliminating the logical deficiencies of previous formulations, will all necessarily labor under this basic difficulty of justification. Though the positivist problem with justification should alone call into question the fundamental tenets of positivism, we shall consider further difficulties in the following chapter.

CHAPTER IV

THE BASIC PROPOSITION

In close and essential connection with the verification principle is the question of "basic propositions." A thorough examination of positivism demands an analysis of their meaning and function within the positivist scheme.

Basic propositions may be described as those which can be immediately compared with reality, i.e., with the data of sense experience. They are supposed, therefore, to designate the immediately given, the content of one's present sense experience.[1] Examples of such propositions would be of the type: "It seems to me I feel cold;" "It looks to me that the grass is green."

Now the importance of basic propositions derives from our consideration of the verification principle. We noted there the positivist claim that all factual propositions refer ultimately to our sense-contents. Consequently, all propositions which are not themselves basic necessarily become "truth-functions" of basic propositions. All factual propositions, furthermore, must be reducible to propositions about the immediately given. Otherwise, they are meaningless. Here then

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1 A. J. Ayer, "Basic Propositions," Philosophical Analysis, ed. Max Black, Ithaca, 1950, 67. Victor Kraft, The Vienna Circle, New York, 1953, 117.

lies the importance of the basic proposition: within the positivist system it becomes the ultimate criterion of meaning and truth.

Since the early meetings of the Vienna Circle positivists have discussed the question of basic propositions under differing terminology. Wittgenstein distinguished between "atomic" and "molecular" propositions in referring to basic and non-basic propositions. Mach used the German protokolsatz to describe a proposition involving immediate sense-data and thus we have the expression "protocol" or "elementary" proposition. Finally, the term "ostensive" and more recently "basic" proposition has been popularized by Ayer. Thus there is general agreement among positivists that there is a class of statements which are simpler and more easily verifiable than other statements.

Agreement, however, stops here. Basic propositions are supposed to designate the immediately given, but, in the positivist circle, just what propositions satisfy the requirement is itself a matter of dispute. Early positivists regarded the "given" as consisting in sense and feeling qualities. But for Carnap the given consisted in total experiences and relations between them while Neurath considered physical situations as the initial data.[2] What remains in

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2 Victor Kraft, The Vienna Circle, New York, 1953, 118.

dispute and doubt for the empirical positivits, we note, are the very foundations of empirical knowledge.

A second point of dispute, and one of greater moment to positivists, concerns the certitude of these basic propositions. The question divides positivists into two sharply defined camps, camps which logically debate as well the issue of strong or weak verifiability as a criterion of meaning. The rightists who follow Wittgenstein and Schlick maintain that basic propositions are absolutely certain, while the leftists following Carnap and Ayer argue that they have no more certitude than any other factual statement. The question in positivist phraseology is the "incorrigibility" versus the "corrigibility" of basic propositions.

First of all, let us trace the reasons offered for the two contradictory opinions. Wittgenstein and his camp argue that basic propositions, in as much as they directly record an immediate experience, are indubitable and incapable of being refuted by any further experience.[3] The underlying reason why some positivists claim certitude for one class of propositions seems in order to establish a basis from which other propositions might derive their validity. These men

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3 Carl Hempel, "On the Logical Positivists Theory of Truth," Analysis, II, 4, Jan., 1935, 192.

apparently realized the completely arbitrary and hypothetical character all propositions would incur unless certitude, in one area at least, was claimed as a starting point. For if certain premises can lead to certain conclusions, mere hypotheses can only lead to hypothetical conclusions. Wittgenstein and other positivists saw the danger of a house built on sand, which a philosophy would necessarily be if lacking solid foundations, and hence they maintained the basic proposition as absolutely certain. Their point would appear a good one.

Implicity, at any rate, this group of positivists had adopted a correspondence theory of truth. Their claim was that basic propositions could be immediately compared with reality and, hence, were indubitable. Another group, however, led by Carnap and Neurath, denied that we can ever compare propositions with reality.[4] As a consequence, this second group developed what has come to be called a coherence or consistency theory of truth.

This "coherence" is simply the agreement of a proposition with other accepted propositions. Thus a proposition would be "true" within a given system if it was consistent with the rest of the system. What is also true, however, is that there may be many other systems in which the proposition in

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4 Victor Kraft, The Vienna Circle, New York, 1953, 118-119.

question is "false." On their own empirical premises positivists realized that coherence could never be ultimately established or that any one system could disprove another. With the methods of scientific procedure in mind, Carnap and his followers concluded that empirical knowledge can never yield truth but only probability and, secondly, that no proposition incorporated in a system is exempt from possible elimination in the future.[5] For this reason they logically claimed that basic propositi ns were just as hypothetical and corrigible as any other empirical proposition.

