

T
597

THE PROBLEM OF THE SYNTHETIC A PRIORI

By

DEMETRIUS JOHN HADGPOULOS

Submitted in partial fulfillment for the
requirements of the Degree of Master of Arts
in the Philosophy Department of the
American University of Beirut

Beirut, Lebanon

1963

THE PROBLEM OF THE SYNTHETIC A PRIORI--HADGPOULOS

TABLE OF CONTENTS

	Page
INTRODUCTION	1
Chapter	
I. KANT: THERE ARE SYNTHETIC A PRIORI PROPOSITIONS .	10
II. LOGICAL POSITIVISTS: THERE ARE NO SYNTHETIC A PRIORI PROPOSITIONS	39
III. PRAGMATIC ANALYSTS: THE QUESTION OF WHETHER THERE ARE SYNTHETIC A PRIORI PROPOSITIONS DOES NOT ARISE	105
CONCLUDING REMARKS	132
BIBLIOGRAPHY	138

INTRODUCTION

In the first half of the eighteenth century, metaphysics, that is, the "science which investigates being as being, and the attributes which belong to it in virtue of its own nature,"¹ received a severe attack from David Hume.

Metaphysical knowledge, according to Aristotle, is knowledge of "the first principles and the highest causes"² of being as such. It is not concerned, for example, with giving an account of change, as physics does, but it is concerned with existence in general, it is concerned with that which is, as existent.

It is an ancient belief, which was developed from pre-philosophical endeavours to understand the world, that knowledge is of two kinds. There is a kind of perfect knowledge possessed rather by the gods, a superior knowledge which in philosophical times was thought to be knowledge of the first principles of being as being or, to put it in another way, "knowledge of the ultimate reasons why things are as they are."³ The other kind of knowledge is inferior, it consists of knowledge of matters of fact derived from observation and sense-experience. The

¹ Aristotle Metaphysics iv. 1. 1003^a, 21-22.

² Ibid., 27.

³ A. H. Basson, David Hume (London: Penguin Books, 1958), p. 21

superior kind of knowledge requires a certain manner of procedure or approach to its objects on the part of the knower. This procedure or approach is possible because man possesses an immaterial power called reason or mind, different from the body and the sense-organs, and which does not perish as the body does, but is eternal and immortal and is able to converse with ultimate reality. This intellectual power of being confronted with being as such, is indispensable to the metaphysician, it enables him to have an immediate perception of being, distinct from any discursive reasoning or demonstration through arguments. This intuition of the metaphysician is a direct contact with reality.

A description of such a contact with reality, is found in Jacques Maritain's book A Preface to Metaphysics. In this book Maritain quotes a personal experience communicated to him:

"I have often experienced in a sudden intuition the reality of my being, the profound first principle which makes me exist outside nonentity. It is a powerful intuition whose violence has sometimes frightened me and which first revealed a metaphysical absolute."¹

Metaphysical intuitions, according to Maritain, are "a gift bestowed upon the intellect,"² they are "a natural revelation to the soul, invested with the decisive, imperious, and dominant character of a 'substantial word' uttered by reality."³ This kind of intuition is not revealed to all metaphysical philosophers. Kant and Russell never had it. But this

¹Jacques Maritain, A Preface to Metaphysics (New York: A Mentor Omega Book, 1962), p. 52.

²Ibid.

³Ibid.

was not the case with Plato, Plotinus, Descartes, and Hegel, to mention but a few of the great metaphysicians. Maritain writes the following about this:

But we must also observe that although it the intuition is indispensable for the metaphysician, it is not given to everybody, nor to all those who engage in philosophy, nor even to all philosophers who desire to be or are believed to be metaphysicians. Kant never had it. What is the explanation of this? That it is difficult. It is not indeed difficult like an operation which it is hard to perform, whose successful performance demands expert skill. For there is nothing simpler. It was precisely because he sought it by a technique, an intellectual technique of extreme subtlety, that Kant failed to attain it.¹

Hume rejected violently the lofty claims of this kind of knowledge, and advised those who read volumes of metaphysics to search for "abstract reasoning concerning quantity or number"² or "experimental reasoning concerning matter of fact and existence"³, and if they did not find such reasonings to burn the volumes they have read.

It is held, for example, by rationalist philosophers that reason gives birth to the concept of cause and effect from itself. That is, the origin of the idea that if a thing is posited, something else must also necessarily be posited, is to be found in reason itself. Hume challenged reason to show why it thinks that everything is constituted in such a way that particular causes must necessarily have the same particular effects or why we infer one from the other, and what the idea

¹Ibid.

²David Hume, An Enquiry Concerning Human Understanding (1748), see. 12, Pt. 3, par. 11.

³Ibid.

of necessity is that is involved in saying that two things are necessarily connected. The question to which Hume expected an answer, was the following, as expressed by Kant:

Whether the concept [of cause] could be thought by reason a priori and consequently whether it possessed an inner truth, independent of all experience, implying a wider application than merely to the objects of experience.¹

Hume showed with acute arguments that reason cannot "think a priori and by means of concepts a combination involving necessity."² We cannot see why a particular cause must necessarily be followed by a particular effect, "or how the concept of such a combination can arise a priori."³ But although reason cannot answer the above questions, Hume answers them in terms of his own theory of impressions and ideas and the theories of association of ideas and generation of beliefs. We infer an effect B from a cause A from the fact that we have observed in the past that B constantly and immediately succeeded A, and also that the effect B is constantly spatially contiguous to the cause A. The ideas of A and B become thus associated, so that whenever we see A we also expect to see B. This being the case, it becomes a habit of ours that when we see A we always expect to see B. According to Hume, causal inference is just this habitual expectation. He writes: "When we are accustomed to see

¹Paul Carus (ed.), Kant's Prolegomena (La Salle, Ill: The Open Court Publishing Co., 1945), p. 5.

²Ibid., p. 4.

³Ibid.

two impressions conjoined together, the appearance or idea of the one immediately carries us to the idea of the other."¹ In general, according to Hume, "all inferences from experience . . . are the effects of custom, not of reasoning."² "For whenever the repetition of any particular act or operation produces a propensity to renew the same act or operation, without being impelled by any reasoning or process of the understanding, we always say that this propensity is the effect of custom."³

As we have seen, the constant conjunction of two objects, that is, their spatial contiguity and succession makes us expect the occurrence of one if the other has already occurred. And Hume, trying to account for the idea of necessity, writes that the occurrence of a cause A is not only always followed by the expectation of the effect B, but after we have experienced a sufficient number of instances in which two objects are constantly conjoined together "we immediately feel a determination of the mind to pass from object to its usual attendant."⁴ In other words, when we experience A, we feel compelled to expect the experience of B. The idea of necessity or necessary connection between two objects is derived from the resemblance of the relations of succession and contiguity in the occurrence of the objects in question. "The several instances of resembling conjunction leads us to the notion of . . . necessity."⁵

¹David Hume, A Treatise of Human Nature (1739), Bk. I, Pt. 3, sec.8, par.

²Hume, Enquiry, sec. 5, Pt. 1, par. 5.

³Ibid.

⁴Hume, Treatise, Bk. I, Pt. 3, sec. 14, par. 19.

⁵Ibid.

Hume also writes: "Necessity . . . is nothing but an internal impression of the mind, or a determination to carry our thoughts from one object to another,"¹ it "exists in the mind, not in objects."² This "determination" is a feeling of compulsion, which is in us and which we project to the objects, when we say that they are necessarily connected.

Kant saw in Hume's criticisms and conclusions a rejection of metaphysics. He writes:

If we accept his conclusions, then all that we call metaphysics is a mere delusion whereby we fancy ourselves to have rational insight into what, in actual fact, is borrowed solely from experience, and under the influence³ of custom has taken the illusory semblance of necessity.

Although Kant rejected Hume's conclusions, he was grateful to him. He had learned from Hume that before we start a metaphysical inquiry, we must make a critique of our reasoning faculty in order to show how such an inquiry is possible. Thus by giving a general form to Hume's objections to the concept of cause and effect, he found with some delight that the whole of metaphysics consisted of concepts "by which the understanding thinks the connexion of things a priori,"⁴ and he undertook the painful task of ascertaining their number and of deducing these concepts which spring from pure understanding, so that we would have the right to use them when we made objective empirical judgments.

¹Ibid. ²Ibid., par. 21.

³Immanuel Kant, Critique of Pure Reason, trans. Norman Kemp Smith (London: Macmillan & Co Ltd, 1956), p. 55.

⁴Carus, Kant's Prolegomena, p. 7.

In other words, he undertook the task of showing that without these concepts our experience of objects is not possible. Thus, according to Kant, metaphysical knowledge is a priori knowledge which comes "from pure Understanding and pure Reason."¹ This knowledge lies beyond experience, its basis is neither external nor internal experience. Since the sources of metaphysical cognition are not empirical, metaphysics consists of nothing but a priori judgments. Metaphysical judgments, according to Kant, are expansive as to their content, that is, they add something to the content of the cognition, in other words, the understanding goes outside what is given in the subject of the judgment and acquires new knowledge. Kant calls all metaphysical judgments synthetic a priori judgments. Thus "metaphysics is concerned with synthetical propositions a priori, and these alone constitute its end, . . . "² Metaphysical propositions are of undoubted certainty, they possess a universal and necessary validity, and since their possibility (in view of Hume's criticisms) cannot be explained in terms of the law of contradiction or experience, Kant sets himself the task of explaining their possibility and of answering such basic questions as: How are synthetic a priori propositions possible?, how do we arrive at metaphysical knowledge?, and how do we justify our pretensions to such knowledge? "With the solution of this problem," Kant writes, "metaphysics stands or falls."³

¹Ibid., p. 14.

²Ibid., p. 24.

³Ibid., p. 27.

In asking the question "how are synthetic a priori propositions possible?", Kant presupposes that there are synthetic a priori propositions. He believes that the propositions of pure mathematics and the principles of physics are synthetic a priori, and accepting thus the existence of such propositions, he asks the question about their possibility. But if there are no synthetic a priori judgments, Kant's question cannot be asked, and his problem is not a problem at all.

Moritz Schlick, in his article "Is There a Factual A Priori", writes:

The defenders of the factual a priori . . . have . . . far more reason than Kant to ask the question: "How are synthetic a priori judgments possible?" . . . We have every cause to raise in the presence of this philosophy the still more penetrating question, . . . "Are the judgments actually synthetic and a priori which you take to be so?"¹

What Schlick suggests here is that before starting an inquiry about the possibility of the synthetic a priori judgments, we must be quite certain about the existence of any such judgment; and I think that the answer to Schlick's question requires an understanding of what we mean when we ask "Are there synthetic a priori judgments?" The meaning of this question will become clear, when we have clearly understood the meanings of such concepts as "analytic", "synthetic"(which is the opposite of "analytic"), "a priori" and its opposite "a posteriori", and also those concepts which are involved in the definitions of these.

¹Moritz Schlick, "Is There a Factual A Priori?" in Herbert Feigl and W. S. Sellars, Readings in Philosophical Analysis (New York: Appleton-Century-Crofts, Inc., 1949), pp. 279-80.

This thesis is an attempt to examine critically and to analyze as precisely as possible the concepts which enter into the question "are there synthetic a priori judgments?", so that its meaning will become clear; for I think that before we set about to answer a question, philosophical or otherwise, we must first "try to discover what question"¹ we are asking, and not shrink in front of the difficulties which an analysis of the above question might create for us. This analysis will enable us to decide whether we can ask this question at all and also whether there are any such propositions or not.

In what follows, we will consider the views of Kant on the subject of the kinds of judgments and their logical status, and the views of the major logical positivists and the pragmatic analysts on the analytic-synthetic distinction of judgments and the bearing of these views on the problem of the synthetic a priori propositions.

¹George Edward Moore, Principia Ethica (Cambridge: At the University Press, 1959), p. vii.

CHAPTER I

KANT: THERE ARE SYNTHETIC A PRIORI PROPOSITIONS

I

According to Kant, "all our knowledge begins with experience."¹ "We have no knowledge antecedent to experience,"² "antecedent" thought of in the sense of temporal order. But this does not mean that all our knowledge "arises out of experience."³ There is knowledge which is "absolutely independent of all experience."⁴ This is the so-called a priori knowledge, which is opposed to empirical knowledge, the sources of which are a posteriori, i.e. knowledge derived through experience. What is meant by a priori knowledge is that such knowledge is independent of experience not in the sense that it is possessed prior to the having of any experience, but in the sense that the evidence in support of it is not given by empirical observation or experimentation. For example, the judgment "all bodies are extended" is a priori, i.e. it is not established by an appeal to experience.

The criteria by which a priori knowledge is distinguished from

¹Kant, Critique, p. 41.

²Ibid.

³Ibid.

⁴Ibid., p. 43.

empirical knowledge, are those of necessity and strict universality. On the one hand, those judgments are a priori, which in being thought are thought as necessary, or are derived from propositions the truth of which is necessary; and, on the other hand, those judgments are a priori which are thought of as strictly universal, i.e. they are thought "in such a manner that no exception is allowed as possible."¹ Strictly universal judgments, like the necessary ones, do not have their source in experience, but possess an a priori validity. Although Kant says that these criteria "are inseparable from one another,"² he advises us to use them separately, for the strict universality of judgments "can be more convincingly proved than their necessity."³ What I understand by this, is that our proofs of strictly universal judgments, i.e. those which do not allow any exception as possible, convince us better than the proofs of necessary judgments, probably those judgments which "cannot be otherwise."⁴ I say probably, because Kant does not state what he means by a necessary judgment. According to him, a priori knowledge, as distinguished from empirical knowledge, is knowledge which "cannot be otherwise."⁵ And he holds that a priori judgments include necessary judgments and also strictly universal judgments. Since he states what a strictly universal judgment is, we may say that necessary judgments are those which "cannot be otherwise,"⁶ and now we need to know what Kant meant by this expression. He might

¹Ibid., p. 44.

²Ibid.

³Ibid.

⁴Ibid. p. 43.

⁵Ibid.

⁶Ibid.

have meant by the expression "necessary judgments are those judgments which cannot be otherwise" the following: (1) that necessary judgments cannot be otherwise in an absolute sense, i.e. in the sense of logical impossibility, and (2) that necessary judgments cannot be otherwise in a relative sense, i.e. they cannot be otherwise relative to experience. In the latter case, we can distinguish three senses: (a) that necessary judgments cannot be otherwise because our evidence shows that their validity is never questioned, that is, empirical evidence has always established the truth of the propositions in question; (b) that necessary judgments cannot be otherwise in the sense that they "are indispensable for the possibility of experience,"¹ (c) that necessary judgments cannot be otherwise in the sense that they "cannot be conceived to be false."² The first of these special senses must be ruled out, because the very definition of the term a priori excludes it, and the sense (1) must also be ruled out, if we want to talk sense when we ask the question "are there synthetic a priori propositions?" Thus we are left with the senses (b) and (c) as the possible meanings of "necessary", and these senses we will now consider.

Arthur Pap says that Kant meant by necessary judgments those judgments which "cannot be conceived to be false,"³ and he notices a shift of meaning in the term "necessary" in Kant's writings, from

¹Ibid., p. 45.

²Arthur Pap, Semantics and Necessary Truth (New Haven: Yale University Press, 1958), p. 26.

³Ibid.

the above sense to the sense "necessarily presupposed by what is claimed as knowledge of objective reality,"¹ that is, from (c) to (b). Pap, in one place, gives a denotative meaning to the word "inconceivable", by citing the example of a space enclosed between two straight lines,² and, in another place, he seems to mean by an inconceivable judgment, a judgment "which habits of association produced by experience make it psychologically impossible to believe it."³ Kant did believe that the concept of a figure enclosed between two straight lines is logically possible, "since the concepts of two straight lines and their coming together contain no negation of a figure."⁴ But the above concept is not really possible, because of the conditions of space, which do not allow its construction. A concept "must relate to an object"⁵ in order to be really possible, or it must be verified by sensible intuition. Kant writes: "The possibility of a thing can never be proved merely from the fact that its concept is not self-contradictory, but only through its being supported by some corresponding intuition . . ."⁶ within "the field of sensibility."⁷ If Pap means by "inconceivable" "really impossible"--as it seems to mean in his example, if we see it in relation to Kant--then, he would agree with Kant, and thus the expression "cannot be conceived to be false" does not mean "cannot be otherwise" in the sense of logically necessary.

¹Ibid.

²Ibid., p. 35.

³Ibid., p. 39.

⁴Kant, Critique, p. 240.

⁵Ibid., p. 263 (slightly paraphrased).

⁶Ibid., p. 269.

⁷Carus, Kant's Prolegomena, p. 77.

So it would seem that according to Pap, when we say that a judgment is necessary, we say about that judgment that it is inconceivable to be false, i. e. it is really impossible for that judgment to be false. What is said here agrees with what we have written about those judgments which Kant calls strictly universal, that is, those which are thought "in such a manner that no exception is allowed as possible."¹ Kant never uses the criterion of necessity as identical with the criterion of strict universality. But it cannot be the case either that the expression "it cannot be conceived to be false" means "it is psychologically impossible to believe the judgment because of habits of association produced by experience," for this is a meaning which Kant never held with regard to necessary judgments, since he rejects Hume's view of subjective necessity, when he writes that the concept of cause "would become entirely unrecognizable if one wanted following Hume to derive it from a frequent conjunction of an event and the resulting habit (and thus merely subjective necessity) of association of ideas."² Thus Kant did not hold that a necessary judgment is a judgment which "cannot be conceived to be false," and thus he cannot be accused of shifting the meaning of necessity from the above sense to "necessarily presupposed by what is claimed as knowledge of objective reality," for the first meaning is that of strictly universal and the latter is that of necessity. And Kant has explicitly written that the two criteria of a priori propositions are not identical.

¹Kant, Critique, p. 44.

²Ibid.

Mr. Hamlyn also holds that the primary meaning of the term "necessary" in Kant is not that necessary judgments are in themselves necessary, but "only necessary to something else."¹ He writes that synthetic a priori judgments "are said to be such that their truth is a necessary presupposition of experience."² In other words, the truth of the proposition "every alteration has a cause" is necessary, if experience is to be possible. According to Kant, the connection between the concept of cause and the concept of event is necessary to the concept of experience. Thus Mr. Hamlyn interprets the term "necessary" in the sense (b), that is, the sense in which a judgment is said to be necessary, if it is indispensable for the possibility of experience. Although this is the case with the synthetic a priori propositions, it is not the case with the analytic a priori, for to say that the proposition "all bodies are extended" is analytic and necessary, does not mean that it is a necessary presupposition for the possibility of experience, but that the negation of such a judgment results in a contradictory statement.