Thus for this second group of positivists, basic propositions, like every other, are at the end accepted or rejected by a decision. The arbitrary and purely convential character of positivist tenets could not be more apparent. With such a stand, positivists themselves were confronted with a new question of equal importance. If basic propositions are denied any certitude whatever and thus become corrigible, how can one determine under what conditions a basic proposition should be abandoned and under what conditions it must be accepted? This remains their problem. In stating the reasons for Ayer's rejection of the certitude of basic propositions, we shall find one attempt at a solution.

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5 Felix Kaufmann, "Verification, Meaning, and Truth," Philosophy and Phenomenological Research, IV, 1943-1944, 283.

First of all, Professor Ayer argues, no proposition can be purely ostensive or basic, for this would imply that "there could be a sentence which consisted of purely demonstrative symbols and was at the same time intelligible."[6] "This here and now" assuredly does not make any sense. Sentences of purely demonstrative symbols, then, would not express genuine propositions and hence could not even be considered as the starting-point of a science. What Ayer realizes--and this repeats Kant's comment regarding the categories--is that one cannot in language point to an object without in some way describing it. So if a proposition is to be genuine, one cannot merely name a situation; one must say something about it. But in describing a situation, Ayer remarks, "one is not merely 'registering' a sense-content, one is classifying it in some way or other, and this means going beyond what is immediately given."[7] (Italics mine.) As noted previously, all class concepts for the positivist are free and arbitrary constructions of the mind and, as such, not part of the data of experience. This arbitrary and constructural nature of the class, consequently, prevents a positivist's claim for certitude

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6 A. J. Ayer, Language, Truth and Logic, New York, 1951, 91.

7 Ibid.

in any proposition which involves classification. Since, as Ayer recognizes, classification is necessary for any intelligible proposition, he logically concluded that all propositions are but hypotheses and hence never certain.

Within the positivist scheme, Ayer's point is well-taken. Though he qualifies the above argument in the new introduction of Language, Truth and Logic, his position remains substantially the same. He would now admit that there is a class of propositions which may be called "incorrigible." "For if one intends to do no more than merely record what is experienced without relating it to anything else," writes Ayer, "it is not possible to be factually mistaken."[8] But this makes little difference, since, as Ayer goes on to say, "the mere recording of one's present experience does not serve to convey any information either to any other person or indeed to oneself."[9] Intelligibility necessitates classification and classification for Ayer necessarily excludes certitude.

That Professor Ayer still upholds the hypothetical character of all factual propositions is further attested to in one of his recent essays. In responding to the question, "Is anything certain?" Ayer contends that the answer depends on the meaning rules of a language. But as to whether these rules

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8 Ibid., 10.

9 Ibid.

can guarantee the truth or falsity of a given statement, Ayer's thought is most clear: "In neither case is doubt excluded."[10]

With all possibility of certitude excluded, what justification does Ayer offer for the hypothetical character of the positivist structure? What criterion does he advance to test the validity of factual propositions which, we recall, are all hypotheses? In the first place, Ayer states, hypotheses are "rules which govern our expectation of future experience."[11] They enable us to make successful predictions of future experience and so are necessary for human life. The criterion, therefore, by which to test the validity of factual propositions is whether or not they fulfill the function they are designed to fulfill, namely, to anticipate experience.[12] So if an observation conforms to our expectations, the probability of our original hypothesis is increased; but if the observation is contrary, the probability is decreased. In neither case, however, can there be a question of absolute truth or falsity because future observations may always discredit our finding. By what criterion, then, does one decide to accept or reject a proposition, be it basic or otherwise? Ayer's answer is

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10 A. J. Ayer, "Basic Propositions," Philosophical Analysis, ed., Max Black, Ithaca, 1950, 74.

11 A. J. Ayer, Language, Truth and Logic, New York, 1951, 97.

12 Ibid., 99.

simple: by its efficiency in predicting future experience. (Note the similarity between this explanation and the procedure of modern science.)

The above line of reasoning is a summary presentation of Professor Ayer's view. More important, however, is the justification offered for his criterion of validity. Now the essential feature in this matter of prediction, Ayer avows, is the use of past experience as a guide to the future.[13] This, of course, rests on the assumption that the past is a reliable guide to the future, or, to put it in other words, that future experience will be inaccordance with past. Ayer openly admits this to be an assumption,[14] and states further that "there is no sense in asking for a theoretical justification of this policy."[15] Indeed, any attempt at justification would involve one in a pseudo-problem, since, on positivist premises, justification is not even theoretically possible.

So, one might say, after all this, we are back where we started. We are offered not even the hope of a rational justification of the entire positivist structure. Hypothetical remains the indelible character of positivism. That such a

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13 Ibid., 97.

14 Ibid., 47.

15 Ibid., 98.

final answer could ever satisfy the human spirit's inner drive for truth, we need not answer. It is simple destructive of intellectual life. Man is naturally curious; he "wonders," to use Plato's term. This reductively sceptical stand of the positivist cannot satisfy man's dynamic yearning for a rational understanding of things.

In all fairness to Professor Ayer, however, a further comment is necessary. Sensing the arbitrariness of his criterion of validity, Ayer forsees the obvious question: is it not irrational then to expect future experience to conform to past? No, he answers, for this is a probable hypothesis. But what can probability mean in this context? Not any intrinsic property of the proposition, writes Ayer, for to say that an observation increases the probability of an hypothesis means only that "the observation increases the degree of confidence with which it is rational to entertain the hypothesis."[16] In short, probability means a rational belief. It is here that we strike at the heart of positivism; here its purpose and nature become most lucid.

Rational belief, that is the crux of the question. And this, states Ayer, is a belief which is arrived at by the methods we now consider reliable.[17] What methods? "There is

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16 Ibid., 101.

17 Ibid., 100.

no absolute standard of rationality,....We trust the methods of contemporary science because they have been successful in practice."[18] Such is Ayer's ultimate answer and positivism can be viewed in its true colors as simply the handmaid of modern science.

This appeal to science, we recall, is basically the same as Ayer's final attempt to justify his criterion of meaning. Unless a statement satisfied the principle of verifiability, he wrote, "it would not be capable of being understood in the sense in which scientific hypotheses or common-sense statements are habitually understood."[19] This is something of an anomaly, philosophy appealing to science for a justification of its tenets. Success in practice modern science has enjoyed. While this justifies to some extent the scientist's use of scientific methods, it hardly justifies the positivist demand for the adoption of scientific procedure in philosophy and in all other disciplines. Many scientists, furthermore, are not content with the mere pragmatic justification of science. Men like Eddington, Jeans, Cassirer, Burtt, Whitehead, Northrop and others engaged in metaphysical

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18 Ibid.

19 Ibid. 16.

investigation because there was a felt need for it. The practical success of science cannot long satisfy man's desire for a rational explanation of things and certainly it cannot justify the philosophical and basically metaphysical doctrines of positivism.

Thus, in summary, we see the dilemma facing positivists over the question of basic propositions. Either they claim certitude for basic propositions and so establish some foundation for their conclusions or they deny this certitude and so reduce all factual propositions to empirical hypotheses. In the former case, the arguments of Ayer concerning classification show the claim for certitude to be unwarranted, thereby bringing to light the hypothetical and arbitrary nature of positivism. In the latter case, the open exclusion of all certitude serves only to bring this nature into clearer focus. Neither alternative is satisfactory and, with the positivist notion of class concepts as pure constructions of the mind, there is no possibility of a third choice.

On this point, then, it appears that positivists will be forced to make a further and more thorough analysis of the data of consciousness. This, in turn, will compel them to widen the scope of evidence so as to admit a non-sensory component of experience, the class or universal. Such

an admission would necessitate a radical revision of the positivist doctrine of the given as sense data alone and of experience as sensation alone. A revision of this nature, finally, would affect that most essential feature of positivism, the verification principle, acting as a wedge driven into it so as to shatter it.

CHAPTER V

POSITIVIST ETHICS

In considering both the question of justification of the verification principle (Chap. III) and the question of basic propositions (Chap. IV), we have focused upon the arbitrary character of positivist doctrine. Positivists themselves are not altogether unaware of this failing and it would appear the underlying reason for their recent concern with metaphysics, understood in a broad sense.[1]

Other factors also are reponsible for the new positivist accent on "first philosophy." First, there appears to be a growing awareness among analysts that existential propositions possess, after all, a unique character which defies purely verbal analysis and which, consequently, can be handled only by a science of the real.[2] Secondly, the original positivist attitude of regarding propositions as independent entities is gradually broadening to admit a consideration of the mental act of judgment which finds expression in a proposition. In any case, though positivists have not

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1 Cf. Gustav Bergmann, The Metaphysics of Logical Positivism, New York, 1954; Morris Lazerowitz, The Structure of Metaphysics, New York, 1955.