Mr. Robinson writes the following about Kant's notion of necessity: "The concept of necessary propositions is now a muddle, and . . . this muddle began with Kant. I think that Kant's notion of necessary proposition is nothing definite, but just a confusion of the four clear

¹D. W. Hamlyn, "On Necessary Truth," Mind, LXX (October, 1961), 516

²Ibid., p. 516.

concepts of a necessary proposition that I have indicated."¹ These four clear concepts are the following:

1) A necessary proposition is "a proposition which is necessary for us men to believe."² He calls this sense the compulsory belief sense, and says that Kant did not adopt this sense of necessary proposition, that is, he did not think that we are compelled to believe the necessary proposition "every event has a cause" owing to the nature of the human mind. Mr. Robinson supports this by saying that according to Kant we are compelled to believe the above proposition from the premise that it is necessary, and not the other way. What Mr. Robinson says is true, but his reason for saying it is not quite clear, and I would like to elucidate the point further. Kant, talking about the categories as the concepts which make experience possible (and not that experience makes these concepts possible), excludes the view that the categories are "subjective dispositions of thought, implanted in us from the first moment of our existence."³ For, if this were the case, "the necessity of the categories, which belongs to their very conception, would then have to be sacrificed."⁴ If such a view were adopted, then "the concept of cause, for instance, which expresses the necessity of an event under a presupposed condition, would be false,"⁵ in the sense that the effect could not be said to be necessarily connected with the cause in the object. We could only say that our minds are so

¹R. Robinson, "Necessary Propositions," Mind, LXVII (July, 1958), 293

²Ibid., p. 290.

³Kant, Critique, p. 174.

⁴Ibid., p. 175.

⁵Ibid.

constituted that we cannot think the effect to be connected otherwise with the cause. In other words, this view could neither make the concept of cause an a priori concept of the understanding, nor the principle of causality a necessary one. Consequently, we would not feel compelled to believe it.

2) The second sense of necessary propositions is what is called by Mr. Robinson the Aristotelian sense. According to Aristotle, an "ἀναγκαῖα πρότασις"¹ is a proposition which contains the expression "ἐξ ἀνάγκης".² A proposition is said to be necessary in this sense, if it contains the expressions "must" or "cannot" or "necessary". Mr. Robinson says that Kant uses the term "necessary" partly and confusedly in this sense, since there are examples of necessary propositions in his writings, which contain the word "must". But the fact that Kant gives examples of necessary propositions in which the word "must" occurs, does not mean that he thought of them as necessary because of the occurrence of that word. To say that the proposition "two plus two must make four" is a necessary proposition because of the word "must", is to forget that for Kant the necessity of the above proposition is due to an a priori form of intuition. The above proposition is still a necessary one if it is written thus: "two plus two make four."

¹Aristotle Prior Analytics i. 8-12.

²Ibid.

3) The third sense of necessary propositions is called the Leibnitzian sense. Leibnitz writes: "When by analyzing a suggested truth, we see that it depends upon truths whose ~~opposite~~ involves a contradiction, we can say that it is absolutely necessary. But when, carrying our analysis as far as we like, we can never reach such elements of the given truth, it must be said to be contingent."¹ The necessary truths are called truths of reasoning, and the contingent truths are called truths of fact. The contradictories of truths of reasoning are impossible, while the contradictories of truths of fact are possible, that is, not self-contradictory. Illustrating the possibility of a truth of fact, Leibnitz asks: "What contradiction would have been if Spinoza had died at Leyden?"² Mr. Robinson says that Kant did not think of necessary propositions in the Leibnitzian sense "for it is one of his most important premisses that there exist propositions which are necessary although they are not analytic."³ But he also writes: "Kant thought he had found a necessary proposition whenever . . . a proposition . . . had a self-contradictory contradictory."⁴ If this is the case, then a proposition whose contradictory is self-contradictory would be necessary in Leibnitz' sense, Consequently, Kant would adopt this sense, and this would oppose his view that there are necessary propositions which are not analytic, since, as we shall see, Kant held explicitly that

¹Gottfried Wilhelm Leibnitz, Theodicee, Remarques sur le livre de M. King.

²Ibid., par. 174. ³Robinson, Mind, p. 293.

⁴Ibid., p. 293.

the common principle of all analytical judgments is the law of contradiction, which law, was not thought of as the principle of all necessary propositions. Mr. Robinson says that Kant's sense of necessary statement is not the Leibnitzian sense precisely but only confusedly. Since he thinks that Kant's universal and necessary judgments are the same, we have to examine in what sense Kant used the term "possible"; for a priori judgments, as we have seen, are defined by Kant in terms of the concept of possibility.

The concept of the possible, in the above context, is applied to judgments; but it would be better for our purposes to consider it in its application first to concepts and then to judgments. Kant distinguishes the logical possibility of concepts from the real possibility of concepts. In the first place, a concept is logically possible, if it does not contradict itself. For instance, a concept which contradicts itself is the concept of "a round square", and this concept is logically impossible; while the concept of a "noumenon", although a fiction, is not a self-contradictory concept, and thus it is logical possible. In the case of the real possibility of a concept, an object corresponds to the concept, for example, the object tree corresponds to the concept "tree". It must be noticed that the real possibility of a thing cannot be proved from the fact that there **is a concept for that thing and that that concept** is not self-contradictory. Its real possibility must be proved "only through its being supported by some corresponding

intuition."¹ It is sufficient for the possibility of things that their concept "should agree with the formal conditions of experience, that is, with the conditions of intuitions and concepts,"² and also that their concept must be connected with the "material conditions of experience."³ For there might be concepts which are fictions of the imagination and which may fulfill the formal conditions of experience and the demands prescribed by the categories, but they are not related to any object of sensation. Although it is not self-contradictory to have the concept of a figure enclosed by two straight lines, it is really impossible, its impossibility arises from the conditions of space which forbid its construction. If we pass from the possibility of concepts and things to the possibility of judgments, we may distinguish between judgments which are logically possible in the sense that the contradictories of such judgments are not self-contradictories and those judgments which we may say that they are really possible, i.e. the content of these judgments always agrees with the formal conditions of experience (that is, the conditions of intuition and concepts). Thus we see that when Kant said that a strictly universal judgment is one with no possible exception, he meant by "possible" "really possible", and not logically possible. It is now obvious that Kant did not view all necessary propositions in the Leibnitzian sense. From these considerations we conclude that Kant

¹Kant, Critique, p. 269.

²Ibid., p. 239.

³Ibid.

uses the term "necessary" in two senses: (1) in the sense of logical necessity and (2) in the sense of being indispensable for the possibility of experience.

4) The fourth sense of necessary propositions is called the universal sense. According to this sense, a proposition is necessary, if it asserts "a universal connection with unrestricted generality."¹ Propositions having the form "absolutely A is B", "if anything were A it would also be B," are necessary in the above sense. Mr. Robinson writes that Kant thought of necessity partly and confusedly in terms of unrestricted generality. But, as we have already seen, Kant clearly distinguishes between strictly universal propositions and necessary ones, and he talks of strict universality and necessity as criteria of a priori judgments. Mr. Robinson seems to confuse the notion of strict universality with that of unrestricted generality, as it is seen from the example of an unrestricted general judgment which he gives. Mr. Robinson thinks that the proposition "all bodies are heavy" is necessary in the sense that if anything were a body, it would necessarily be heavy. But Kant thinks of the above judgment as being empirically or comparatively universal, for the characteristic of such judgments is the extension of the validity of the judgment which holds in most cases, to all cases. This being the case, the above judgment is not a priori, since it is derived through induction,

¹Robinson, Mind, LXVII, 291.

and, consequently, not necessary at all. Thus Mr. Robinson is not right when he says that Kant confusedly thought of necessity as unrestricted generality.

I believe that Kant's concept of necessary judgments is not a muddle, as Mr. Robinson holds. This concept is something definite, and our investigation has shown that the term "necessary", as applied to judgments is used by Kant in two senses, and these senses are not used confusedly by him. The first is that of logical necessity, that is, a necessary judgment is a judgment whose denial results in a contradiction. The second sense of a necessary judgment is that such a judgment is indispensable for the possibility of experience. We have also seen that when we ask the question "are there synthetic a priori judgments?", the term a priori is not taken to refer to logically necessary judgments. If this were the case, then we would ask "are there synthetic logically necessary judgments?", and this question can be roughly translated (as we shall see) in the following way: "are there judgments whose denial is not self-contradictory and which are logically necessary?" But this question is non-sensical.

In view of the above considerations, the question "are there synthetic a priori judgments?" can be translated as follows: (1) "are there judgments which are synthetic, and also necessary, i.e. indispensable for the possibility of experience?" and (2) "are there judgments which are synthetic, and also strictly universal, i.e. are there synthetic judgments of which no exception is allowed as possible?", or to put in other words, "are there judgments which are synthetic and which cannot be conceived to be false?"

constructed language systems, and the bearing of these views on the problem of the synthetic a priori.

I

Ayer believes that Kant's account of analyticity does not succeed in making the analytic-synthetic distinction clear. His argument against Kant is that he uses two criteria for distinguishing analytic from synthetic statements: (1) a psychological criterion suggested by the example " $7+5=12$ ", and (2) a logical criterion, that is, the principle of contradiction. Kant writes the following about the arithmetical judgment " $7+5=12$ ": "The concept of the sum of '7+5' contains merely their union in a single number, without its being at all thought what the particular number is that unites them. The concept of twelve is by no means thought by merely thinking of the combination of seven and five."¹ According to Ayer, Kant thinks that the criterion by which the judgment " $7+5=12$ " is shown to be synthetic is equivalent with the logical criterion, by which the judgment "all bodies are extended" is shown to be analytic. I think that Kant does not use two criteria for distinguishing between analytic and synthetic judgments. What is thought of as a

¹Carus, Kant's Prolegomena, p. 17.

psychological criterion by Ayer, is rather the definition of analyticity, which is logically prior to the criterion of analyticity. Nevertheless I agree with Ayer that Kant did not give us any clear account of analyticity and syntheticity. We proceed now to Ayer's account of analyticity and the synthetic a priori.

Ayer, following Hume, divides all significant propositions into two classes. The first class contains propositions concerning "relations of ideas", the second class contains propositions concerning "relations of facts". In the first class we find the a priori propositions of logic and mathematics. The propositions of philosophy belong to this class, too. The necessity and certainty of the propositions of the first class are due to the fact that they are analytic. A proposition is analytic "when its validity depends solely on the definitions of the symbols it contains."¹ Analytic propositions cannot be confirmed or refuted by the facts of experience, for they say nothing about the empirical world. They simply "record our determination to use symbols in a certain fashion."² The analyticity of propositions depends on the meaning of the symbols which constitute them, and the validity of analytic propositions depends "upon certain facts about verbal

¹Alfred Jules Ayer, Language, Truth, and Logic (2d ed.; New York: Dover Publications, Inc., 1946), p. 78.

²Ibid., p. 84.

usage."¹ Analytic propositions are tautologies, and since a priori propositions are certain because they are tautologies, we can say that a priori propositions are certain because they are analytic. Their certainty is logical. Only a priori propositions can be logically certain, or, in other words, we can say that a priori propositions are necessary. A necessary truth is one whose validity is logically determined. Now a priori propositions are independent of experience not in a psychological or historical but in an epistemological sense, i.e. their validity does not depend on empirical verification. Whenever we deny an analytic proposition, we are contradicting ourselves, we sin "against the rules which govern the use of language."² If we know how the words "either", "or", "not", etc., function, we see that the proposition "either p is true or p is not true" is valid, independently of any empirical observations. If we deny it, we contradict ourselves, that is, although we know how the above mentioned logical words are used, we do not abide by the rules which govern their usage. We can say that analytic propositions "enlighten us by illustrating the way in which we use certain symbols,"³ that is, they "call attention to the implications of a certain linguistic usage,"⁴ but they are devoid of factual content, and that is why the world

¹Ibid.

²Ibid., p. 77.

³Ibid., p. 79.

⁴Ibid.

of experience cannot refute them. But this is not the case with the synthetic propositions. A proposition is synthetic when its validity is not determined merely by a consideration "of the definitions of the symbols which constitute it."¹

A proposition is synthetic "when its validity is determined by the facts of experience."² Propositions whose validity is tested by reference to sense-experience are factual. No general factual proposition can ever have the characteristic of being necessary and universally true. Synthetic propositions, that is, the truths of science and those of common sense (factual propositions) are hypotheses. Ayer believes that a sentence says something only if it is empirically verifiable. Thus a proposition which is empirically verifiable is not analytic, for analytic propositions say nothing at all.

Ayer rejects the view that the propositions of mathematics are synthetic. He explains their necessity and certainty in terms of their analyticity, and rejects Kant's hypothesis that space and time are forms of intuitions of our outer and inner senses, which are imposed by us on the given sensations. Kant put forward this hypothesis, for it alone explained how the propositions of geometry and arithmetic could be synthetic a priori.

¹Ibid., p. 79.

²Ibid., p. 78.

But Ayer says that these propositions are not synthetic.

He writes:

The only argument that can be brought in favour of Kant's theory is that it alone explains certain "facts". And now we have found that the "facts" which it purports to explain are not facts at all. For, while it is true that we have a priori knowledge of necessary propositions, it is not true, as Kant supposed, that all of these propositions are synthetic. They are without exception ¹ analytic propositions, or, in other words, tautologies.

Ayer explains the necessity of mathematical truths --and, as he says, of any a priori truth whatever-- as follows: He takes the proposition " $7+5=12$ ". He says that this proposition cannot conceivably be false for the reason that the "expression ' $7+5$ ' is synonymous with ' 12 '", just as our knowledge that every oculist is an eye-doctor depends on the fact that the symbol 'eye-doctor' is synonymous with 'oculist'.² About synonymity, Ayer writes the following: Two words or symbols which occur in the same language are synonymous, "if, and only if, the simple substitution of one symbol for the other, in any sentence in which either can significantly occur, always yields a new sentence which is equivalent to the old."³ For example, if the sentence "there are ' $7+5$ ' persons in this room" is equivalent to "there are ' 12 ' persons in this room", then the symbols " $7+5$ " and " 12 " are synonymous; and two sentences belonging to the same language "are equivalent if, and only if,

¹Ibid., p. 84.

²Ibid., p. 85.

³Ibid., p. 60.

every sentence which is entailed by any group of sentences in conjunction with one of them is entailed by the same group in conjunction with the other."¹ For example, the sentences S_1 and S_2 are equivalent if, and only if, the sentence S_6 which is entailed by the group of sentences S_3, S_4, S_5 , in conjunction with S_1 , is entailed by the same group of sentences in conjunction with S_2 . The word "entail" here is used in the sense of "deducible", that is, a proposition g is said to entail the proposition t , when the proposition t is deducible from the proposition g . Now "a proposition p is said to be deducible from, or to follow from, a proposition q when the denial of p contradicts the assertion of q ."² The relations of equivalence, entailment, deducibility, etc., which hold between sentences, are defined by Ayer without any reference to meaning. And we have seen that the meaning of a sentence is determined by the principle of verification which states that "a sentence is factually significant to any given person if, and only if, . . . he knows what observations would lead him, under certain conditions, to accept the proposition as being true, or reject it as being false."³ Or, to put it in a more general way, a sentence is meaningful if, and only if, it is in principle empirically verifiable.

¹ Ibid.

² Ibid.

³ Ibid., p. 35.

From the above exposition of Ayer's view we observe the following:

1) Ayer rejects any other use of the term "necessary" except that of logically necessary. Thus Kant's sense of "necessary", which enters into the formulation of the synthetic a priori, namely "indispensable for the possibility of experience"¹, is rejected.

2) Analyticity and syntheticity are defined, as we shall see more clearly later, rather in the same way in which Kant defined them, but with an emphasis on the synonymy of the concept of the predicate with the concept of the subject in the case of the subject-predicate judgments, for example.

3) The criterion of analyticity is the principle of contradiction, as it turns out from Ayer's views on synonymy, equivalence, entailment, and deducibility.

4) In denying the existence of synthetic a priori judgments, Ayer has in the back of his mind the defence of the empiricist thesis "that there are no 'truths of reason' which refer to matters of fact,"² that is, he wants to reject the rationalist doctrine that there are a priori truths about the world which "are known through thought and not through experience."³

¹Kant, Critique, p. 45.

²Ayer, Language, Truth, and Logic, p. 79. ³Ibid.

5) The way he tries to reject the rationalist thesis is by showing that the propositions which are taken to be synthetic and a priori, are not synthetic, i.e. they do not refer to the world of actual or possible experience. Both, Kant and Ayer, believed that there are propositions whose certainty and universality call for an explanation. For instance, the mathematical propositions. Kant thought them to be truths about the world, and he devised the hypothesis of the pure forms of intuition, in order to account for their possibility. Ayer denies that these propositions are about the world, and he accounts for their certainty in terms of their analyticity.

6) Ayer denies that there are any synthetic a priori judgments, not because he thinks of them as logically impossible --I think, he is aware of the Kantian meaning of necessary as it occurs in the concept of the synthetic a priori-- but simply because he rejects the hypothesis of the pure forms of intuition, and this, as we have seen, is done after he has tried, along empiricists lines, to explain the certainty of the propositions which were taken to be synthetic a priori. In other words, his rejection of the synthetic a priori is not dogmatic, as it seems to be in the case of certain logical positivists, for example, Moritz Schlick, as we have seen before. But, I believe, Schlick also is not

Before answering these questions, we have to understand what is meant by them, having in mind Kant's definitions of the concepts contained in them. For this reason, we have to find out what Kant means by the term "synthetic". If we find that Kant gives a clear meaning to the term "synthetic", then we have to investigate whether there are any synthetic a priori judgments, and if we find that there are such judgments, then our further task is to show how they are possible. But if Kant does not give a clear meaning to the term "synthetic", or gives it an inadequate one, then the whole question must be dropped as obscure or unintelligible.

II

So far, we have dealt with the concepts of the a priori and "necessary", and now we will consider the analytic-synthetic distinction of judgments.

Knowledge in general, according to Kant, is yielded by means of intuitions and by means of concepts (intuitive and discursive knowledge respectively). Discursive knowledge is given by the human understanding, which uses the concepts for judging by means of them. Kant writes: "Judgment is. . . the mediate knowledge of an object, that is, the representation of a representation of it. In every judgment there is a concept which holds of many representations, and among them of a given representation that is immediately related to an object."¹

¹Kant, Critique, p. 105.

For example, in the judgment "some birds are black", the concept "black" applies to other concepts too, i.e. to cats, nights, etc., but it is here particularly applied to the concept "bird", which concept applies to certain objects presented to us. Thus these appearances (objects) are mediately represented through the concept "black".

"Accordingly all judgments are functions of unity among our representations"¹ and Kant means by the word "function", "the unity of the act of bringing various representations under one common representation,"² in our case various representations of birds are brought under the common representation of black. According to Kant, concepts are predicates of possible judgments. For instance, the concept of "bird" applies to a raven, and a raven is knowable by means of the concept "bird". This concept can be the predicate of a possible judgment, i.e. the predicate of the judgment "every raven is black". Kant writes the following about judgments in general: "Whatever be their origin, or their logical form, there is a distinction in judgments, as to their content, according to which they are either merely explicative, adding nothing to the content of cognition, or expansive, increasing the given cognition"³ From this quotation we see that for Kant all judgments are considered to be of the subject-predicate form. But there are passages in Kant's writings which seem to disconfirm this. For example, in making the distinction between analytic and synthetic judgments

¹Ibid.