2 A. J. Ayer, "On What There Is," Philosophical Essays, New York, 1954, 215-230.

formally embraced a metaphysic, they have at least tempered their denunciations of that science and are cautiously and slowly weighing its value and place.

A third factor, and a strong extrinsic impetus to positivists' second look at metaphysics, is the amount of criticism provoked by the emotive theory of values. This is the ethical theory of the positivists and a logical outcome of his fundamental tenet, the verification principle. For if only those propositions which can be verified by sense observation are meaningful, then statements implying the existence of moral standards, of the intrinsic worth of certain ways of life and courses of action become literally non-sensical. Not that the positivist completely disregards moral judgments; he looks upon such judgments simply as an expression of a speaker's feelings which, as such, cannot be said to be either true or false.

To illustrate this point, Professor Ayer makes use of several concrete examples. In the statement, "You acted wrongly in stealing that money," the only factual content, writes Ayer, is that you stole that money.[3] By calling this action "wrong"

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[3] A. J. Ayer, Language, Truth and Logic, New York, 1951, 107.

one is merely showing that his statement is accompanied by certain feelings of disapproval. Should one generalize the original statement and say, "Stealing is wrong," a sentence is produced which has no factual meaning at all.[4] Consequently, there is absolutely nothing therein which can be said to be true or false. Using the further example, "It is your duty to tell the truth," Ayer argues that this can only be viewed as an expression of a particular kind of moral feeling about truthfulness and/or the expression of the command, "Tell the truth."[5] To ask whether telling the truth is right or wrong is just positing a meaningless question.

Thus in concrete fashion we have the emotive theory of values. It is a simple matter now to generalize and show the impossibility of finding any criterion to determine the validity of ethical judgments. Ayer does so as follows:

> It is not because they (ethical judgments) have an "absolute" validity which is mysteriously independent of ordinary sense-experience, but because they have no objective validity whatsoever. If a sentence makes no statement at all, there is obviously no sense in asking whether what it says is either true or false. And we have seen that sentences which simply express moral

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4 Ibid.

5 Ibid., 108.

> judgments do not say anything. They are pure expressions of feeling and as such do not come under the category of truth or falsehood. They are unverifiable for the same reason as a cry of pain or a word of command is unverifiable--because they do not express genuine propositions.[6]

Clarity Professor Ayer never lacks.

By the razor of verifiability, ethics goes the way of metaphysics. It is only logical that the two should share the same rejection. For if metaphysics is judged meaningless because it allows trans-empirical realities, ethics must receive the same judgment. Precisely because values are without reality, morals, in any real sense, are without meaning. This can be the only conclusion for the consistent positivist. In destroying metaphysics, he necessarily destroys ethics. For if there is no meaning in things, at least none that philosophy can discover, then it is impossible to assign an end to human existence; if the world that we know by our senses is the only real, then questions concerning the nature and destiny of man simply cannot be discussed. Notions of God, immortality and freedom are metaphysical and, therefore, meaningless.[7]

The logical results of the positivist destruction of ethics are only too obvious. For as C.E.M. Joad writes:

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6 Ibid., 108-109.

7 A. J. Ayer, Language, Truth and Logic, New York, 1951, 115-117. A. Pap, Elements of Analytic Philosophy, New York, 1949, 325.

> Sap the foundations of a rational belief in God, in truth in goodness and in beauty, as Logical Positivism cannot help but do, confine meaningful assertions to matters of empirical fact and you sow the seeds of intolerance and dogmatism, as weeds spring up where a man cuts down a healthy crop and puts nothing in its place.[8]

Indeed, if there is no objective right and wrong, if moral judgments are mere expressions of emotions, why disapprove of Nazi concentration camp practices, of Communist torture and brain-washing, why execute the murderer, why speak of the rights and obligations of labor and management, why uphold the civil liberties of negroes? Should someone contradict my condemnation of theft, obscene literature or narcotic peddling, we really could have no argument. If both of us are merely expressing our moral sentiments, "there is plainly no sense in asking which one of us is right. For neither of us is asserting a genuine proposition."[9] All phases of human activity--from private and family life, to the fields of business, education, national and international politics--must necessarily suffer the repercussions of the positivist "science" of ethics.

The moral relativism implicit in the emotive theory, however, is not something new in the history of thought. From

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8 C. E. M. Joad, A Critique of Logical Positivism, Chicago, 1950, 152.