²Ibid.

³Carus, Kant's Prolegomena, p. 14.

he writes: "In all judgments in which the relation of a subject to the a predicate is thought . . . , this relation is possible in two different ways."¹ This quotation allows us to infer that subject-predicate judgments are only a species of judgments and not the only kind of judgments that there is. This is shown more clearly by the following quotation:

All relations of thought in judgments are (a) of the predicate to the subject, (b) of the ground to its consequence, (c) of the divided knowledge and of the members of the division, taken together, to each other.²

That not all judgments are of the subject predicate form can be shown by a consideration of some judgments which could not possibly be thought by Kant as being of the subject-predicate form. For instance, existential judgments like "there are pencils" or "God exists", cannot be rendered in the subject-predicate form, because existence is not a real predicate, according to Kant. Kant distinguishes what he calls real or determining predicates from logical ones, and allows existence to be a logical predicate but not a real one (a real predicate determines an object, i. e. it is added to the concept of the subject and enlarges it, while a logical predicate is already contained in the concept of the subject). It follows that existential judgments are not of the subject-predicate form. Another kind of judgments which cannot be thought as being of the subject-predicate form, are hypothetical judgments, like "if a is

¹Kant, Critique, p. 48.

²Ibid., p. 108.

greater than b, then b is smaller than a," or "if somebody is somebody's teacher, then somebody is somebody's pupil," or "if it rains, I shall stay in my room." This kind of judgments is distinguished from that of the subject-predicate form, in the sense that the relation of thought in the former case is between two judgments, while in the latter case the relation is between two concepts. And although we may say that the two judgments are of the subject-predicate form, the relation between the two is not of the subject-predicate form. A hypothetical judgment is false only when the consequent is false and the antecedent is true, while we cannot say that about a subject-predicate judgment, that is, we cannot say that the predicate is false in the same sense of "false" as applied to judgments. If the antecedent is thought to be the subject of the hypothetical judgment, then the "expression 'concept of a subject' would become unintelligible"¹, even if it is not nonsensical.

There is also another kind of judgments which is not of the subject-predicate form, for example, the judgment "a is greater than b" This judgment is of the relational form, that is, a relation of quantity is ascribed to the two subjects a and b. This judgment can be considered as being of the predicative form. The subject would be a and the predicate would be the expression "greater than b", and this

¹Pap, Semantics, p. 27.

would be attributed as a unity to a. But if this is the case, it is impossible to extract b by using rules of inference. This is possible in judgments of non-relational form. From the judgment "all Greeks are men" we can infer the judgment "some men are Greeks", while from the judgment "a is greater than b" we cannot infer the judgment "b is greater than a". It follows that relational judgments, if taken to be of the predicate form, do not possess the same characteristics as those which are possessed by the subject-predicate judgments of traditional logic, and in view of their limitations in that form, it is better not to consider them as such.

Now the question whether Kant held that all judgments are of the subject-predicate form, must be answered in the affirmative, in spite of the above-mentioned consideration concerning their scope. Kant writes: "If we take single passages, torn from their contexts, and compare them with one another, apparent contradictions are not likely to be lacking . . . but they are easily resolved by those who have mastered the idea of the whole."¹ Therefore, the apparent inconsistency of the above given quotations concerning the scope of necessary judgments, is resolved in favour of the view that all judgments are of the subject-predicate form, if we take into consideration the work as a whole. This might be supported by the fact that Kant adopted the traditional logic with its subject-predicate propositions and used it for the deduction of the categories.

¹Kant, Critique, p. 37.

What has been said so far, is very important for the distinction of judgments into analytic and synthetic, for the definition, which Kant gives of analyticity and syntheticity in terms of the containment of the concept of the predicate in the concept of the subject, divides all judgments into analytic and synthetic, provided we think that all judgments are of the subject-predicate form. But if we think that this is not so, then the analytic synthetic distinction applies only to a species of judgments. Continuing now the quotation (1) of page twenty-five, we read:

Either the predicate B belongs to the subject A, as something which is (covertly) contained in this concept A; or B lies outside the concept A, although it does indeed stand in connection with it. In the one case I entitle the judgment analytic, in the other synthetic.¹

In the Prolegomena Kant writes: "Analytical judgments express nothing in the predicate but what has been already actually thought in the concept of the subject, though not so distinctly or with the same (full) consciousness."² The way in which we find out whether a judgment is analytic or synthetic, is the principle of contradiction. For example, when the judgment "all bodies are extended" is given, and we want to find out whether it is analytic or synthetic, we "have only to extract from it, in accordance with the principle of contradiction, the required predicate, . . . "³ In the Prolegomena

¹Ibid., p. 48.

²Carus, Kant's Prolegomena, p. 14.

3

³Kant, Critique, p. 49.

he writes: "All analytical judgments depend wholly on the Law of Contradiction, and are in their nature a priori cognitions, whether the concepts that supply them with matter be empirical or not."¹

The above distinction of judgments into analytic and synthetic is mainly subjected to two objections. One is directed towards the definition of analyticity, that is, against the metaphor "contained" which is thought to be vague, and the other against the criterion of analyticity in terms of the law of contradiction. Let us now consider the first objection. In what sense is the concept of the predicate contained in the concept of the subject? I think that Kant clearly answers this question when he writes that in the analytic judgment "all bodies are extended", "I can apprehend the concept of body analytically through the characters of extension, impenetrability, figure, etc., all of which are thought in the concept."² Thus "contained" means being thought in the concept of the subject. This agrees with the definition of an analytic judgment found in the Prolegomena and quoted above.³ We read there that the concept of the predicate in analytic judgments is "actually thought in the concept of the subject."⁴ The question now arises: What is that which determines when the concept of the predicate is to be actually thought in the concept of the subject? Pap writes that Kant "failed to solve this problem [and this] is

¹Carus, Kant's Prolegomena, p. 15.

²Kant, Critique, p. 50.

³see n. 2, p. 28.

⁴Ibid.

a forgivable sin if one considers that the entire problem of the identity conditions of intensions (when are two predicates identical, when are two propositions identical?) is still highly controversial nowadays . . . ¹ But the fact that according to Kant we apprehend "the concept of body analytically through the characters of extension, impenetrability, figure, etc.,"² might seem to provide a certain kind of definition, that is , a body may be defined as that which possesses extension, impenetrability, figure, etc. Therefore, when we say that the concept of the predicate is contained in the concept of the subject, we mean that the concept of the predicate occurs in the definiens of the definition of the concept "body". And now we are led to the question: What is the nature of the definition of a concept according to Kant? In the Critique Kant writes: "To define, as the word itself indicates, really only means to present the complete, original concept of a thing within the limits of its concept."³ "Completeness" requires that the characteristics of the concept must be clear and sufficient; the "limits" determine the precision of the characteristics in the definition of the concept, i.e. the characteristics of the concept must not exceed those which belong to it; by "original" is meant that the determination of the limits of the concept is not demonstrable. Kant believes that there cannot be definitions of empirical and a priori concepts, if the above definition of a concept is adopted, but only definitions of mathematical concepts.

¹Pap, Semantics, p. 31. ²Kant, Critique, p. 50. ³Ibid., p. 586.

What is given as a definition of an empirical concept is a way of making it explicit. Kant writes about this: "We make use of certain characteristics only so long as they are adequate for the purpose of making distinctions; new observations remove some properties and add others; and thus the limit of the concept are never assured."¹ In the case of a priori concepts, their clearness and their sufficiency of characteristics are always in doubt, and "a multiplicity of suitable examples suffices only to make the completeness probable, never to make it apodeictically certain."² Mathematical concepts are arbitrary concepts and they can be defined because they have been invented. Definitions in mathematics are constructions of concepts, "mathematical definitions make their concepts."³ Only the arbitrarily invented concepts of mathematics fulfill the meaning of definition as conceived by Kant. Kant distinguishes between nominal and real definitions and although he holds that mathematical definitions are real, it turns out that they are nominal. This being the case and knowing also that the meaning of analyticity depends on the meaning of the definition of the concept of the subject, we conclude that the notion of analyticity is not clear as given by Kant, for we are never certain about the limits of empirical or a priori concepts. Thus the following questions still remain, for they are not

¹Ibid.

²Ibid., p. 587.

³Ibid., p. 588.

answered successfully by Kant: What does it mean that the concept of the predicate of an analytic judgment is actually thought in the concept of the subject? or what is the nature of definition?

S. Körner suggests another interpretation of the metaphor "contained", as used by Kant. According to him, the concept of the predicate of a judgment is contained in the concept of its subject if, and only if, by negating the judgment we have a contradiction in terms. What Körner does here is to give the principle of contradiction which is given by Kant as the criterion of analyticity, as the meaning of the metaphor "contained". He illustrates his point thus: "To say metaphorically that in the judgment 'Green is a colour', 'colour' is contained in 'green' is merely to say that by denying of green that it is a colour we are contradicting ourselves."¹ But that this is not the case, that is, that "contained" does not mean what Körner says Kant thought it to mean, is shown clearly by the above given interpretation of "contained" in terms of the nature of definition. The fact that the denial of the concept of the predicate of a judgment gives rise to a contradiction, is a consequence of the fact that the concept of the predicate is already contained in the concept of the subject, and in order to be conscious of the resulting contradiction, we must in some way already know that the concept of the predicate is contained in the concept of the subject, and that it would be absurd to deny

¹S. Körner, Kant (Bristol: Penguin Books, 1960), p. 22.

that it belonged to it. To know that a given judgment is a contradiction in terms, is to know beforehand that the concept of the predicate belongs to, or is contained, in the concept of the subject of the judgment. Thus we are in the previous position, that is, we ask ourselves: What does it mean to say that the concept of the predicate is contained in the concept of the subject of a judgment? We have seen that Kant does not give any clear answer to this question.

But even the criterion of analyticity itself is far from being adequate. Since for Kant all judgments are of the subject-predicate form, the scope of the criterion is limited, i.e. it is restricted to those judgments only, and to those which can be rendered in such a form. Thus relational, existential, and hypothetical judgments are outside the province of the application of the principle of contradiction. But besides this, the principle of contradiction as a criterion of analyticity, turns out to be circular. We have said that for Kant all judgments are divided into analytic and synthetic. He also held that the judgments of formal logic are analytic. The question now arises whether the principle of contradiction is sufficient to prove that the judgments which are classified as analytic are really so. Leibnitz has defined necessary truths as those the denial of which is impossible. For Kant analytic truths are those whose denial is impossible. That is, the law of contradiction is the criterion of logical necessity in the former case, while, in the latter case, it is the criterion of analyticity. Pap shows that the law of contradiction

or the reduction of analytic truths into identities, presupposes analytic truths which are not reducible to identities. His argument, with some changes, is the following: If, for example, the proposition "if p, then (p or q)" is analytic in Kant's sense, then its denial gives rise to a contradictory proposition. If this is to be accomplished, we require the use of the logical equivalences "(If p, then q) \equiv not-(p and not-q)", and "not-(p or q) \equiv (not-p and not-q)". Now, if these equivalences are not themselves analytic truths, then the proposition "If p, then (p or q)" has not been shown to be analytic, for we can deduce a contradiction from the denial of synthetic propositions, if we are allowed the use of synthetic propositions as premisses. Thus we have to show that the above equivalences are themselves reducible to identities. The first equivalence would be "a definitional identity, . . . if the logical system contained a definition of 'if, then' in terms of 'not' and 'and' as primitive connectives."¹ But can the second equivalence also be interpreted as a definitional identity? We may reduce the second equivalence to an identity with the help of the definition "(p or q) \equiv not-(not-p and not-q)" ("or" is defined in terms of "not" and "and"), and by presupposing the law of double negation, that is, "p \equiv not-(not-p)"; but the law of double negation, being an analytic truth itself, is not reduced "to an identity on the

¹Pap, Semantics, p. 8.

basis of a definitional equivalence."¹ What is shown by the above considerations is that the reduction of analytic truths to identities, presupposes principles of deduction which are themselves analytic truths and which we cannot reduce to identities. Thus the principle of contradiction is not a satisfactory criterion of analyticity, since a contradiction is deducible from a given judgment, which is thought to be analytic, by the help of analytic truths, which is trivial. This may be pointed out by considering another example: The principle "whatever proposition implies a false proposition is itself false" (modus tollens principle), may be expressed in a conditional form, as follows: If p entails q, and not-q, then not-p. To show that this proposition is analytic, we have to show that its negation is self-contradictory. Now in order to deduce the explicit contradiction "p and not-p" from it, the law of double negation, i. e. "not-(not-p)", is needed, and also in order to show that the expression "it is impossible that p and not-q" has as its contradictory, the expression "p and not-q", we need the axiom "If p, then p is possible." But to say that the truths of logic are themselves analytic, is trivial, for it is to say that from the negation of a logical truth, we can deduce a contradiction with the use of logical truths.

¹Ibid.

From what has been said so far, we conclude the following:

1) The only interpretation possible of the metaphor "contained" is in terms of definition. Now since the only concepts which can be completely defined, are the mathematical concepts, then the only conceivable analytic judgments are those which consist of mathematical concepts. Judgments which consist of non-mathematical concepts cannot be significantly termed as analytic or synthetic, for these terms are applied only to the judgments whose concepts are completely and adequately defined.

2) It turns out that we cannot draw the analytic-synthetic distinction of judgments in natural languages, for to say that only judgments of mathematics are analytic, does not imply that all other judgments are synthetic. To say this, would mean that we have adequate definitions of empirical or a priori concepts, and we know that this is not the case according to Kant, for such concepts cannot be completely defined, and thus the analytic-synthetic distinction does not arise in a natural language.

3) Kant's account of definition, as given above, seems to beg the question, if we take it to be an interpretation of the metaphor contained, for in explaining what he means by "limits", he writes: "By limits is meant the precision shown in there not being more of these characteristics than belong to the complete concept,"¹ suggesting thus that we somehow know what belongs to the concept

¹Kant, Critique, p. 586, n. a.

to be defined, in other words, we know what is contained in the concept and we must not surpass its limits.

4) Since the principle of contradiction is inadequate as a criterion of analyticity, we might come across mathematical judgments which we could not possibly determine as analytic or otherwise; and since Kant held that all judgments are of the subject-predicate form, then the propositions of mathematics are also of this form. But this is false, for there are mathematical propositions which are not of this form and cannot be rendered in this form.

5) After we had dealt with the meaning of the metaphor "contained", we concluded that the meaning of analyticity is not clear, in as far as it depends on the meaning of the definition of the concept of the subject. Consequently, the meaning of the syntheticity of judgments is not clear either. Now the questions, "are there judgments which are synthetic, and also indispensable for the possibility of experience?" and "are there synthetic judgments of which no exception is allowed as possible?", do not have any clear meaning, for the meaning of the term synthetic is obscure. That is, we simply do not understand these questions. These questions cannot be asked about judgments which contain either empirical or a priori concepts or both, for these concepts cannot be completely defined, since Kant believes --as far as the definitions of empirical concepts are concerned-- that "new observations remove some properties and add others; and thus the

limit of the concept is never assured,"¹ we can never make a definite decision of presenting "the complete, original concept of a thing within the limits of its concepts,"² in order to be able to apply the term analytic or synthetic to judgments, which contain empirical or a priori concepts. To say, for example, that the principles of physics are synthetic a priori, is to utter an unintelligible judgment, if we are to follow consistently the logical conclusions of Kant's doctrine on the nature of definition. Judgments which are indispensable for the possibility of experience contain empirical or a priori concepts which cannot be completely defined. Thus the terms analytic and synthetic cannot possibly apply to them. To ask the question "are there synthetic necessary judgments?" is like asking "are there synthetic judgments which are also indispensable for the possibility of experience, and, hence, contain empirical or a priori concepts, to which the term synthetic does not apply?" But this is a non-sensical question. The same can be said also about the question "are there synthetic judgments which are strictly universal?" Thus it turns out that Kant's question: "How are synthetic a priori judgments possible?" is not a clear question, and if we follow Kant's views consistently and deduce their logical conclusions, the above question does not make much sense.

¹Ibid., p. 586.

²Ibid.

CHAPTER II

LOGICAL POSITIVISTS: THERE ARE NO SYNTHETIC A PRIORI PROPOSITIONS

Logical positivism had its origin in a group of philosophers, scientists, and mathematicians, who called themselves the Vienna Circle. The Vienna Circle was formed in the early 1920's and developed into a well organized movement around 1930. The head of the Circle was Moritz Schlick, Professor of Philosophy at the University of Vienna. Amongst the members of the Circle were the philosophers Rudolf Carnap, Friedrich Waismann, and Herbert Feigl, the scientist Phillip Frank, and the mathematician Kurt Gödel. Among the philosophical predecessors of the Vienna Circle were David Hume and Ernst Mach, but especially Hume who, according to Ayer, foreshadowed the main doctrines of logical positivism.

The main doctrines of the logical positivists are their anti-metaphysical attitude and their great respect for science and mathematics. In writing about and discussing the problems which they were interested in, they were not searching for truth. They thought that truth was the concern of the scientist, while they themselves were concerned with meaning. The search for meaning was

for them the proper task for philosophers. Thus they devised a criterion of meaningfulness, the famous Verification Principle or Criterion of Verifiability. This states that "the meaning of any statement is shown by the way in which it could be verified."¹ The logical positivists, being consistent empiricists, held also that every verification must end in sense-experience. Thus, according to this criterion, metaphysical and theological statements become meaningless. The logical positivists divide all meaningful propositions in two classes: (1) the class which contains the propositions of logic and pure mathematics, which are tautologous, i.e. they are true under all circumstances, and (2) the class of empirically verifiable propositions, which are called factual. If a sentence expresses neither a tautology nor a factual proposition, then it does not express any proposition at all. It has no cognitive meaning. Metaphysical works might have poetic merits, or they might express an interesting or dull attitude towards life, but they are cognitively meaningless. Ayer writes:

The originality of the logical positivists lay in their making the impossibility of metaphysics depend not upon the nature of what could be known but upon the nature of what could be said. Their charge against the metaphysician

¹G. J. Warnock, English Philosophy since 1900 (London: Oxford University Press, 1958), p. 45.

was that he breaks the rules which any utterance must satisfy if it is to be literally significant.¹

Such a view about the division of significant propositions seems to make the synthetic a priori proposition a logical impossibility. Moritz Schlick expresses this view clearly when he writes:

The empiricism which I represent believes itself to be clear on the point that, as a matter of principle, all propositions are either synthetic a posteriori or tautologous; synthetic a priori propositions seem to it to be a logical impossibility.²

And elsewhere he writes: "Our empiricism makes the assertion that there are no other a priori judgments than the analytic, or rather, as we prefer to say today, that only tautological propositions are a priori."³

These views along with the general doctrines of logical positivism were clearly, lucidly, and vigorously expressed in the youthful work of A. J. Ayer, Language, Truth, and Logic. This book was published in England in 1936 and it stirred the philosophical atmosphere.

We are going now to see in detail the logical positivist's thesis of the synthetic a priori as expressed in Ayer's book, mentioned above; then we shall deal with the views of Rudolf Carnap on the analytic-synthetic distinction, in terms of artificially

¹A. J. Ayer (ed.), Logical Positivism (Glencoe, Illinois: The Free Press, 1959), p. 11.

²Schlick, in Feigl and Sellars, Readings in Philosophical Analysis, p. 281.

³Ibid., p. 280

as dogmatic as he seems to be, for he was aware of the fact that Kant identified the a priori with the formal, and that Kant has done this because it was the only way to solve the problem of the synthetic a priori propositions in the exact sciences; for he took these propositions as asserting something about the stuff of experience. Schlick writes that according to Kant, "the a priori validity of these judgments can only be understood on the condition that they express nothing but the form of experience which consciousness gives to all knowledge."¹ But Schlick rejects the synthetic a priori, because in asking the question "are the judgments actually synthetic and a priori which you take to be so?"² he answers it in the negative, for he believes that "the propositions of pure mathematics are not synthetic, while those of the science of nature . . . are not a priori."³ Thus the possibility of the synthetic a priori propositions is rejected by Schlick because in examining those propositions which Kant thought to be synthetic a priori, he found them to be either analytic or a posteriori.

Now, Ayer's theory of analyticity had many critics. Some thought it to be a threat to civilization and to reason in particular, others looked at it as another theory of the a priori

¹Schlick, in Feigl and Sellars, Readings in Philosophical Analysis, p. 279.

²Ibid., p. 280.

³Ibid.

which had to be criticized for its inadequacy. For example, C. D. Broad holds that Ayer defined the term "synthetic" in such a manner that all synthetic propositions turned out to be empirical, thus by the very definition of the terms, Ayer excluded the possibility of the synthetic a priori propositions. Broad writes: "It is evident that no-one who entertains the possibility that there might be synthetic a priori propositions, would be in the least moved by this argument. For it is evident that he would not mean by 'synthetic' what Mr. Ayer defines the term to mean."¹ Pap criticizing also the logical positivist's contention that synthetic a priori propositions constitute a logical impossibility, says that this thesis depends on the meanings which are given to the terms "analytic", "synthetic", "a priori", and "empirical", and he thinks that for some philosophers the term "synthetic" and the term "empirical" are synonymous, a view which entails the logical impossibility of the synthetic a priori. He is of the opinion that it is absurd "to define a traditional term in such a way, that on the basis of the definition, a traditional

¹C. D. Broad, "Are There Synthetic A Priori Truths?" Proceedings of the Aristotelian Society, Supplementary Volumes, XV (1936), 106-107.

question formulated by means of that term becomes non-sensical."¹ B. Blanshard sees a philosophical revolution in the doctrines of logical positivists, for, if the doctrine that all necessary propositions are analytic is combined with the verifiability theory of meaning, then statements about God, freedom of the soul, etc., become meaningless and philosophy instead of searching for truths, becomes "a department of logic."² Blanshard criticizes and rejects Ayer's view that necessary propositions express linguistic conventions, and that they do not have any factual content.

A. C. Ewing holds that the views of the logical positivists cannot "help the world practically,"³ and also that they "encourage . . . widespread depreciation of reason,"⁴ but he says that his rejection of the views of logical positivism is a result, not of their bad practical effects, but a result of purely philosophical considerations. Ewing believes that a priori propositions give us new knowledge about reality and that their necessity does not depend upon language conventions. What I propose to do now, is to give a critical examination and evaluation

¹Pap, Semantics, p. 95.

²Ayer, Language, Truth, and Logic, p. 57.

³A. C. Ewing, "The Linguistic Theory of A Priori Propositions," Proceedings of the Aristotelian Society, XL (1939-1940), 208.

⁴Ibid., p. 209.

of the logical positivist's thesis of the a priori by pointing out the extent to which some of the criticisms made against the theory of the synthetic a priori, as viewed by Ayer, are correct, and whether some of them are based on a misunderstanding of his views or not.

We have written before that, according to Broad, Ayer has identified the term "synthetic" with the term "empirical". This is why the logical positivists hold that the concept of the synthetic a priori becomes logically impossible. I shall try to show that Ayer does not identify the "synthetic" with the "empirical". But the reason for which the logical positivists seem to hold that the concept of the synthetic a priori is logically impossible, is that they recognize only one sense of necessity. I believe that they do not view Kant's concept of the synthetic a priori as a logical impossibility, but rather as an attempt to justify certain propositions, which were falsely viewed to be of a certain kind, along lines which the logical positivists reject.

Having now in mind Ayer's definition of a synthetic proposition we consider the synthetic proposition "there are ants which have established a system of slavery."¹ This proposition is synthetic because "we cannot tell whether it is true or false merely by considering the definition of the symbols

¹Ayer, L.T.L., p. 78.

which constitute it. We have to resort to actual observation of the behaviour of the ants."¹ Having now his definition of the term "analytic" in mind, and also what Ayer writes about the synthetic proposition just quoted, we conclude that a proposition is synthetic, when its validity is not determined by a consideration of the symbols which constitute it. What is it, then, which determines the validity of synthetic propositions? "The facts of experience,"² Ayer writes. Hence what is taken by Broad to be a definition of the "synthetic" is merely a criterion of syntheticity.

In Ayer's Language, Truth, and Logic, there is a sentence which is in some respects in accordance with that which gives Kant's definition of analyticity. This sentence is the following:

In saying that if all Bretons are Frenchmen and all Frenchmen Europeans, then all Bretons are Europeans, I am not describing any matter of fact. But I am showing that in the statement that all Bretons are Frenchmen, and all Frenchmen Europeans, the further statement that all Bretons are Europeans is implicitly contained.³

And he says that this statement tells us "only what we may be said to know already,"⁴ or, to put it in Kant's terminology, it is "explicative". In the same way, I think, he would say that in the proposition "all bodies are extended" the concept of extension is implicitly contained in the concept of body, or the meaning

¹ Ibid., p. 79.

² Ibid., p. 78.

³ Ibid., p. 79.

⁴ Ibid., p. 80.

of the term "extension" is implicitly contained in the meaning of the term "body". And in the case of synthetic propositions which describe facts, we cannot say that the meanings of some of the symbols of a proposition is implicitly contained in one of them, that is, the subject. We have seen that the denial of an analytic proposition results in a contradiction according to Kant. But this is the case also with Ayer, who believes that the denial of an analytic proposition results in a self-contradictory proposition. The following paragraph also supports the contention that Ayer used the term analytic in the same way as Kant did: "The only meaning which we attach to the statement that two concepts are necessarily connected is that the sense of one concept is contained in that of the other. Thus to say that "all men are mortal" is an instance of a necessary connection, is to say that the concept of being mortal is contained in the concept of man, and this amounts to saying that "all men are mortal" is a tautology."¹ Ayer holds also that those propositions which do not assert any necessary connection are empirical propositions. They are hypotheses. Their truth is never conclusively established. "A proposition whose validity we are resolved to maintain in the face of any experience is not a hypothesis at all, but a definition. In other words,

¹Ibid., p. 96.

it is not a synthetic but an analytic proposition."¹
From this quotation we see that a proposition the validity of which we cannot maintain in the face of further experience, or, in other words, when experience determines the validity of the proposition in question, is an instance of a synthetic proposition. However, this is not to be taken as a definition of syntheticity, but as a criterion of establishing the truth of synthetic propositions.

Ayer later somewhat modified his views about the conclusive establishment of empirical propositions, for he wrote in 1946 that "there is a class of empirical propositions . . . which can be verified conclusively. It is characteristic of these propositions, . . . , that they refer solely to the content of a single experience, and what may be said to verify them conclusively is the occurrence of the experience to which they refer."² But as far as the general propositions which refer to matters of fact are concerned, these can never be shown to be conclusively or logically certain. These are called a posteriori, while the propositions which "are independent of experience in the sense that they do not owe their validity to empirical verification"³ are called a priori.

¹Ibid., p. 95.

²Ibid., p. 10.

³Ibid., p. 75.

Ayer, I think, views the terms "empirical" and a priori, besides those of "synthetic" and "analytic", in the same way as Kant did. This is shown as follows: According to Kant, empirical judgments are those which "have their ground in immediate sense perception."¹ He divides empirical judgments into two classes. (1) There are the judgments of experience which possess objective validity. Their objective validity is due to the "particular concepts originally begotten in the understanding"² besides the "representation of the sensuous intuition."³ For example, the judgment "air is elastic" is a judgment which possesses objective validity. (2) There are also judgments of perception whose validity is subjective. These judgments do not require any pure concepts of the understanding but "only the logical connexion of perception in a thinking subject."⁴ For instance, the judgment "this room is warm" is a judgment of perception. Kant writes that "empirical judgments are always synthetic."⁵ Also empirical judgments are expansive, i.e. they increase the "given cognition."⁶ The term "empirical" is contrasted by Kant with the term a priori. A priori knowledge is knowledge not derived from experience. Even when the concepts which constitute a judgment

¹Carus, Kant's Prolegomena, p. 54.

²Ibid., p. 55.

³Ibid.

⁴Ibid.

⁵Ibid., p. 16.

⁶Ibid., p. 14.

are empirical, the judgment can be a priori. The reason why analytical judgments are a priori is that the concept of the predicate of an analytical judgment cannot be denied without contradiction. Kant writes that for "this very reason all analytical judgments are a priori."¹ Now this is in accordance with Ayer's view that the a priority of a proposition depends, exclusively in his case but not in that of Kant, on the logical necessity of the analytical judgments, that is, the concept of the a priori (in the sense here considered) is not independent of the concept of analyticity. But Kant speaks of the synthetic judgments which are also a priori. The concept of the a priori in that case depends on "the particular concepts originally begotten in the understanding"², or on the pure forms of intuition, and not on the concept of logical necessity.

I think that it is clear by now why I believe that Broad is mistaken when he says that Ayer identifies the term "empirical" with the term "synthetic". What Ayer says is that the only criterion of proving the validity of synthetic propositions is reference to the facts of experience, while Kant admits another source of the validity of synthetic propositions, namely, "pure Understanding and pure Reason."³

¹Ibid., p. 15.

²Ibid., p. 55.

³Ibid., p. 14.

As we have pointed out above , it is not the case that the logical positivists use the terms "synthetic" and "empirical" synonymously. What I want to do now is to find out whether it is true that there is "no obvious guarantee that if S expresses in a language L an a priori truth . . . then it is analytic . . ." ¹, taking into consideration Kant's definitions of "analytic", "synthetic", "a priori", "empirical", and "necessary". That is, I shall try to find out whether there is any contradiction in saying "a proposition which is known to be true a priori is not analytic." ² The above contention is a criticism of the logical positivist thesis of the impossibility of the synthetic a priori, and has therefore to be mentioned in this context.

Now according to Kant, a proposition is known to be true a priori when its knowledge is "independent absolutely of all experience," ² while knowledge which is derived through experience is called a posteriori, or empirical. Bearing in mind Kant's definition of analyticity and the contention that the only acceptable interpretation of the metaphor "contained" is in terms of definition, and substituting in the sentence "a proposition which is known to be a priori is not analytic" the terms "a priori" and "analytic" by their definitions, we have the

¹Pap, Semantics, p. 97.

²Kant, Critique, p. 43.

following proposition: "It is not the case that in a proposition which is known to be true independently of experience (that is, the evidence in support of it is not given by any empirical investigation), the concept of the predicate is contained in the concept of the subject (that is, the concept of the predicate occurs in the definiens of the definition of the concept of the subject)."

It is assumed here that all judgments are of the subject-predicate form, as well as that the language in which the a priori proposition is expressed is understood by the person who utters the proposition. Is it, then, the case that the above proposition is a contradictory one, that is, a proposition having the form "p and not-p"? I would agree with Pap that there is no contradiction in saying: "a proposition expresses in a certain language an a priori truth and this proposition is not analytic", for a proposition can be a priori and also synthetic according to the definitions which Kant gave to the above terms. It is assumed here that the terms "analytic" and "synthetic" apply to propositions which are constituted of concepts which can be completely defined. It is clear that if the logical positivists believed in the logical impossibility of the synthetic a priori -- as Pap thinks they did-- then the concept of necessity is not taken in Kant's sense, but in the logical sense; and in this sense Kant would also deny the concept of the synthetic a priori. But as I have shown above, it is a misunderstanding of the logical positivists' thesis

of the synthetic a priori to say that they thought it to be logically impossible.

We now come to consider the criticisms made against the view that necessary propositions express linguistic conventions.

Broad, criticizing the logical positivist's thesis that necessary propositions express linguistic conventions, observes that "at its face value", this theory is self-contradictory. Pap also writes that the linguistic theory of necessary propositions when first formulated "easily lent itself to the reductio ad absurdum that necessary propositions are really a special kind of empirical propositions, viz. generalizations about linguistic usage."¹ The man who was first to criticize the linguistic theory in the above-mentioned way, was Broad.

Considering some statements in Ayer's book, which either define or elucidate the nature of analytic propositions, such as:

They simply record our determination to use words in a certain fashion . . . ² I am simply calling attention to the implications of a certain linguistic usage.³
I am . . . indicating the convention which governs our usage of the words . . . ⁴ They call attention to linguistic usages, of which we might otherwise not be conscious, and they reveal unsuspected implications in our assertions and beliefs.⁵

he writes that "if, . . . , we accept either of these definitions of "analytic", it follows at once that all analytic propositions are

¹Pap, Semantics, p. 163.

²Ayer, Language, Truth, and Logic., p. 84.

³Ibid., p. 79.

⁴Ibid.

⁵Ibid., pp. 81-82.

synthetic and empirical."¹ This is the case since the statement "an analytic proposition . . . records our determination to call . . ."2 is a statement about our past, present or future behaviour, and the statement analytic propositions "call attention to linguistic usages . . ."3 is a statement about "an alleged matter of fact about a majority of writers and speakers of the language which the speaker is using."⁴ Thus analytic propositions are a subclass of synthetic empirical propositions, that is, generalizations about linguistic usages.

I think that Broad's interpretation of Ayer's view of analytic propositions and the conclusions he derives from it are wrong. This can be shown by quoting the passages, where it is made clear what Ayer meant when he wrote that necessary propositions call attention to linguistic usages. He writes that analytic propositions:

simply record our determination to use words in a certain fashion. We cannot deny them without infringing the conventions which are presupposed by our very denial, and so falling into self-contradiction . . . And just as the validity of an analytic proposition is independent of the nature of the external world, so it is independent of the nature of our minds. It is perfectly conceivable that we should have employed different linguistic conventions from those which we actually do employ. But whatever these conventions might be, the tautologies in which we recorded them would always be necessary. For any denial of them would be self-stultifying.⁵

¹Broad, Proceedings of the Aristotelian Society, Supplementary Volumes, pp. 107- 108.

²Ayer, L. T. L., p. 79.

³Ibid.

⁴Broad, Proceedings etc., p.107.

⁵Ayer, L. T. L., p. 84.

Ayer believes that propositions of philosophy are analytic, and he writes the following about these propositions:

It is misleading . . . to say . . . that philosophy tells us how certain symbols are actually used. For this suggests that the propositions of philosophy are factual propositions concerning the behaviour of a certain group of people; and this is not the case.¹

And elsewhere he writes:

In specifying the language to which he intends his definitions to apply, the philosopher is simply describing the conventions from which his definitions are deduced; and the validity of the definitions depends solely on their compatibility with those conventions. In most cases, indeed, the definitions are obtained from conventions which are actually observed by some group of people. And it is a necessary condition of the utility of the definitions as a means of clarification, that this should be so. But it is a mistake to suppose that the existence of such a correspondence is ever a part of what the definitions actually assert.²

Ayer, clarifying the above quotation, writes that a refutation of a philosophical opponent consists not in arguing "about people's linguistic habits [but in] proving that his definitions involve a contradiction."³

It was necessary to quote rather extensively in order to show that it is not the case that analytic propositions express the intentions of the speaker or the writer or assert conventions of language actually used, as Broad claims Ayer to mean by the expression "analytic propositions". For, as Ayer explicitly writes,

¹Ayer, L. T. L., p. 68.

²Ibid., p. 70.

³Ibid., n. 1.

the propositions of philosophy, which according to him are analytic propositions, are not "factual propositions concerning the behaviour of a certain group of people,"¹ and their validity depends neither on the nature of the external world nor on the nature of our minds. It depends only on the definitions of the terms they contain, and the validity of the definitions of the terms depends only on their compatibility with the conventions which the philosopher describes, when he specifies the language "to which he intends his definitions to apply."² Thus it is not true that the theory of linguistic necessity "at its face value contradicts itself"³, and also it is not true that "when the linguistic was first expressed . . . easily lent itself to the reductio ad absurdum that necessary propositions are really a special kind of empirical propositions . . ."⁴, for a careful study of the appropriate passages shows that this is not the case, and Ayer writes the following about this, in the introduction to the second edition of his book Language, Truth, and Logic:

It has indeed been suggested that my treatment of a priori propositions makes them into a sub-class of empirical propositions . . . This is not, however, the position that I wish to hold; nor do I think that I am committed to it. For

¹Ibid., p. 68.

²Ibid., p. 70.

³Broad, Proceedings etc., p.

⁴Pap, Semantics, p. 163.

although I say that the validity of a priori propositions depends upon certain facts about verbal usage, I do not think that this is equivalent to saying that they describe the facts in the sense in which empirical propositions may describe the facts that verify them; and indeed I argue that they do not, in this sense, describe any facts at all.

We conclude that what Ayer has written about analytic proposition does not commit him to what Broad thinks he is committed.

The view that necessary propositions are a species of empirical propositions and thus not necessary at all, or, in other words, that there are no necessary propositions if we adopt the linguistic theory, is shared also by Pap, who presented it more elegantly than Broad. Pap writes: "The linguistic theory lends itself . . . to deduction of a neat paradox."² The paradox is this:

Our theory, while admitting that necessary statements of a natural language are not statements about contingent linguistic habits, holds that what characterizes them as necessary is that the existence of such a habit is sufficient to guarantee their truth; But if an empirical statement p describes evidence for another statement q--in other words, if in stating p one gives an empirical reason for accepting q--then q is itself empirical. This contradicts the assumption that it is necessary.³

Now, Ayer believes that the truth-value of a genuine factual proposition is determined solely by empirical observations, and also that necessary truths "have no factual content"⁴, that is,

¹Ayer, L. T. L., pp. 16-17.

²Pap, Semantics, p. 165.