9 A. J. Ayer, Language, Truth and Logic, New York, 1951, 108.

the time of Protagoras it has been constantly reviewed and defended. What is new, as John Wild remarks, is "the intellectual arrogance with which this time-worn point of view is dogmatically asserted with no rational defense, except for an appeal to the authority of modern science, and with no careful consideration of opposed position."[10] But the reaction to the relativism of positivists is not altogether different from the opposition Protagoras and the Sophists faced in the persons of Socrates and Plato. The latter two perceived a connection between the crisis of Athens and the moral anarchy that the relativistic theories of the Sophists brought on. This appears the prime reason for their philosophical attempt to provide foundation for objective goodness, justice, beauty, etc.

In a similar crisis of the present age, positivists, like the Sophists before them, are being challenged. Modern man finds himself in a world alive with anxiety, brought on by the shock of two world wars and their aftermath and by the painful knowledge that the great powers possess the awesome tools of genocide. The threat of nothingness caused by the atomic bomb is the sword of Damocles hanging over men today.

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10 John Wild, The Challenge of Existentialism, Indiana, 1955, 24.

Such a crisis has awakened man's concern and interest in ethics and theology. Moral principles, natural and divine, have come to be viewed, not merely as medieval superstitions, but essential tools in the task of sheer survival.

Indications of this new attitude have come from many and varied sources. We witness the popularity of Bishop Sheen, of Niebuhr and Tillich; we hear the approval of Life's 1955 Christmas issue on Christianity; we read Time's report on the revival of interest in religion on campuses across the United States;[11] we note President Nathan Pusey of Harvard stating that "it is almost universally acknowledged that the study of religion rightfully belongs (within universities), and this is so because religion's concerns make valid claims upon all of us."[12]

In contrast, in the decades up to World War II, it was science that held the attention and hopes of man. With the sciences, notably physics, pointing to so many achievements, it is not strange that science became man's golden calf. Today, the situation is different. The world faces a crisis which is centered in the predicament of modern man whose power over

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11 "Education," Time, November 21, 1955, 60-62.

12 "Current Comment," America, February 25, 1956, 575.

nature threatens to unleash demonic forces he has not mastered in himself or his society. Moral restraint of this power will be the only successful means of averting a 20th century cataclysm. Thinking men have thus been forced to re-evaluate the scope of science and are coming to the realization that science cannot provide for all man's needs and answer all his problems. While useful and accurate in many areas, science can never provide for the spiritual needs of man; it can never provide the moral restraint necessary to prevent science itself from destroying its human creators.

With man's hope and trust in science alone diminishing, a lack of genuine interest in the philosophy of positivism is bound to follow. As stated previously, positivism, with its appeal to science for justification and for a standard of rationality, is little more than the handmaid of science. This is necessarily the case, for the positivist claim is that all the data of experience belong to the province of one of the restricted sciences. Thus there are no philosophical data. All that remains for philosophy, Professor Wild remarks, is "logic and linguistic analysis, a study of the tools used by science in making its empirical investigations and in stating its results."[13]

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13 John Wild, The Challenge of Existentialism, Indiana, 1955, 9.

A philosophy of this nature can never provide the ethical code necessary in today's crisis. Men are now realizing the necessity of a philosophy which offers a solid foundation for knowledge of God and His law, one that offers some objective norm of morality which is immutable and universal, one that upholds that certain actions are intrinsically evil, that a man cannot act contrary to his conscience, that the good will be rewarded and the evil punished in life after death. But all this supposes a metaphysic and so positivism cannot even hope to satisfy such demands. These lacunae in positivism help explain the success of the modern existentialist movement. As Kierkegaard in his day rebelled against the reigning Hegelian philosophy, so today existentialism is challenging the prevailing positivist scheme for its inability to meet the problems and needs of the day.

Positivists themselves are not unaware of serious deficiencies in their explanation of ethical values. In his most recent collection of essays, Professor Ayer avows the emotive theory of values in its original form to be an over-simplification.[14] He qualifies in many ways his previous

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14 A. J. Ayer, Philosophical Essays, New York, 1954, 238.

statements and takes pains to deny that morals are trivial or unimportant,[15] that nothing is good or bad, right or wrong,[16] and that anything that anybody thinks right *is* right.[17] With regard to freedom of the will, furthermore, Ayer will no longer assert that it is a mere illusion, for "to say that my behavior can be predicted is not to say that I am acting under constraint."[18]

Thus, despite any notable changes in doctrine, as Ayer and other positivists write on, one thing becomes apparent: the unqualified positivism of a decade ago is no more.