³Ibid.

⁴Ayer, L. T. L., p. 73.

they are not "truths about the world."¹ But if Ayer accepts that the existence of a linguistic habit is sufficient to guarantee the truth of a necessary proposition, then he would accept that an empirical observation has something to do with necessary propositions, and then according to the quotations given, the proposition cannot be a necessary proposition but one which is genuinely factual.

It is true that an existent linguistic habit is an empirical fact, but it is not an empirical fact of the sort which validates factual propositions. Therefore, I shall argue that Pap is wrong in saying that "the linguistic theory . . . lends itself . . . to deduction of a neat paradox,"² for I believe that Pap obtained the paradox by confusing two things: (1) the way in which we come to know the meanings of the constituent symbols of a proposition with (2) the way in which we come to know the truth of a proposition. For example, it is an empirical fact that the word "oculist" is used in the way in which it is used in the English language, and in order to find its meaning we have to see how it is used by the English speaking people, using any empirical observation possible, which will enable us to achieve our purpose, and the same can be said of

¹Ibid.

²Pap, Semantics, p. 165.

the word "eye-doctor" or of any other word. That means , we have first to understand the language before we come to the decision that a certain proposition is true or false, and the way we come to learn and understand a language is surely empirical. This is presupposed if we are going to distinguish between propositions whose truth we can know independently of experience and those whose truth depends on experience. If I know the meanings of the words, and this is not enough for deciding whether a proposition is true or false and thus I need to use empirical observations to find out what I want, then the proposition is a genuinely factual one; for, example, "Mr. X is an oculist." But for the proposition "an oculist is an eye-doctor", I do not need to have any empirical observations, since if I understand the meanings of the symbols contained in the proposition, I find it to be true independently of any empirical considerations. Thus this proposition is analytic, and being analytic it is a tautology, and being a tautology it is necessary. Its denial would result in a contradiction. If we say "an oculist is not an eye-doctor" and we know what we mean by an "oculist" and "eye-doctor", then we infringe the existent linguistic habit. The fact that a linguistic habit is an empirical fact, does not make necessary propositions dependent on empirical facts in the same sense in which empirical propositions are dependent on the empirical

facts that are relevant to their truth or falsehood.

Let us take, for example, the analytical proposition "an oculist is an eye-doctor" and the synthetic proposition "Mr. X is an oculist". If these propositions were uttered in Greek and if we did not happen to know Greek, then we would not understand them. Thus we ask somebody to translate them into English in order to understand their meaning, and we would learn that the word "oculist" and the word "eye-doctor" are used synonymously. So far there is a set of empirical facts which makes us understand the meanings of the words. These facts are of the same kind for both propositions. But now suppose we ask: "is an oculist an eye-doctor?" and "is Mr. X an oculist?" If we understand the language in which these questions are uttered, we immediately perceive that it is futile to ask the question "is an oculist an eye-doctor?", for we already know that the word "oculist" and the word "eye-doctor" are synonymous; and the mere empirical fact that they are synonymous makes the proposition "an oculist is an eye-doctor" true. That is, the set of empirical facts which enable us to understand the meaning of words or propositions suffices for establishing the truth of the first given proposition. But for the second proposition this is not enough. We may have been acquainted with Mr. X and so we may know about whom we are talking when we say "Mr. X is an oculist", but when

somebody asks "Is Mr. X an oculist?", our understanding of the question is not enough for establishing its truth or falsity. We have to find out, whether he is an oculist or not by asking or by observing him at work, etc. These empirical investigations constitute a second set of empirical facts, which in the case of synthetic propositions determine their truth-values. This is why Ayer writes that "although . . . the validity of a priori propositions depends upon certain facts about verbal usage, I do not think that this is equivalent to saying that they describe these facts in the sense in which empirical propositions may describe the facts that verify them."¹

We come now to Blanshard's criticisms of the view that necessary propositions express linguistic conventions. Since the logical positivists "do not mean by 'conventions of usage' the sort of facts that are reported in dictionaries"², Blanshard asks: "What, then, do they mean?"³ and he thinks that by that expression "they mean that the logical constants involved (for example, 'if', 'not', 'or', 'implies') have all of them arbitrary meanings which, so far as validity is concerned, might equally well have been otherwise," ⁴He thinks that the logical positivists

¹Ayer, L. T. L., p. 17.

²Brand Blanshard, The Nature of Thought (London: George Allen & Unwin Ltd, 1939), p. 409.

³Ibid.

⁴Ibid.

are quibbling. "The quibble is about definition,"¹ for they have confused two senses of definition. These senses are: (1) when we give meanings to words at random, and (2) when we "suit words to what is antecedently meant."² The logical positivists believe, according to Blanshard, that "the logical constants . . . have all of them arbitrary meanings"³ because they confuse the second with the first sense of definition. I think that Ayer is aware of this distinction and he does not confuse the two senses of definition. He distinguishes two kinds of definition: (1) that one found in dictionaries which he calls explicit definition and which consists in putting forward a symbol or a symbolic expression which is synonymous with the definiendum, and (2) the one which the philosopher is supposed to provide, which is called by him "definition in use"⁴. Definitions in use consist in translating sentences in which the definiendum significantly occurs "into equivalent sentences, which contain neither the definiendum itself, nor any of its synonyms."⁵ When definitions are employed as "a means of clarification"⁶ it is a necessary condition of their utility to be "obtained from conventions which do, in fact,

¹Blanshard, THE Nature of Thought, p. 410.

²Ibid., p. 411.

³Ibid., p. 409.

⁴Ayer, L. T. L., p. 60.

⁵Ibid., p. 60.

⁶Ibid., p. 70.

correspond to the conventions which are actually observed by some group of people."¹ But the definitions themselves do not assert the existence of such a correspondence. The first kind of conventions, mentioned above, are those found in artificial systems of symbols which have a known structure, as that of Principia Mathematica, which "facilitate the process of analysing a language,"² but "it is not necessary that the language in which analysis is carried out should be different from the language analysed,"³ for "a language can without self-contradiction be used in the analysis of itself."⁴ These quotations suggest that definitions are sometimes deduced from conventions which are actually used by certain groups of people, and if this is the case, then their validity "depends solely on their compatibility with these conventions."⁵ If we restrict ourselves to languages that are actually spoken or written, we will find that there are certain rules which govern the use of words which occur in the language. These rules may not be explicitly stated but they are found in the language implicitly. For example, there are "certain rules of entailment . . . which are characteristic of 'correct' English,"⁶ or there are certain conventions

¹Ibid.

²Ibid.

³Ibid. p. 71.

⁴Ibid.

⁵Ibid., p. 70.

⁶Ibid.

which govern the use of the logical particles "if, then", "or", "and", etc. From these rules or conventions we can deduce certain definitions which, if to be useful "as a means to clarification", must be compatible with these conventions. Therefore, it is not true that Ayer believed that the definitions of logical particles are arbitrary. The view that definitions are arbitrary has, I think, arisen from the following passage:

It is perfectly conceivable that we should have employed different linguistic conventions from those which we actually do employ. But whatever these conventions might be, the tautologies in which we recorded them would always be necessary. For any denial of them would be self-contradictory.¹

What this statement asserts is that any conventions which we may employ are recorded in tautologous statements and these statements being tautologous are necessary. Their necessity is a logical one, since we cannot deny them without contradiction. It is an empirical fact that we employ certain conventions in our language, and these conventions are illustrated or indicated by analytic propositions which are tautologies and thus necessary. In this way the necessity of a priori propositions is a product, or is due to the existence of certain linguistic conventions.

I think that the way in which the truth of this theory can be determined is the following: It is obvious that it is an

¹Ibid., p. 84.

empirical fact that we use certain linguistic conventions, or we have certain linguistic habits. Since necessity, according to Ayer, depends on the analyticity of the propositions, we have to ask whether it is the case that analytic propositions record conventions of language, or that conventions of language can be recorded only in analytic statements. If it is the case that analytic propositions do not record conventions of language, or that conventions of language can be recorded in non-analytic propositions, then it is not true that necessity is a product of linguistic conventions. Even if what Ayer holds about conventions of language and analytic propositions is true, this does not limit necessity to analytic propositions only, for, as we have seen, the concept of the synthetic a priori is not self-contradictory.

We come now to Ayer's contention that necessary propositions say nothing about the world of fact. This view presupposes that all necessary propositions are analytic, and since no empirical investigations can determine the truth or falsity of analytic propositions, these propositions have no factual content. For example, "the proposition 'Either some ants are parasitic or none are' provides no information whatsoever about the behaviour of the ants, or, indeed, about any matter of fact,"¹ that is, it does

¹Ayer, L. T. L., p. 79.

not provide information about "any empirical situation."¹

I find this to be true of analytic propositions, that is, analytic propositions do not describe any matters of fact in the sense in which synthetic propositions do. If I say "an oculist is an eye-doctor", "all fathers are male", "all bachelors are unmarried", etc., "I am not saying anything about the properties of any actual thing."²

I have tried to show in what I have written about Ayer's concept of the analytic and the synthetic that Ayer, although unsatisfied with Kant's definition of analyticity, gives a definition of "analytic" in Kant's sense. According to him, as we have seen, an analytic proposition is one whose "validity depends solely on the definitions of the symbols it contains."³ This "dependence" can be interpreted in two ways: (1) in Kant's sense, and (2) in terms of synonymy. If we take the first interpretation, then we have to find out what is to count as an adequate definition of a natural concept, so that we can definitely know what is and what is not included in the definition of the concept of the subject of a proposition in determining the analyticity of a statement of the subject-predicate form. If we take the second interpretation, that is, when the validity of a proposition

¹ Ibid.

² Ibid.

³ Ibid., p. 78.

depends on the definitions of the symbols which constitute it in the sense that one symbol is synonymous with the other, as it is the case with the proposition "all bachelors are unmarried men", then analyticity is defined in terms of deducibility, and since deducibility is understood in terms of contradiction, the definition of analyticity is inadequate to the extent to which the principle of contradiction is not sufficient to prove that all the judgments which are classified as analytic are really so, as we have seen when we were criticizing Kant's definition of analyticity.

But I believe that the question "are there synthetic a priori propositions?" can be meaningfully asked within the philosophy of logical positivism, if one does not reject Kant's sense of "necessary" as indispensable for the possibility of experience, or any other sense of that term, except the sense of logically necessary, for the logical positivists do not hold that natural concepts cannot be completely defined, as Kant did.

III

We shall deal now with Carnap's endeavours to clarify the notion of analyticity and syntheticity, and we shall try to find out whether the concept of necessity can be identified with that of analyticity or whether it can be accounted for in terms of analyticity.

R. M. Martin writes: "No one has drawn the distinction between 'analytic' (L-true) and 'synthetic' (f^{*}ctual) more clearly or with greater care and precision than Carnap."¹ It will also be our task to determine to what extent the above contention is true.

1. Semantical systems and semantical rules

A language, such as Greek, German, etc., according to Carnap, is a system of activities or a system of habits, which serves as a means of communication among the members of a group. The elements of such a language are signs, e.g., sounds or written marks, which make communication possible. Such a language has many sides, i.e. it may be connected with the theoretical side of the behaviour of the people who speak it, or with the volitional or emotional or other sides of their behaviour. Carnap restricts himself to the theoretical side of language, that is, "to the use of language for making assertions."² Thus among the different kinds of sentences i.e. commands, questions, declarations, etc., he considers declarative sentences only. Whenever a language (any language)

¹R. M. Martin, "On 'Analytic'," Philosophical Studies, III (April, 1952), 43.

²Rudolf Carnap, "Foundations of Logic and Mathematics," International Encyclopedia of Unified Science, ed. O. Neurath and others: combined ed., vol. I in two parts, (Chicago, Illinois: University of Chicago Press, 1939), p. 3.

is the object of our investigation, it is called the object-language of our investigation, and the language which is used to express the results of that investigation is called the metalanguage. If, for example, the object of our investigation is a fictitious language B and we talk about it in English, then English is our metalanguage.

In every situation in which a language is used, we observe that three factors are involved: (1) the speaker, who is found "in a determinate condition within a determinate environment"¹; (2) the linguistic expressions used by the speaker, and (3) "the objects, properties, states of affairs, . . . , which the speaker intends to designate by the expressions he produces."² These objects, properties, and states of affairs are called the designata of the expressions. The investigation which takes into consideration the speaker is called pragmatics, the investigation which deals with the expressions of the language and their designata is called semantics, and the investigation which restricts itself to the expressions and their forms, i.e. to the formal properties of the expressions and the relations amongst them, is called logical syntax. In what

¹Rudolf Carnap, Symbolic Logic (New York: Dover Publications, Inc., 1958), pp. 78-79.

²Ibid., p. 79.

follows we shall concentrate upon that part of language which is called semantics.

As we have said, the expressions of a language "may concern or designate or describe something,"¹ that is, the expression may refer to "an object or property or a state of affairs."² This object or property or state of affairs is called the "designatum" of the expression. By studying the relations between the expressions of the language under investigation and their designata, we formulate a system of rules which establish those relations. These rules are called semantical rules. They determine whether the use of a certain expression is right or wrong, while empirical facts can only inform us about the frequency of the occurrence of that expression and also about the frequency of its effectiveness. For example, we may find that in the language B the word "red" is used in ninety per cent of the cases for the red colour, and in ten per cent for referring to the political opinion of a person or a group of people. In constructing the semantical rules which establish the relations between the expressions of B and their designata, it is left to us to decide whether both the red colour and the political opinion of that group of people are the designata of "red",

¹Carnap, International Encyclopedia of Unified Science, p. 4.

²Ibid.

or the red colour only or the political opinion of a certain group of people only. If we take the first alternative, then the use of "red" in ninety per cent of the cases was right, according to our semantical rules, if we take the second it was wrong. That is, when the question arises as to whether the use of a certain expression is right or wrong, it must refer to a system of rules. The semantical rules are not rules of the factual language B, but they "constitute a language system corresponding to B"¹ which is called the semantical system B-S. While the language B is factual, the language system B-S is a construction of ours, it has exclusively those properties which are determined by the rules which we have laid down as the semantical rules of the system. The language system B-S is not constructed arbitrarily but "with regard to the facts about B"², thus "the language B is to a certain degree in accordance with the system B-S,"³ as might be seen by the example given above.

The elements of the semantical system B-S are called signs, and these are words which we have observed in the language B or they are only those words which, upon our decision, are

¹Ibid., p. 7.

²Ibid.

³Ibid.

to be accepted as correct. The signs of B-S are divided into two classes: (1) descriptive signs and (2) logical signs.

Descriptive signs are those which designate things or properties of things. Logical signs do not designate things or properties of things, but they serve "for connecting descriptive signs in the construction of sentences."¹ The logical signs of the English language are the words "is", "are", "not", "and", "or", etc.

Whenever we want to construct the semantical rules for a system--in our case the system B-S--we must make a classification of the signs and we must lay down the rules of formation. The class of descriptive signs and the class of logical signs are defined by a complete enumeration of the signs belonging to them. The descriptive signs are divided into names (moon, sun, etc.,) and predicates (cold, blue, etc.,). The logical signs are divided into logical constants ("is", "not", "and", etc.,), and variables ("x", "y", etc.,).

The rules of formation are those rules which govern the construction of sentences by using the various kinds of signs. A sequence of signs in B-S is called a sentence or a proposition of B-S, if, and only if, it has one of the following

¹ Ibid.

forms:

Form 1. ". . ._n is - - -_p". The ". . ._n" stands for a name, and the "- - -_p" stands for a predicate.

Form 2. "not . . ._s", the ". . ._s" stands for a sentence.

Form 3. "If . . ._s, then - - -_s", "- - -_s" stands also for a sentence.

Form 4. "For every . . ._v, - . . . -". The ". . ._v" stands for a variable and the "- . . . -" stands for an expression which is formed out of a sentence not containing a variable by replacing one or several names by the variable ". . ._v" (e.g. for every x, x is blue).¹

The partial sentences of the forms 2 and 3 are called components of the whole sentence.

We have seen that among the signs of B-S are the so-called descriptive signs, which designate things or properties of things, and Carnap lays down the following rules of designation:

- 1) "The names designate things,"² that is, the sign "moon" designates the moon. Here a complete list of rules for all the names of B-S has to be given.
- 2) "The predicates designate properties of things,"³ that is,

¹Ibid., p. 8.

²Ibid., p. 9.

³Ibid.

the sign "blue" designates the property of being blue. Here also a complete list of rules for all the predicates of B-S must be given.

Now Carnap is ready to state what he calls the L-semantical rules of B-S, which involve the logical signs. There are four rules corresponding to the four forms of sentences mentioned in the formation rules before.

Rule 1. "A sentence of the form ' \dots_n is $-\ - -_p$ ' is true if and only if the thing designated by ' \dots_n ', has the property designated by ' $-\ - -_s$ '."¹

Rule 2. "A sentence of the form 'not \dots_s ' is true if and only if the sentence ' \dots_s ' is not true."²

Rule 3. "A sentence of the form 'If \dots_s , then $-\ - -_s$ ' is true if and only if ' \dots_s ' is not true or ' $-\ - -_s$ ' is true."³

Rule 4. "A sentence of the form 'for every \dots_v , $-\ \dots -$ ', where ' $-\ \dots -$ ' is an expression formed out of a sentence by replacing one or several names by the variable ' \dots_v ', is true if and only if all sentences of the following kind are true: namely, those sentences

¹Ibid.

²Ibid.

³Ibid.

constructed out of the expression '-...-' by replacing the variable ' $\cdot v$ ' at all places where it occurs within that expression by a name, the same for all places; here names of any things may be taken, even of those for which there is no name in the list of names in B-S."¹

The semantical rules and the designation rules taken together provide a "general definition of 'true in B-S,'"² They also enable us to construct a truth criterion for any sentence of B-S which is given to us, that is, we can construct a "necessary and sufficient condition for its truth, in such a way that in the formulation of this condition no reference is made to the truth of other sentences."³ The semantical rules of B-S "determine for every sentence of B-S what it asserts--in usual terms, its 'meaning'"⁴ since "to know the truth conditions of a sentence is to know what is asserted by it."⁵

Carnap distinguishes two kinds of declarative sentences in a semantical system. These may be illustrated by the following examples: "Australia is large" (S_1) and "Australia is large or Australia is not large" (S_2). If we understand the language to which these these sentences belong, we can find out whether

¹Ibid., p. 10.

²Ibid.

³Ibid.

⁴Ibid.

⁵Ibid.

they are true or false. In doing this for S_1 we have to know some of the facts about Australia, and if Australia is large, then S_1 is said to be factually (or empirically) true. But for S_2 we do not need to know any facts about Australia, for any knowledge of the size of Australia is irrelevant. "Just by understanding S_2 we become aware that it must be right."¹ In this case we say that S_2 is logically true. As it is seen S_1 and S_2 are different in character. S_1 is factually determined, while for S_2 empirical determination is irrelevant. We can define precisely the character of logically true statements by reference to the semantical rules of the semantical system to which they belong. Thus the exact definition of logically true or false or factually true or false sentences can be formulated as follows: A sentence of a semantical system S is called L-true (logically true or analytic), "if it is true in such a way that the semantical rules of S suffice for establishing its truth."² A sentence is called L-false (logically false or contradictory) "if it is false in such a way that the semantical rules suffice for finding that it is false."³ Sentences which are either L-true or L-false are called L-determinate. Sentences which are neither

¹Ibid., p. 12.

²Ibid., p. 13.

³Ibid.

L-true or L-false are called L-indeterminate or factual.

A factually true sentence is called F-true, a factually false sentence is called F-false. Thus in a semantical system we have the following classification of sentences:

L-true: Analytic (L-determinate)
True:
F-true: Factual (L-indeterminate)

Declarative sentences:

F-false: Factual (L-indeterminate)
False:
L-false: Contradictory (L-determinate)

The above definitions of logically true or false and factually true or false sentences can be transferred to classes of sentences. That is, a class of sentences is called L-true "if it is possible to find out that [it] is true with the help of the semantical rules alone, hence if all sentences of it are L-true."¹ A class of sentences is called L-false, "if it is possible to find out with the help of the semantical rules that [it] is false, i.e. that at least one sentence of [it] is false."² The class which is either L-true or L-false is called L-determinate, otherwise L-indeterminate or factual.

Now, if the symbols "T₁", "T₂", etc., stand both for

¹Ibid., p. 14.

²Ibid.

sentences and for classes of sentences, we can define one of the "fundamental concepts in logical analysis of language"¹,

namely, the relation of L-implication as follows:

If the semantical rules suffice to show that T_2 is an implicate of T_1 , we call T_2 an L-implicate of T_1 ... The criterion for it can also be formulated in this way: the semantical rules exclude the possibility of T_1 being true and T_2 false; or in this way: according to the semantical rules, if T_1 is true, T_2 must be true. This last formulation of the criterion shows that L-implication, as defined here, is essentially the same as what is usually called logical consequence or deducibility or strict implication or entailment . . .²

Whenever the semantical rules suffice to establish the equivalence of T_1 and T_2 , i.e. to establish whether or not T_1 and T_2 are L-implicates of each other, T_1 and T_2 are said to be L-equivalent. "Sentences which are L-equivalent have the same truth-conditions; therefore, they say the same thing, although the formulation may be quite different."³ Also, whenever two expressions have the same truth-conditions, although they may have different pragmatical conditions of application, they are synonymous in the semantical system in which they occur, in other words, two expressions are semantically synonymous in a semantical system, if they have the same designatum by virtue of the rules of the semantical system. In all l-true sentences

¹ Ibid.

² Ibid.

³ Ibid., p. 15.

we observe that they convey no information about facts, since they are established without any regard to the properties of the things the names of which occur in the L-true sentences, in other words, an L-true sentence has no factual content.

The reference to semantical systems and semantical rules for a definition of analyticity, was necessitated by the belief that ordinary language is vague, and that it does not give a clear distinction between analytic and synthetic propositions. But semantical rules are believed to make this distinction clear. Now a semantical rule may be a rule of truth. It says that some statements together with other statements which are not mentioned, are included in the truths of a language system. But what is achieved by this attempt to make the concept of analyticity clear, is just to confuse the matter. For what Carnap does, is to appeal to the expression "semantical rule" with the hope of clarifying the notion of analyticity, but he leaves this expression unexplained and unclarified; for, if it is the case that every true statement of a semantical system which says that the statements of some class in that semantical system are true is to constitute a semantical rule, then all truths in that system "would be 'analytic' in the sense of being true according to

semantical rules"¹ of that language system, and thus we see that the expression "semantical rule of"² is left unexplained. Quine, in order to show that Carnap's notion of semantical rule is left unexplained, compares it with the notion of postulate. The word "postulate" is applied to a group of statements, when we think of some other statements which can be deduced from that group "by some set of transformations to which we have seen fit to direct our attention,"³ that is, the word "postulate" is "significant relative to an act of inquiry."⁴ In the same way the notion of semantical rule is significant if "conceived . . . relative . . . to one or another particular enterprise of schooling unacquainted persons in sufficient conditions for truth of statements of some natural or artificial language L."⁵ This being the case there is no reason why a true statement in that language system would be "intrinsically more a semantical rule than another"⁶, and it follows that "if 'analytic' means 'true by semantical rules', no one truth of L is analytic to the exclusion of the other."⁷

Another form of semantical rules, which purports to clarify the notion of analyticity and which is also used by Carnap,

¹Willard Van Orman Quine, From a Logical Point of View (Cambridge, Massachusetts: Harvard University Press, 1953), p. 34.

²Ibid. ³Ibid., p. 35. ⁴Ibid. ⁵Ibid. ⁶Ibid. ⁷Ibid.

is the form which explicitly specifies, "by recursion or otherwise,"¹ all the analytic statements of an artificial language system. These semantical rules say that "such and such statements, and only those, are the analytic statements"² in that system. But this clarification of "analytic" does not help us, since the semantical rules contain the word "analytic" which we do not understand.

2. State-descriptions

Another way in which Carnap tried to account for analyticity is by appealing to "state-descriptions". State-descriptions "represent Leibniz' possible worlds or Wittgenstein's possible states of affairs."³ A state-description is "a class of sentences in \mathcal{S} , which contains for every atomic sentence either this sentence or its negation, but not both, and no other sentences."⁴ A state-description gives "a complete description of a possible state of the universe of individuals with respect to all properties and relations expressed by predicates of the system."⁵ Semantical rules determine whether a sentence holds in a given state-description or not. "That a sentence holds in a state-description means, in nontechnical terms, that it would be true if the state-description

¹ Ibid., p. 33.

² Ibid.

³ Rudolf Carnap, Meaning and Necessity (Chicago, Illinois: The University of Chicago Press, 1956), p. 9.

⁴ Ibid.

⁵ Ibid.

(that is, all sentences belonging to it) were true."¹
The range of a sentence is "the class of all those state-descriptions in which a given sentence holds."² The rules which determine the range of any sentence in a semantical system are called rules of ranges, and "together with the rules of designation for the predicates and the individual constants,"³ the rules of ranges give "an interpretation for all sentences in S, since to know the meaning of a sentence is to know in which of the possible cases it would be true and in which not, as Wittgenstein has pointed out."⁴ The L-concepts (L-true, L-false, L-determinate, etc.) "are meant as explicata for certain concepts which have long been used by philosophers without being defined in a satisfactory way."⁵ By using the concept of state-description Carnap tries to make exact such vague concepts as are used in everyday life or in earlier philosophical works, or he tries to replace them by newly constructed more exact concepts. He calls this "the task of explicating"⁶ or "of giving an explication of the earlier concept; the earlier concept is called the explicandum; and the new concept is called an explicatum of the old one."⁷ The concept of L-truth is defined by

¹Ibid. ²Ibid. ³Ibid., pp. 9-10. ⁴Ibid.
⁵Ibid., p. 10. ⁶Ibid., p. 8. ⁷Ibid.

by Carnap instead of what Kant and other philosophers called logical or necessary or analytic truth, which concepts are vague and which serve as explicanda. The explicandum "analytic" has been defined as truth based on meanings alone. Since the meaning of a sentence is determined by the semantical rules of the semantical system to which they belong, it seems that the concept of L-truth agrees with the traditional concept of "analytic" which is taken as its explicandum. What was given before by Carnap as a definition of analyticity, that is, when "analytic" is defined in terms of the semantical rules of a semantical system alone, is now viewed not as a definition of "analytic" but as "an informal formulation of a condition which any proposed definition of L-truth must fulfill in order to be adequate as an explication of our explicandum."¹ Thus the definition of "analytic" or L-truth, as given by Carnap in terms of state-descriptions, is the following: "A sentence P_1 is L-true (in S) =_{Df} P_1 holds in every state-description (in S)."²

Now, the above theory of state-descriptions explains the notion of analyticity "only if the atomic statements of the language . . . are mutually independent."³ If this is not the case, then there will be in that language a state-

¹Ibid., p. 10. ²Ibid.

³Quine, From a Logical Point of View, p. 23.

description which will assign truth to two mutually dependent statements, such as "John is a bachelor" and "John is married", from which it follows that the statement "No bachelors are married" is synthetic and not analytic, since it will not be true or it will not hold in every state-description of that language. Thus when the semantical systems contain "extra-logical synonym-pairs, such as 'bachelor' and 'unmarried man'¹", the theory of states descriptions does not serve to clarify the notion of analyticity, for the knowledge of independence or dependence of the atomic sentences of that language presupposes knowledge of analyticity.

That the concept of L-truth does not clarify the meaning of "logical truth" or "analytic" as applied to statements of natural languages can be shown by a consideration of the determinables we use in order to define a class of co-determinate predicates. For Carnap's concept of L-truth as defined in terms of state-descriptions will not be of any help when philosophers disagree in calling a statement of a natural language logically true or not (analytic or logically true are used synonymously by Carnap). Pap shows this by taking as an example the statement "whatever is red, is colored", which is frequently used when philosophers discuss the nature of

¹ Ibid.

a priori truth. According to Pap, "the inference from 'x is red' to 'x is colored' does not have the form 'p and q, therefore p'".¹ For this reason some philosophers doubt that this statement is analytic in Kant's sense, while there is no doubt at all about the statement "whatever is square is equilateral". The relation between the species "square" and the genus "equilateral" can be analyzed in the following way: The addition of a differentia (rectangular parallelogram) to genus "equilateral" yields the species "square". But the same cannot be done in the case of the genus "colour" and the species "red", for we cannot specify any differentia which when added to genus "colour" will yield the species "red". The genus "colour" is called a "determinable" and the species "red" a "determinate", and there is no differentia which we can use in order to pass from the determinable "colour" to the determinate "red". Pap believes that "awareness of a common quality of a set of qualities is the same sort of abstraction as awareness of a common quality of a set of particulars; hence if it is true that two people must have acquainted themselves with the same set of denotata of the predicate if they are to attach the same meaning to the predicate, this

¹Pap, Semantics, p. 154.

would be true in one case as well as in the other."¹
This being the case, Pap says that if "red", "blue", etc., are a family of unanalyzable determinate qualities under the determinable "colour" then "colour" itself is "an unanalyzable, or only ostensively definable, term."² If this analysis is correct, then the determinate "red" and the determinable "coloured" are two logically independent predicates and if both of them belong to the primitive predicates of a language, some of its state-descriptions will contain such conjunctions as "Red(a) and not-Coloured(a)". It follows that the statement "whatever is red, is coloured" does not hold in every state-description of that language, therefore, it is not an L-truth. This difficulty can be avoided by not including in the primitive predicates of a language both the determinate predicates and their determinables, but then Carnap's explication of "logically true" or "analytic" cannot resolve disagreements as to "whether there are entailments that are not analytic, or necessary truths that are not logical truths"³, for "it would follow that natural languages admit the expression of necessary truths which either cannot be expressed at all in a Carnapian language system or else are not logical truths."⁴

¹Ibid., p. 155.

²Ibid.

³Ibid.

⁴Ibid., p. 156.

Pap criticizing further Carnap's theory of state-descriptions says that the explication of logical truth in terms of state-descriptions in a semantical system, makes use of absolute concepts of "possibility" and "necessity", since the relativization of logical truth to a language system raises the question: What is the best linguistic reference-frame which will give adequate explications of the logical concepts which are not clear and distinct in natural languages? Now the requirements for choosing an adequate linguistic reference-frame make use of modal judgments which are outside that linguistic reference-frame. State-descriptions represent, according to Carnap, Leibnitz's possible worlds. Since Carnap says that a state-description gives us "a complete description of a possible state of the universe of individuals with respect to all properties and relations expressed by predicates of the system"¹, we can fairly well say that a state-description is a description of a possible world. State-descriptions do not make that world possible, but we must find out whether the world which^a state-description describes is really possible. Thus in our choice of an adequate linguistic reference-frame, in which a definition of "state-description" is to be given,

¹ Carnap, Meaning and Necessity, p. 9.

the statement "'S is a state-description in L' must entail the statement] 'S is a description of a possible world'"¹, hence, before we construct any linguistic reference-frame we must know what worlds are possible. And this leads us to Carnap's requirement of logical independence. For, as Carnap pointed out, if in our linguistic reference-frame the predicates "square" and "equilateral" are among its primitive predicates, which have the characteristic that the second is entailed by the first, then some state-descriptions in that language system will be inconsistent, since they will contain the conjunction "x is a square and x is not an equilateral." Thus the consistency of state-descriptions made Carnap formulate the requirement of simplicity, according to which the properties designated by the primitive predicates must be simple: "the qualities and relations designated by the primitive predicates must not be analyzable into simpler components."² For, to state another example which will show the necessity of the requirement of simplicity, if "raven" and "black" are among the primitive predicates of the language system, then we could obtain such conjunctions as "x is a raven and not-black"; but in such a case the state-description which contains the above conjunction

¹ Pap, Semantics, p. 408.

² Rudolf Carnap, "On the Application of Inductive Logic," Philosophy and Phenomenological Research (September, 1947), 136.

would be inconsistent. This would be the case if the complex predicate "raven" is analyzed into the components "black and something else". But in order to state the requirement of simplicity, the concept of entailment or the concept of possibility must be used: "for any two primitive properties P and Q, it is possible that something have P without having Q, and it is possible that something have Q without having P."¹ But even the requirement of simplicity does not guarantee that a state-description describes a possible world. This was shown before in the use of a set of determinate qualities contained in the language system under a common determinable, which is also contained in that language system. For example, if "green" is to be included as a primitive predicate, then "red" is also as good a predicate as "green", but if we accept both in our linguistic reference-frame, then we get state-descriptions containing the conjunction "x is green and x is red", but these state-descriptions would be inconsistent. This incompatibility of primitive predicates made Carnap formulate the requirement of compatibility of primitive predicates: "select no more than one primitive predicate per family of related predicates."² But in stating this requirement, a modal judgment is used which is outside the linguistic reference-frame which purports to explicate the concept of "logical truth" or "analytic". This judgment is the following: "for any properties P and Q which are designated by primitive

¹Pap, Semantics, p. 408.

²Ibid.

predicates, it is possible that a thing have both P and Q."¹

3. Meaning Postulates

Carnap recently modified his explication of analyticity by incorporating "meaning postulates" in the semantical systems. We have seen that Carnap divides all statements into two kinds. Those whose truth is based upon meaning and those whose truth is dependent on the facts of the world. He accepts Quine's division of the statements of the first kind into two classes: (1) those whose truth is ascertained only by a consideration of the logical particles contained in the statement, and (2) those whose meanings of the descriptive words are involved in a consideration of their truth-value. Statements of the first class are called logically true, while those of the second class are called analytic. The concept of analyticity is now explicated by using meaning postulates. The word "postulate" is not to be taken here as being synonymous with the word "axiom". The semantical system in which the explication of analyticity will take place, has the following characteristics; It contains the usual logical connectives, and quantified individual variables. The descriptive signs in the system consist of individual constants ("a", "b", etc.) and of

¹ Ibid.

primitive descriptive predicates ("B", "M", etc., for the properties of "Bachelor" and "Married" respectively). To the statement of the natural language "If Jack is a bachelor, then he is not married" corresponds in the semantical system to the following statement " $Bb \supset -Mb$ ". Now the definition of L-truth in the semantical system given in terms of state-descriptions (that is, a sentence P_1 is L-true in a semantical system if P_1 holds in all state-descriptions) does not cover the above given example, thus we do not yet have an adequate explication of analyticity. This can be achieved by laying down the following meaning postulate: " $(x)(Bx \supset -Mx)$ ". What the above postulate states is the incompatibility of the two properties and this is what is essential for analyticity. If the primitive predicates of a system are logically related (i.e. in the case when one implies another, or one is incompatible with another), then meaning postulates must be provided for all such relations, if we want to explicate adequately the concept of analyticity. The incompatibility of Bachelor and Married is not a matter of knowledge but of decision. The philosopher's knowledge that the English words "bachelor" and "married" are incompatible may influence his decision if he has the intention to reflect in his system some of the meaning relations of English words. In this particular case the

influence would be relatively clear, but in other cases it would be much less so."¹ The philosopher does not have to make an elaborate search in order to find out whether two predicates are incompatible or not. His task is to decide whether the predicates in question are to be incompatible, or that the relation of logical implication holds between them. Thus according to Carnap, philosophers are free to choose their postulates "guided by their intentions with respect to meanings, i.e. the ways of use of the descriptive constants,"² and not by any consideration of the facts of the world. Now if C represents the conjunction of those meaning postulates accepted in the semantical system S, then the concept of analyticity, as applied to statements whose truth is logical and to those whose truth is analytic, can be explicated as follows: "A statement P_1 in S is L-true with respect to C = Df P_1 is L-implied by C (in S)."³ Here "L-true with respect to C" is taken as the explicatum of the explicanda "logically true" and "analytic".

Carnap in order to avoid difficulties arising from primitive relational predicates, accepted in his semantical systems meaning postulates for relations. One difficulty which forced him to do that was the following: Let the relation Warner be designated by "W". This primitive predicate possesses the following

¹Carnap, Meaning and Necessity, p. 225.

²Ibid.

³Ibid.

structural properties in virtue of its meaning: it is transitive, irreflexive and asymmetric. Now the "statements 'Wab.Wbc.-Wac', 'Wab.Wba', and 'Waa' are false due to their meanings,"¹ and the state-descriptions which contain one of those statements as subconjunctions are also false. This being the case "they do not represent possible cases."² This difficulty can be met by either not including primitive relations in the language system, maintaining thus the requirement of the logical independence of all atomic statements, or by giving up the requirement of logical independence and including dependent predicates and relational ones in the semantical system. But in this case the state-descriptions will be restricted to those which represent possible cases "by stating meaning postulates or other equivalent rules."³ The meaning postulates which are laid down in the case of the of the primitive predicate "W" for its structural properties of transitivity, irreflexivity, and asymmetry are the following:

- (a) " $(x)(y)(z) (Wxy \cdot Wyz \supset Wxz)$ " for transitivity
- (b) " $(x) \neg Wxx$ " for irreflexivity
- (c) " $(x)(y) (Wxy \supset \neg Wyx)$ " for asymmetry⁴

The structural property (c) is L-true with respect to (a) and (b).

¹Ibid., p.227.

²Ibid.

³Ibid.

⁴Ibid.

According to Carnap, the above logical statements are a form of semantical rules which he calls meaning postulates, and it is also possible, he holds, to regard some other rules (explicit and contextual definitions) and some formulae (the formula of a recursive definition of an arithmetical functor) as special kinds of meaning postulates.