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15 *Ibid.*, 245.

16 *Ibid.*, 246.

17 *Ibid.*, 247.

18 *Ibid.*, 264.

CHAPTER VI

SUMMARY AND RE-EVALUATION

In this final evaluation of logical positivism, we shall first indicate the main outlines of the arguments traced in the preceeding chapters. In this way the present status of positivism will be brought into clearer focus and evaluation will be facilitated.

In first place, let us reconsider the verification principle itself. In its simplest form this has been stated in the following way: the meaning of a statement is the method of its verification. From Moritz Schlick and Karl Popper through Alfred Ayer, we have seen the principle grow more and more complex in an effort to avoid difficulties impossible of solution.[1] Even in his most recent attempt at re-formulation Professor Ayer is faced with a sharply pronged dilemma: either the verification criterion proves too inclusive, allowing factual significance to any statement whatsoever, or too exclusive, denying meaning to hypothetical propositions and thus making nonsense of scientific theories.[2] Ayer has elected

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1 Cf. Chapters II and III.

2 A. J. Ayer, Language, Truth and Logic, New York, 1951, 11-13; Chapter III, 27-28.

the former course but other positivists have not gone along with him.[3]

Since the verification principle as a general criterion of meaning is the very core of positivism, this difficulty is indeed an embarrassing one. If the verification principle itself cannot be formulated with sufficient logical accuracy, it cannot begin to act as a method to settle perennial philosophical disputes and positivism fails in the task it has set for itself.

Justification of the verification principle is a second important issue for positivists, and one that reveals the implicit premises on which positivism stands. Within the positivist context, either a priori or empirical reasons might be offered in justification of the verification principle. Neither, however, is possible since the a priori is a free and arbitrary construction of the mind and since meaning is not even in principle capable of empirical observation. Professor Ayer would still defend the verification principle though, because unless a statement satisfied that criterion of meaning, "it would not be capable of being understood in the sense in which scientific or common-sense statements are habitually

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3 Cf. Chapter III, 35-36.

understood."[4] But this only means it would not be a scientific or common-sense statement and does not establish the verification principle as a universal criterion of meaning.

Ayer has appealed to scientific usage in another context. Because he claims that basic propositions like other factual propositions are hypothetical and hence never certain, he is forced to find a criterion for the validity of factual propositions other than these basic propositions.[5] The criterion offered is whether or not a proposition fulfills the function it is designed to fulfill, that is, to anticipate future experience.[6] Why is this a valid criterion? Ayer's answer is clear: because this criterion has been arrived at by the methods we now consider reliable and "we trust the methods of contemporary science because they have been successful in practice."[7]

Ayer's two appeals to modern science testify to the positivists' implicit faith in an empirical view of the world. They bring to light that hidden and basically metaphysical

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4 A. J. Ayer, Language, Truth and Logic, New York, 1951, 16.

5 Cf. Chapter IV, 46-48.

6 A. J. Ayer, Language, Truth and Logic, New York, 1951, 99.

7 Ibid., 100.

aspect of positivism, an empiricist metaphysics asserting that the only real is the sensible. Positivism's notable claim of destroying metaphysics, then, is accomplished only by a metaphysics. Thereby it destroys itself, rejecting as nonsense the philosophical premises on which its own conclusions depend.

A third difficulty facing positivists revolves about the question of basic propositions, those elemental building blocks of empirical knowledge. Are such propositions certain or not? Against Wittgenstein and other positivists holding for certitude, Professor Ayer has argued that one cannot in language point to any object without in some way describing it.[8] In other words, for an intelligible proposition classification is always necessary. If this be the case, Ayer realizes, then even basic propositions cannot be certain since all class notions for positivists are but free constructs of the mind and, as such, beyond the data of experience. Thus basic propositions can provide neither justification nor certitude for positivist conclusions and the very foundations of empirical knowledge remain in doubt.

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8 Ibid., 91.

A fourth and pressing difficulty facing positivists springs from their ethical theory, the emotive theory of values. Since the verification criterion admits as meaningful only those sentences which can be verified by sense observation, statements implying moral values cannot be said to be factually significant. For the positivist, such statements are merely expressions of one's feelings or emotions.[9] By the razor of verifiability positivists destroy metaphysics; so in like manner must they destroy any genuine ethics. For if values are without reality, morals, in any real sense, are without meaning. Such an ethical theory cannot adequately account for value-judgments and cannot provide the moral code necessary today.

Thus four major difficulties face positivists, difficulties which must be solved if positivism, as a philosophy of the real, is to survive. By intrinsic examination and purely logical analysis,--eminently positivist methods--it appears that positivism fails to do what it purported to do, that is, to formulate with logical accuracy a criterion of meaning and thereby to eliminate metaphysics and solve perennial philosophical disputes, to offer some justification

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9 Ibid., 108.

of this criterion, to explain basic propositions, to account for value-judgments.

Whether or not positivists can solve these difficulties by mere logic and linguistic analysis is a question we should like to ask at this point. With regard to the first difficulty, one reason why the verification criterion defies satisfactory formulation would seem that it attempts too much. All transempirical statements of existential import, and specifically metaphysical statements, cannot be denied meaning because at least some of them are meaningful. The human spirit cannot dismiss all questions concerning being, man or God simply as meaningless. And in evidence that positivists may now recognize this, we have Professor Ayer saying,

> ...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.[10]

Furthermore, as regards destroying metaphysics by one stroke of the verification principle, Ayer now admits that "for the effective elimination of metaphysics it (the verification principle) needs to be supported by detailed analysis of particular metaphysical arguments."[11] Neither he nor any other

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10 Ibid., 15.

11 Ibid., 16.

logical positivist, has given us any effective detailed analysis of this kind.

In examining the positivist's problem over justification of the verification criterion, a similar though implicit direction toward metaphysics can be noted. In Ayer's double offer of scientific usage as justification a covered, perhaps unconscious, appeal is made to a metaphysics of empiricism. But without proof and substantiation of this empirical world view, on the hypothesis that such is possible, positivist tenets can remain but arbitrary and hypothetical.

Should positivists explicitly uphold an empiricist metaphysics, other difficulties would still remain. In considering the question of basic propositions we noted that, within the positivist framework, these elemental propositions can never be certain. This is but a logical result of the positivist's notion of the class or universal as a pure construct of the mind with absolutely no foundation in experience. For if intelligible propositions demand classification--and here positivists concur with Kant's cogent analysis--then in such propositions, basic or otherwise, all certitude is excluded and positivism appears as a completely unverified philosophy. To settle this difficulty, a metaphysics of empiricism will not suffice. For, as Professor Ayer realizes, class notions for the empiricist are necessarily beyond the

data of experience.[12] Only the recognition of a non-sensory elements of experience, the class or universal itself, can provide an adequate solution. A solution of this nature, however, would mean a denial of the empiricist doctrine of the given as sense-data alone and of experience as sensation alone. In that event positivists would assuredly find themselves in the area of a broader and more acceptable metaphysics. Though a fundamental revision of this type is still in the realm of possibility, the problem at least and the impossibility of an empiricist solution seems manifest to positivists.

A second difficulty which positivists cannot handle by adopting an empiricist metaphysics centers about ethical matters. In the positivist scheme, we recall, all moral judgments are necessarily but expressions of feeling completely devoid of factual content.[13] When men have come to the realization, however, that an objective and universal standard of morality is not merely a matter of icing-on-the-cake but an essential tool in the task of self-preservation--as have men in the atomic age--this relativistic theory of positivists is far from adequate. A broader world-view, a metaphysics

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12 Ibid., 91.

13 Ibid., 108.

that recognizes as meaningful questions about God, the soul, moral good or evil, is required to answer the needs and problems of men today.

Professor Ayer is not unaware of serious deficiencies in positivist ethical doctrine. Recently he has explicity denied certain implications of the emotive theory, namely that nothing is good or bad, right or wrong,[14] and that anything that anybody thinks right is right.[15] Although Ayer may sincerely entertain such views, the question is whether or not they can be substantiated within the positivist context. With but an empiricist metaphysics as backing the answer would be a decided no. Thus again it is evident that, while positivists have avowed no formal metaphysics, they are forced at least to look in that general direction.

Indeed, this last difficulty may well be the most serious facing positivists today. For from the history of thought it would seem that a philosophical movement is never really brought to a halt or radical change of course simply by the arguments and refutations of other philosophers. What would appear the primary factor in any such event is a philosophy's own inadequacy in meeting the problems and needs of the day. This serious failing strikes the modern movement of

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14 A. J. Ayer, Philosophical Essays, New York, 1954, 246

15 Ibid., 247.

positivism with most obvious force in its account of moral values. It will perhaps fall into disregard more rapidly on this account than by reason of any detailed refutation.