We have just said that Carnap views the meaning postulate "the relation warmer is asymmetrical" as a rule. Now if it is the case that a certain experienced relation is designated by the word "warmer", and it is decided to observe the rule to designate such similar experiences with the same word, then the use of the word "rule" in the above context is correct. But once this is done and we have adopted the rule, "we are no longer free to rule that the relation warmer is to satisfy such and such axioms--or rather it is senseless to speak of ruling about the properties of a relation."¹ For when we assert that "the relation warmer is asymmetrical" we decide to use the word "warmer" to designate the relation warmer, but it is not we who decide to give the characteristic of asymmetry to the relation warmer. We just express our belief that the relation warmer is asymmetrical. This being the case we can still ask whether the statement

¹Pap, Semantics, p. 109.

"the relation warmer is asymmetrical" is necessary or contingent. We notice also that according to this modification of the explication of analyticity in terms of meaning postulates, any empirical law can become analytic by an arbitrary choice of meaning postulates, since the choice of meaning postulates is "guided not by their beliefs concerning facts of the world but by their intentions with respect to meaning, i.e. the ways of use of the descriptive constants."¹ Thus if someone asks what we mean by "red", to take Carnap's example, we may say "red is, at any rate a colour" or "red is the property shared by all the flags now on this building." But "the former proposition is necessary and the latter contingent."² This shows that the restriction which Carnap imposes upon the motivation of a choice of a meaning postulate is insufficient to rule out the possibility that contingent statements might be elected as meaning postulates.

What follows from the above exposition of Carnap's explication of analyticity in terms of semantical rules, state-descriptions, and meaning postulates, and the criticisms brought against it, is that Carnap did not succeed in clarifying the notion of analyticity with his artificially constructed semantical systems. And as we have pointed out,

¹Carnap, Meaning and Necessity, p. 225.

²Pap, Semantics, p. 411.

the difficulty created by a consideration of the determinables and the determinates, shows that there truths which, although they are necessary, are not logical truths. To repeat what was written before: Carnap's explication of "analytic" in terms of state-descriptions cannot resolve disagreements as to whether there are "necessary truths that are not logical truths".¹ Thus the possibility of synthetic a priori propositions remains open, for propositions like "whatever is red, is colored", although synthetic, are necessary, and their necessity cannot be explained within Carnap's semantical systems.

The above can be supported also by giving the example of the primitive relation warmer, which was mentioned above in the case of the explication of analyticity in terms of meaning postulates. We have arrived at the conclusion that it is not we who decide to give the characteristic of asymmetry to the relation warmer. And we can "still ask whether the statement 'the relation warmer is asymmetrical' is necessary or contingent."²

We conclude that Carnap has failed in his attempt to reduce all propositions to two classes, namely, those which are L-true and those which are F-true. For there are propositions which are necessary in a different sense from that of logically necessary, and their necessity cannot be accounted for in terms of their analyticity, for these propositions are not analytic.

¹Ibid., p. 155.

²See p. 103.

CHAPTER III

PRAGMATIC ANALYSTS: THE QUESTION OF WHETHER THERE ARE SYNTHETIC A PRIORI PROPOSITIONS DOES NOT ARISE

We now are going to consider the views on the analytic-synthetic distinction of some of those philosophers who can be called pragmatic analysts, and the relevance of these views to the problem of the synthetic a priori. The pragmatic analysts are empiricists and their primary interest is "the philosophical interpretation of scientific inquiry."¹ The main characteristic of their views is the rejection of the sharp distinction between analytic and synthetic statements, and their insistence "upon a pragmatically oriented continuum of statements ranging between analytic and synthetic limits."²

We will deal first with W. V. O. Quine's views and then with those of Nelson Goodman.

I

According to Quine, all our knowledge or the totality of our beliefs can be expressed in a class of statements which

¹Thomas English-Hill, Contemporary Theories of Knowledge (New York: The Ronald Press Company, 1961), p. 476.

²Ibid.

are accepted as true. The truth value of some members of the class of these statements is never questioned, unless it conflicts with experience. In such a case we redistribute truth-values over those statements which are affected by the conflict with experience. Thus the need for the reevaluation of some statement arises. This reevaluation can be quite extensive depending on the logical interconnections of the statement conflicting with experience with other members of the system. But the total system of statements "is so underdetermined by . . . experience,"¹ that when a conflict with experience occurs, or as Quine puts it, "in the event of a recalcitrant experience,"² we are not restricted in our choice of the statements which we shall reevaluate. Quine speaking metaphorically, sees science as "a field of force whose boundary conditions are experience."³ There is no direct connection between particular experiences and particular statements found in a distance from the boundary conditions of the field. These are linked only "indirectly through considerations of equilibrium affecting the field as a whole."⁴ These statements in which the totality of our knowledge is registered have two important characteristics. First, any statement of the system

¹ Quine, From a Logical Point of View, p. 42.

² *Ibid.*, p. 43.

³ *Ibid.*, p. 42.

⁴ *Ibid.*, p. 42.

"can be held true what may,"¹ and second "no statement is immune to revision."² The first characteristic can be achieved (1) by making "drastic . . . adjustments"³ in the experiential periphery or the interior of the field, and (2) by dismissing a recalcitrant experience (that is, an experience which demands a denial of an accepted statement or statements) as hallucinatory, and (3) by changing the logical laws which are "simply certain further statements of the system."⁴ Even these laws are not immune to revision.

There are certain statements in the system which are closely related to particular experiences in the sensory periphery of the field. But this relation is nothing more than a "loose association reflecting the relative likelihood , in practice, of our choosing one statement rather than another for revision in the event of recalcitrant experience."⁵ These statements which are closely related to particular experiences in the sensory periphery of the field "are felt . . . to have a sharper empirical reference than highly theoretical statements of physics or logic or ontology."⁶ What follows from this view is that "it is misleading to speak of the empirical content of an

¹Ibid., p. 43.

²Ibid.

³Ibid.

⁴Ibid., p. 42.

⁵Ibid., p. 43.

⁶Ibid., p. 44.

individual statement- especially if it a statement at all remote from the experiential periphery of the field. Furthermore it becomes folly to seek a boundary between synthetic atatements, which hold contingently on experience, and analytic statements, which hold come what may."¹ In general Quine's thesis can be expressed as follows: The use of the analytic-synthetic distinction can be understood only in terms "of varying distances from a sensory periphery."² This is Quine's positive thesis on the analytic-synthetic distinction. His negative thesis is that the distinction of the analytic -synthetic is a distinction of degree and not in kind. We are going now to see Quine's criticisms of the traditional view of the synthetic and the analytic.

Quine finds Kant's definition of analyticity inadequate because it applies to statements of the subject-predicate form only, and the word "contained" which occurs in the definition is metaphorical. He restates Kant's definition thus: "a statement is analytic when it is true by virtue of meanings and independently of fact."³ This definition presupposes the concept of meaning. This concept must be distinguished from the concept of naming , since singular terms, concrete or abstract, can name the same entity but differ in meaning. The same is true in the case of

¹Ibid., p. 43.

²Ibid.

³Ibid., p. 21.

general terms, for two general terms may have the same extension but not the same the same meaning, as it is the case with the general terms "creature with a heart" and "creature with kidneys." In general Quine separates meaning from reference. "The main concepts in the theory of reference are truth, naming, denotation (or truth-of), and extension."¹ But "the primary business of the theory of meaning [is] the synonymy of linguistic forms and the analyticity of statements."² Thus we are confronted again with the problem of analyticity.

Quine divides analytic statements into two classes: (1) the class of logical truths, and (2) the class of those statements which can be converted into logical truths by putting synonyms for synonyms. For example, the statement "no bachelor is married" can be turned into the statement "no unmarried man is married" by putting in the place of the word "bachelor" its synonym "unmarried man". It is obvious that for the definition of the second class of statements, the notion of synonymy is presupposed as well as the notion of logical truth. A logical truth is defined by Quine as "a statement which is true and remains true under all reinterpretations of its components other than the logical particles."³ An analytic

¹Ibid., p. 130.

²Ibid., p. 22.

³Ibid., pp. 22-23.

statement of the second class is defined as "any statement which, by putting synonyms for synonyms is convertible into an instance of a logical form all of whose instances are true;"¹ or an analytic statement is any statement which "can be turned into a logical truth by putting synonyms for synonyms."² Since this definition depends on the notion of synonymy, the second class of analytic propositions is not properly characterized, for the notion of "synonymy" is itself in need of clarification. As far as the first class of statements is concerned, Quine does not find any major difficulty with it.

A way of meeting the above mentioned difficulty is by saying that analytic statements of the second class are turned into those of the first class by definition, that is, "'bachelor' is defined as 'unmarried man'."³ But Quine asks "How do we find that 'bachelor' is defined as 'unmarried man'? Who defined it thus, and when?"⁴ The lexicographer's or the philosopher's or the scientist's definitions are either reports of an observed synonymy or an affirmation of a relation of synonymy. But "definition" in this case "cannot be taken as the ground of synonymy,"⁵ for all the above definitional activities report preexisting synonymies. Another kind of definitional activity is the so-called

¹Willard V. Quine, "Notes on Existence and Necessity," Semantics and the Philosophy of Language, ed. Leonard Linsky (Urbana: The University of Illinois Press, 1952), p. 84.

²Quine, From a Logical Point of View, p. 23.

³Ibid., p. 24. ⁴Ibid. ⁵Ibid. Ibid.

explication. By this type of definitional activity the meaning of the definiendum is refined or supplemented. But in this case also we depend on "other preexisting synonymies."¹ A type of definition which does not rest on preexisting synonymies is what is called abbreviational definition. The synonymy, here, of the definiendum with the definiens is created by definition. But this is not always the case, as we have seen above, for in those other cases definition rests on synonymy. Thus "definition" does not clarify or explain synonymy. We have to look elsewhere.

It might be the case that two linguistic expressions are synonymous if they are interchangeable "in all contexts without change of truth-value--interchangeability, in Leibniz's phrase, salva veritate."² But synonyms are not everywhere interchangeable salva veritate, for interchangeability salva veritate does not apply "to fragmentary occurrences inside of a word."³ For example, the expressions "bachelor" and "unmarried man" are not everywhere interchangeable salva veritate. To say that "Mr. X has the degree of Bachelor of Arts" is not the same as saying "Mr. X has the degree of an unmarried man of arts." This being the case, and taking also into consideration that here we are interested in cognitive synonymy and not

¹ Ibid., p. 25.

² Ibid., p. 27.

³ Ibid., p. 28.

in "synonymy in the sense of complete identity in psychological associations or poetic quality"¹ we ask whether "interchangeability salva veritate (apart from occurrences within words) is a strong enough condition for synonymy"² or in other words "whether such interchangeability is a sufficient condition for cognitive synonymy."³ An argument purporting to prove this is shown by Quine to be circular. The argument is the following:

The statement:

- (4) Necessarily all and only bachelors are bachelors is evidently true, even supposing 'necessarily' so narrowly construed as to be truly applicable only to analytic statements. Then, if 'bachelor' and 'unmarried man' are interchangeable salva veritate, the result:
- (5) Necessarily all and only bachelors are unmarried men of putting 'unmarried man' for an occurrence of 'bachelor' in (4) must, like (4), be true. But to say that (5) is true is to say that [all and only bachelors are unmarried men] is analytic, and hence that 'bachelor' and 'unmarried man' are cognitively synonymous.

The above argument supposes we are working with a language rich enough to contain the adverb 'necessarily', this adverb being so construed as to yield truth when and only when applied to analytic statement. But can we condone a language which contains such an adverb? Does the adverb really make sense? To suppose that it does is to suppose that we have already made satisfactory sense of 'analytic'. Then what are we so hard at work on right now?⁴

Quine concludes that "interchangeability salva veritate is meaningless unless relativized to a language . . ."⁵ Such a

¹Ibid. ²Ibid., p. 28. ³Ibid., p.29.

⁴Ibid., pp. 29-30. ⁵Ibid., p. 30.

language which contains (1) one-place predicates, (2) many-place predicates, and the rest of which is logical, is extensional in the following sense: "any two predicates which agree extensionally (that is, are true of the same objects) are interchangeable salva veritate."¹ But as we have said previously the meaning of a term is different from its extension. Thus the criterion of interchangeability salva veritate is no "assurance of cognitive synonymy"² which would explain analyticity. If the words "bachelor" and "unmarried man" are interchangeable salva veritate in an extensional language, then the statement "all and only bachelors are unmarried men" would be true, but we do not know whether the extensional agreement here of "bachelor" and "unmarried man" "rests on meaning rather than on accidental matters of fact."³ What is needed is the equation of the synonymy of "bachelor" and "unmarried man" with the analyticity of the above statement and merely with its truth.

Since synonymy does not help in the clarification of analyticity, Quine turns his back on it and takes up the problem of analyticity again. This time he starts by saying that his ignorance as to whether the statement "everything green is extended" is analytic or not, is not due to an incomplete

¹Ibid.

²Ibid., p. 31.

³Ibid.

understanding of the meanings of the words "green" and "extended". The trouble is with the word "analytic". There are philosophers who believe that the difficulty of distinguishing between analytic and synthetic statements in ordinary language, lies in the vagueness of ordinary language, and this difficulty is removed when a precise artificial language is constructed with explicit "semantical rules". We have with this approach to the problem of analyticity, in our previous chapter, when we were considering Carnap's explication of analyticity. There we mentioned Quine's criticisms of this view. Here we only mention the conclusion: The semantical rules which determine the analytic statements of an artificial language "are of interest only in so far as we already understand the notion of analyticity; they are of no help in gaining this understanding."¹

Another way in which "analytic" is defined is in terms of the verification theory of meaning. This theory states that the "meaning of a statement is the method of empirically confirming or infirming it."² Since analyticity was defined by Quine in terms of synonymy and logical truth, the definition of synonymy which the verification theory gives is the following: "two statements are synonymous if and only if they are alike in point of method of empirical confirmation or infirmation."³

¹Ibid., p. 36. ²Ibid., p. 37. ³Ibid.

An analytic statement is defined as a statement which "is synonymous with a logically true statement,"¹ while in the case of each synthetic statement there is a "unique range of possible sensory events"² which might confirm or infirm it. Quine asks: "What . . . is the nature of the relation between a statement and the experiences which contribute to or detract from its confirmation?"³ An answer to this is that of radical reductionism, the view that the relation "is one of direct report."⁴ According to this view, each individual statement can be fully confirmed or infirmed in isolation from other statements. Thus it follows that there is "a limiting kind of statements which is vacuously confirmed, ipso facto, come what may; and such a statement is analytic."⁵ But Quine believes that it is not the case that statements can be confirmed or infirmed in isolation: "our statements about the external world face the tribunal of sense-experience not individually but as a corporate body."⁶ Thus the analytic-synthetic distinction resists "any straightforward drawing."⁷

Quine believes that truth "depends on both language and extralinguistic fact."⁸ This being the case one might analyze the truth of any statement into a linguistic and a factual component, and he might say that analytic propositions are those

¹Ibid., p. 38. ²Ibid., p. 40. ³Ibid., p.38.

⁴Ibid. ⁵Ibid., p. 41. ⁶Ibid. ⁷Ibid. ⁸Ibid.

whose factual component is null, and synthetic propositions are those whose factual component is not null. But Quine writes: "it is nonsense, and the root of much nonsense, to speak of a linguistic component and a factual component in the truth of any individual statement. Taken collectively, science has its double dependence upon language and experience; but this duality is not significantly traceable into the statements of science taken one by one."¹ Thus he rejects the view that there is a clear cut distinction between analytic and synthetic statements. Quine was led to such a conclusion by the unsuccessful endeavours of philosophers to draw a sharp distinction between the analytic and the synthetic, as it was shown by his criticisms of the views of those who supported such a distinction.

It is written above that according to Quine "no statement is immune to revision."² Since it is a characteristic of a priori knowledge to be immune to revision, that is, a statement which is a priori is universally and necessarily true, and experience cannot possibly disconfirm it so that no recalcitrant experiences can question its truth, the question "Are there synthetic a priori propositions?" does not arise at all in Quine's philosophy. The reason is that there are no a priori statements according to Quine. We cannot even ask

¹Ibid., p. 42.

²Ibid., p. 43.

such a question in Quine's philosophy, since for him all statements are empirical, for experience has a bearing on them. Thus to ask "are there synthetic a priori propositions?" is to ask "are there empirical propositions which are non-empirical?" But this question makes no sense. The objection might arise that our criticism does not touch Quine's theory at all, for according to him, the question "are there synthetic a priori statements?" cannot be applied to isolated statements, since the truth of "our statements about the external world face the tribunal of sense-experience not individually but only as a corporate body."¹ But let us take the whole system of our knowlegde and view it as a corporate body. Since this would be empirical, according to Quine, it would not be a priori and thus not necessary. Therefore we are justified in saying that the question "are there synthetic a priori statements ?" does not arise in Quine's philosophy.

We have seen that Quine defines analyticity partly in terms of logical truth and presupposes that the definition of logical truth which he gives is an adequate one, and proceeds in defining analytic truth as truth which can be "turned into a logical truth by putting synonyms for synonyms."² A clear notion of the concept of logical truth and the concept of

¹ Ibid., p. 41.

² Ibid., p. 23.

synonymy will render the definition of analyticity an adequate one in the sense that whenever we are confronted with a proposition and we inquire whether it is analytic or not, we will be able to decide the issue. Quine inquires into the notion of synonymy and shows that we do not possess any adequate definition of it, and also that we do not have any good criteria of the synonymy of two concepts or expressions. Quine does not show that it is impossible for any two terms to be synonymous, but merely shows that we do not have any adequate definition or criteria of synonymy. But granted that the concept of synonymy is clear, we still do not possess any adequate definition of analyticity for the definition of logical truth, as given by Quine, and in terms of which the concept of analyticity is defined, is also inadequate. This is the case, since Quine's definition of logical truth does not give us a decision procedure for determining whether a certain statement is logically true or not. That is, according to this definition, we can decide whether a statement is logically true or not, only if we already know that this statement is true, and also if we have at our disposal a list of what are called "logical constants". This being the case, this definition cannot determine whether a statement whose truth-value is unknown, is logically true.¹

¹Pap, Semantics, p. 131.

Quine's definition of logical truth raises also the following important question: What is the criterion by which we distinguish logical constants from non-logical constants? Quine writes: "If we suppose a prior inventory of logical particles, comprising 'no', 'and', 'if', 'not', 'then', 'and', etc., then in general a logical truth is a statement which is true and remains true under all reinterpretations of its components other than the logical particles,"¹ and elsewhere he writes, when he defines analyticity, the following: "given the notion of synonymy, given also the general notion of truth, and given finally the notion of logical form (perhaps by an enumeration of the logical vocabulary), we can define an analytic statement as . . . "², that is, he gives a definition of analyticity in terms of logical truth and the definition of logical truth is given by an enumeration of logical constants, which definition does not enlighten us as to the meaning of the concept of logical truth. Definitions by enumeration tell us nothing about the meaning of the definiendum.