Let us argue this point further. Positivism, we noted earlier, has restricted philosophy to mere logic and analysis.[16] What is needed today, however, is a philosophy, a metaphysical scheme, which can offer an integral and coherent view of reality, not a view of logical apparatus. With his disregard of the real and emphasis on logic the positivist is "like a man who becomes so interested in the cracks and spots of dust on his glasses that he loses all interest in what he may actually see through them."[17] Today the metaphysician, not the pure logician, will capture the interest of men.

Thus in reviewing possible solutions to the four major difficulties facing positivists, we find satisfactory answers all pointing in one direction, and that in the direction of metaphysics. Formulation and justification of the verification principle demands a metaphysics, albeit a metaphysic of empiricism; the question of basic propositions and value

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16 Cf. Chapter I, 10; Chapter V, 59.

17 John Wild, The Challenge of Existentialism, Indiana, 1955, 10.

judgments require a metaphysic of wider scope. Not that metaphysical arguments in themselves have convinced positivists that certain doctrinal changes are necessary. After all, such arguments are meaningless in their eyes. Rather, the point of this analysis was to show that positivism has failed in its initial purpose, incapable, as it is, of solving the difficulties outlined above. This fatal weakness is only too apparent to positivists themselves. Recognition of this weakness seems to have cleared the air behind positivists' closed doors, forcing them to take a second and clearer look at this matter of metaphysics.

Indications of growing interest and thought in positivist circles concerning "first philosophy" have already been mentioned throughout this analysis. Among recent signs of the same trend we note the publication of Gustav Bergmann's The Metaphysics of Logical Positivism and Morris Lazerowitz's The Structure of Metaphysics--strange titles indeed from the positivist's pen.[18] While holding that metaphysical statements are neither a priori nor empirical, Lazerowitz does not consider them non-sensical. He terms them linguistic innovations to satisfy some unconscious need or desire. Alfred Ayer, we

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18 Gustav Bergman, The Metaphysics of Logical Positivism, New York, 1954; Morris Lazerowitz, The Structure of Metaphysics, New York, 1955.

have seen, has given evidence of the same concern. In his recent collection of essays, furthermore, he seems aware of the unique character of existential propositions, a character which prevents purely verbal analysis and which indicates that such propositions can be handled only by a science dealing with the real as such.[19] Thus it would seem a legitimate conclusion that, while positivists have not formally adopted a metaphysics, they are at least making serious and obvious advances in that direction.

From even a cursory glance at recent positivist writings, it is clear that the unqualified and self-satisfied positivism of a decade ago is no more. There are still some uncompromising representatives of the original movement left in the field, brilliant and industrious men like Carnap, Hempel and Frank, but among the younger generation there are hardly any who would carry on the "apostolic mission" of the Vienna Circle. It appears now that the original arrogance and sweeping claims of positivists sprang, not from any intrinsic strength of doctrine clearly recognized as such, but rather from a desire to make an initial and striking impact in philosophical circles. Positivists of the younger generation, however, perceive weak points in the positivist structure

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19 A. J. Ayer, "On What There Is," Philosophical Essays, New York, 1954, 215-230.

and, consequently, have tempered their denunciations of contrary opinions and qualified many tenets of the early positivist school.

Before concluding, it is only fitting that we give positivism its due. With its emphasis on mere logic and linguistic analysis, positivism has caused considerable havoc in the philosophical enterprise.[20] But there is also a positive side. Positivist insistence on accurate, clear and precise statements has certainly shown many a philosophical proposition to be truly meaningless and has forced all philosophers to avoid ambiguity and logical inaccuracy in putting forth their opinions. Indeed, practically everyone today recognizes the value of formal logic for philosophy. Thus positivists have lost their initial monopoly in these fields; what was worthwhile in their system became common good.

To summarize this final analysis, then, we have seen that four major difficulties face positivists: formulation and justification of the verification principle, the question of basic propositions and of value-judgments. In view of positivists' inability to solve these difficulties by purely

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20 Cf. Chapter I, 10; Chapter V, 59.

logical means they have been forced to rethink the whole matter of metaphysics. At present they no longer dismiss metaphysics at a stroke of the verification principle; they would seem to view it now, not as meaningless, but as non-scientific--which is to say that it is not of the nature of contemporary science.[21] This and other indications, finally, lead to the conclusion that positivists, albeit slowly and cautiously, are approaching the area of an acceptable metaphysics.

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21 A. J. Ayer, Language, Truth and Logic, New York, 1951, 16.

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The thesis submitted by Mr. John Aloysius Dinneen, S.J., has been read and approved by three members of the Department of Philosophy.

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with reference to content, form, and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

March 12, 1957
Date

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