As far as Quine's positive thesis is concerned, I believe that this thesis is false. For, I think that there are propositions which are immune to revision, for the simple reason that we cannot ever have any recalcitrant experiences which will put us in the situation of abandoning statements which we have already accepted as true. For example, I know that I have

¹Quine, From a logical Point of View, p. 22.

²Quine, Semantics and the Philosophy of Language, p. 84.

two hands, that the country in which I now live is the Lebanon, that Beirut is now the capital of Lebanon, that I see a map of Greece hung on the wall of my room, that I now possess a copy of Moore's Principia Ethica, that two and two make four, that I cannot be at two places at the same time, etc. According to Quine these statements are not immune to revision. Some experiences might make me abandon these statements and incorporate some others in the system of my beliefs. But, I believe that no recalcitrant experiences can make me abandon these statements for no matter what experiences I might have, they will not have the same bearing on the truth of the statements which I now believe, as that of the experiences which make me hold that the statement, for example, "I see a map on the wall of my room now" is true. A proponent of Quine's theory might object that the above statements which I believe to be immune to revision are practically but not logically immune to revision. Let us take an example: Suppose that there is a pencil on my table and I report this fact by saying "there is a pencil on my table". I test the above statement by taking the pencil and writing with it, etc., and thus I become certain about the truth of the above statement. After a week I take the pencil from my table and try to write with it, but to my surprise I find that it is not a pencil but an imitation of a pencil. In this case I have either to reject the statement

"There is a table on my table" which I believed a week before, or to keep the above statement and say that this is not the pencil I tested a week ago. Somebody might have replaced it, etc. Quine would say that the statement which I have accepted as true is not immune to revision, for, by making "drastic enough adjustments"¹ in the system of my knowledge, I can deny the above statement and accept as true the following statement: "What I thought of as being a pencil on my table, was nothing but an imitation of a pencil." This is, I think, the sense in which no statement can be logically immune to revision. But, I believe that there is no harm if this is done, for, if we make "drastic enough adjustments" we will be speaking about the same things in different languages. Such a case would arise, for example, when we would teach a child to say "I have three hands" instead of saying "I have two hands", and there would be no harm if the above statements refer to the same things.

Thus I believe that Quine does not say anything philosophically significant when he says that "no statement is immune to revision"² but the common-sense truth that we can speak about the same things in different languages.

II

In this section we shall deal with Goodman's views on synonymy, the analytic-synthetic distinction, and necessity. A critical evaluation of his views will follow.

Goodman distinguishes all statements into those which are repetitive and those which are non-repetitive. Repetitive statements have the form "All A's are A's" in which the subject is predicated to itself, while in non-repetitive statements subject and predicate are different. These statements have the form "All A's are B's". Goodman holds that "no non-repetitive statement will be analytic"¹ and "a non-repetitive statement is never absolutely necessary."² Given, for example, the statement "a triangle is a trilateral" we can say that it is more or less nearly analytic or more or less nearly necessary. The implication of this thesis is that there is no sharp distinction between analytic and synthetic statements and also between those which are necessary and those which are contingent. The distinction in kind disappears and what takes its place is a distinction in degree. These views are based on Goodman's teaching that no two different predicates can have the same meaning, and they are directed against the view which defines an analytic statement as a statement of the form "All A's are B's" in which the meaning of B is included in the meaning of A. Goodman tries to show that no

¹Nelson Goodman, "On Likeness of Meaning," Semantics and Philosophy of Language, ed. Leonard Linsky (Urbana: The University of Illinois Press, 1952), p. 74.

²Ibid.

predicate is "meaning-included"¹ in another, since there is "an A-description that is not a B-description, and a B-description that is not an A-description."² He arrives at the conclusion that "no two different words have the same meaning"³ by explaining difference of meaning without referring to intensions, modalities, concepts, criteria in mind, etc., but only to the terms in question and their extensions. According to him, two terms or names or predicates of an ordinary language have the same meaning "if and only if (a) they apply to exactly the same objects [that is, they have the same extension, or in his terms, their primary extension is the same], and (b) each compound term constructed by combining certain words with either of the terms in question applies to exactly the same objects as the compound term constructed by combining the same words in the same way with the other of the terms in question."⁴ The extension of these compounds is called secondary extension. The criterion of synonymy is formulated by Goodman as follows: "Two terms have the same meaning if and only if they have the same primary and secondary extension,"⁵ or negatively, two terms differ in meaning if they do not agree in their secondary

¹ Ibid. ² Ibid. ³ Ibid., p. 73.

⁴ Nelson Goodman, "On Some Differences About Meaning," Philosophy and Analysis, ed. Margaret Macdonald (Oxford: Basil Blackwell, 1954), pp. 63-64.

⁵ Goodman, Semantics and the Philosophy of Language, p. 71.

extension. For example, the terms "centaur" and "unicorn" agree in their primary extension, for both apply to nothing, but they differ in their secondary extension, that is, if we construct the compound predicate "centaur-picture" by combining the word "picture" with the word "centaur", then this predicate does not agree extensionally with the compound predicate "unicorn-picture" which is constructed by adding the same word "picture" to that of "unicorn", for "centaur-pictures" are not "unicorn-pictures" and vice-versa. In cases where there are terms for which there are no P-pictures ("P" being the term or predicate) we may have as the secondary extension of "P" the class of objects which the compound predicate "P-diagram", "P-symbol", etc., applies to. Goodman writes:

Indeed actual word-inscriptions are as genuine physical objects as anything else; and so if there is such an actual physical inscription that is a P-description and is not a Q-description, or vice versa, then "P" and "Q" differ in their secondary extensions and thus in meaning.¹

Given any two predicates, for example, "centaur-description" and "unicorn-description" the former applies while the latter "does not apply to an inscription of 'a centaur that is not a unicorn."² Also the term "trilateral" and the term "triangle" differ in meaning because the phrase "trilateral that is not

¹ Ibid., p. 72.

² Ibid.

a triangle" is a trilateral-description and not a triangle-description. Goodman says that he cannot define the word "description" precisely, but a complete definition is not needed. Since we can say of any two different words or predicates "x" and "y", that "x-description" applies to the phrase "an x that is not a y", while "y-description" does not apply to it, Goodman concludes that "no two different words have the same meaning"¹, and this being the case, no one predicate can be said to be contained in another, thus there cannot be any analytic propositions, and not only this, but as Goodman writes: "This will be enough to convince many of us that likewise a non-repetitive statement is never absolutely necessary, but only more or less nearly so."²

Goodman writes the following as far as the definition of synonymy is concerned:

It is commonly supposed that a satisfactory definition of synonymy must meet two requirements: that some predicates be synonymous with others, and that either of a pair of synonyms be replaceable by the other in all non-intensional contexts without change of truth-value. But we have seen that these two requirements are incompatible.³

They are incompatible because, as we have seen, "there are no two predicates such that each can be replaced by the other in every sentence without changing the truth-value,"⁴ and because

¹Ibid., p. 73.

²Ibid., p. 74.

³Ibid., p. 73.

⁴Ibid.

there are no two different predicates in a natural language which have the same meaning. Since the above requirements are incompatible Goodman suggests that "the sound course seems to be to construe degree of synonymy as, so to speak, degree of inter-replaceability . . . and to recognize that the relation of exact synonymy between diverse predicates is null."¹ And Goodman concludes that although two predicates never have the same meaning, we can say that "they have greater or lesser degree, or of another kind, of likeness of meaning."²

Goodman reached the conclusion that no two terms in a natural language are synonymous by changing the meaning of "interreplaceability" "in all non-intensional contexts,"³ or what is the same, the meaning of "extensional interchangeability."⁴

We have seen that Goodman speaks of "a secondary extension of a term." By this he means the extension of a compound of the term in question, which is constructed by combining certain words with that term, and also with the term supposed to be synonymous with it. With the help of this device he proves that no two terms have the same extension. By the expression "the extension of a predicate" he means not only the extension of the term (primary extension) but also its secondary extension. This is the change he has made to the meaning of the expression "extensional

¹Ibid., pp. 73-74. ²Ibid., p. 73. ³Ibid.

⁴Fap, Semantics, p. 297.

interchangeability". But all he achieves with device is another way of saying that two distinct terms are distinct. This can be shown as follows: Goodman would say that "The Morningstar that is not the Eveningstar" is a Morningstar distinction and not an Eveningstar description. But why would he say that? Suppose that Goodman meant by "Morningstar-description" "description of the Morningstar". Since, according to him, Morningstar-descriptions are not Eveningstar-descriptions, he would have to give a reason why he asserts that, and the only reason is that "Morningstar" is not synonymous with "Eveningstar". If they were synonymous, then "description of the Morningstar" would be synonymous with "description of the Eveningstar". It follows that "Morningstar-description" and "Eveningstar-description" since they are synonymous, they have the same extension, according to his criterion of synonymy. This is achieved by assuming that "Morningstar" is not synonymous with "Eveningstar", which assumption begs the question. But if it is supposed that Goodman meant by "Morningstar-description" "description containing 'Morningstar' as first term," then to say that "Morningstar-description" does not have the same extension as "Eveningstar-description" is equivalent to saying that a

description which has "Morningstar" as first term does not have "Eveningstar" as first term, which is another way of saying that "Morningstar" is distinct from "Eveningstar". This line of criticism, which is due to Pap¹ clearly shows that to say that every two terms or predicates of a natural language differ in their secondary extension, is to say that every two terms which are distinct are distinct.

Goodman's thesis that non-repetitive statements are never absolutely necessary "but only more or less nearly so",² calls for criticism too. From the fact that analyticity is gradated, if it is gradated, it does not follow that "logical necessity is itself a matter of degree."³ For, the view that analyticity is gradated, rests on the gradualistic character of synonymy, since synonymy enters into the definition of analyticity. If it is true that synonymy has a gradualistic character, then analyticity itself is a matter of degree. But the notion of synonymy does not enter into the definition of logical truth, for although synonymy relations help us to show that certain syllogistic principles are equivalent, the validity of these principles does not depend on synonymy relations and "since . . .

¹Pap, Semantics, p. 298.

²Goodman, Semantics and the Philosophy of Language, p. 74.

³Pap, Semantics, p. 299.

any logical principle would remain valid if it were written out in primitive notation, it cannot be said that logical truth even partly depends on synonymy relations."¹ Also, since synonymy is defined in terms of certain criteria of adequacy and it is admitted that "most criteria of adequacy are themselves necessary statements,"² to say that the necessity of "a statement can be known only on the basis of synonymy of certain expressions . . ." ³ involves a circle.

From the above criticisms we see that Goodman did not prove successfully his thesis that "no two different words have the same meaning."⁴ But the fact that his argument for proving this is not successful, does not mean that his thesis is wrong. It might very well be that synonymy is gradated.

But what is of importance to us, is not an exhaustive investigation of the possibility of a sharp distinction in kind between analytic and synthetic propositions, but the question as to whether such a view would make any difference in answering our question "are there any synthetic a priori propositions?" To this now we direct our attention.

Let us suppose that there is no sharp analytic-synthetic distinction. Then the propositions "an oculist is an eye-doctor" and "Mr, X is an oculist" would be of the same kind, and the

¹Ibid., p. 300. ²Ibid. ³Ibid.

⁴Goodman, Semantics and the Philosophy of Language, p. 73.

only difference between them as far as the determination of their truth is concerned, would be one of degree. The only meaning I can give to what I have just written is that the proposition "an oculist is an eye-doctor" might very well turn out to be false, that is, it would not be a contradiction[†] to say "an oculist is not an eye-doctor." I do not think that this would be the case, for in order to define analyticity, it is required that the same meanings are given to the terms which constitute the proposition by those who understand it. If different meanings are given to the terms which constitute the proposition at different times, or at the same time by different persons, or even by the same person, then the above given proposition might very well be false.

Let us take the proposition "whatever is red, is colored" and let it be understood in the same sense by those who hear, read, or write it, or make them understand it in the same sense. Of course, according to the gradualistic theory of the analytic-synthetic distinction, the denial of the above proposition is a false proposition and not a contradiction[†]. But even if the sharp analytic-synthetic distinction is admitted, the denial of that proposition would result in a false proposition and not in a contradiction, since that proposition would be synthetic and

† self-contradiction

not analytic. Now the following question arises: "Could it ever happen that this proposition would turn out to be false, provided the world remains the same as we know it, and we take care not to shift the meanings of the terms which constitute the proposition?" Whether synonymy is gradated or not, has nothing to do, I think, with the answer to this question. My answer to the above question is that it would never happen that the proposition "whatever is red, is coloured" might turn out to be false. In other words, the above proposition is a necessary one, but its necessity is not logical, for this proposition is not analytic. We conclude that even if there is no sharp distinction between analytic and synthetic propositions the question "are there synthetic a priori propositions?" can still be meaningfully asked and as we have seen it can be answered in the affirmative.

CONCLUDING REMARKS

This thesis was an attempt to answer the question: "Are there synthetic a priori propositions?" to which an affirmative answer has been given, after we had attempted a clarification of the basic concepts of the "a priori" and the "synthetic", which enter into the formulation of the above question.

We have seen that Kant's understanding of some concepts (namely, the concept of definition) used for the clarification of the above concepts, make this question unintelligible, although he had accepted the possibility of synthetic a priori judgments. For example, according to Kant, the propositions of mathematics, such as, " $7+5=12$ ", etc., the propositions of geometry, such as, "every equiangular triangle is equilateral", etc., the principles of physics, such as, "in all changes of the material world the quantity of matter remains unchanged," "in all communication of motion, action and reaction must always be equal," etc., are synthetic a priori.

The logical positivists rejected the possibility of

synthetic a priori knowledge and tried to account for the necessity and universality of a priori knowledge in terms of analyticity. But we found that there are certain propositions whose a priority cannot be explained in terms of analyticity, since these propositions are not analytic. Although the logical positivists rejected the synthetic a priori, the question "are there synthetic a priori propositions?" is not, according to them, an absurd question but a meaningful one.

In the philosophy of the pragmatic analysts our question does not arise for they reject a priori knowledge altogether, whether in the logical sense or in any Kantian-like sense.

We have seen also that the sharp analytic-synthetic distinction which was accepted by Kant and the logical positivists is rejected by the pragmatic analysts. In the case of the proposition which we have considered as being synthetic a priori, the problem of the sharp distinction between synthetic and analytic propositions makes no difference, for, that proposition, namely "whatever is red, is coloured", might be said to be closer to syntheticity than to analyticity. In my thesis I have interpreted the gradualistic view of analyticity as the view which states that the denial of any true proposition whatever

is false and not contradictory. This is why I have contended that the gradualistic theory of analyticity is irrelevant to the answering of the question "are there synthetic a priori propositions?" But if such an interpretation of the gradualistic view is entirely or partly rejected (a fact which I deem improbable), then the sharp distinction of the analytic and the synthetic is relevant in asking our question. For there are propositions, such as " $7+5=12$ ", which are thought by some philosophers to be synthetic, by others analytic. And if we agree that this proposition is more analytic than synthetic, and if we abide by the traditional definition of analyticity, then we cannot ask whether this proposition is a priori in a Kantian-like sense, for it would be a priori in the logically necessary sense. But I think that the gradualistic theory of analyticity has to be understood in the way I have interpreted it, for, if interpreted otherwise, it would run into grave difficulties, that is, it would be extremely difficult or rather impossible to formulate criteria by which a proposition will be judged as more analytic or more synthetic, and since, according to such criteria, the possibility of a proposition having equal amount of analyticity and syntheticity is not excluded, it would be impossible to ask the question "is this particular proposition synthetic a priori?" for, I do not understand what we would be asking by this question.

Our investigation has shown that propositions like "whatever is red, is coloured", "whatever is coloured must be extended", "whatever has shape has size", etc., are a priori not in the logically necessary sense, for these propositions are not analytic, but in a quite different sense of a priori, and we have seen that the certainty of these propositions cannot be accounted for in terms of the doctrines of logical positivists or those of the pragmatic analysts. What is common in the above propositions and to all a priori knowledge in general is that the denial of a priori propositions (other than the logically necessary propositions) results in false propositions and not in contradictory ones, and these propositions cannot be falsified by experience.

Kant writes:

Let us take the proposition ["whatever has shape has size"]. . . the concept of ["size"] lies entirely outside the other concept and signifies something different from ["shape"], and is not therefore in any way contained in this latter representation. How come I then to predicate of ["shape"] something quite different, and to apprehend that the concept of 'size' though not contained in it, yet belongs, and indeed necessarily belongs, to it? What is here the unknown =X which gives support to the understanding when it believes that it can discover outside the concept A a predicate B foreign to this concept, which it yet at the same time considers to be connected with it?¹

These questions set in another way the problem of the Critique of Pure Reason "How are a priori synthetic judgments possible?"² Kant explained this possibility by identifying the a priori with

¹Kant, Critique, p. 51.

²Ibid., p. 55.

+ self-contradictory

with the formal. But many philosophers were not satisfied with this identification. Scheler writes: "The identification of the 'a priori' with the 'formal' is a fundamental mistake of the Kantian doctrine."¹ The phenomenologists in general, reject Kant's account of the possibility of the synthetic a priori and think that the scope of such judgments is more inclusive. But although the phenomenologists believe that there are synthetic a priori propositions and although they have widened their scope, they do not seem to be disturbed by the problem of the Critique of Pure Reason, for they have not attempted "to explain their possibility."²

We have written before that Schlick instead of asking the question "How are a priori judgments possible?" he asks "Are the judgments actually synthetic and a priori which you take to be so?"³ and since he thinks that they are not, the question as to their possibility does not arise. But we have arrived at the conclusion that there are synthetic a priori propositions. Thus, Schlick would challenge us to show him how they are possible, for, he writes: "The defenders of the factual a priori, . . . have, I repeat, more reason than Kant to ask the question: 'How are synthetic a priori judgments possible?' . . . [and they] ought not to rest until [they] had clarified their puzzling existence, their possibility"⁴ especially when

¹ Schlick, Readings in Philosophical Analysis, p. 278.
quoting Scheler, Logische Untersuchungen, II, 2, p. 203.

² Ibid., p. 279.

³ Ibid., p. 280.

⁴ Ibid., p. 280.

they are not satisfied with Kant's answer.

But, this question and the critical evaluation of Kant's argument for the possibility of the synthetic a priori judgments constitute a project for further study.

BIBLIOGRAPHY

ANTHOLOGIES AND COMPILATIONS

1. Ayer, A. J. et al. The Revolution in Philosophy. London: Macmillan, 1956.
2. Feigl, H., and Brodbeck, M. (eds.). Readings in the Philosophy of Science. New York: Appleton-Century-Crofts, 1953.
3. Feigl, H., and Sellars, W. (eds.). Readings in Philosophical Analysis. New York: Appleton-Century-Crofts, 1949.
4. Flew, A. G. N. (ed.). Logic and Language (first series). Oxford: Blackwell, 1951.
5. _____. Logic and Language (second series). Oxford: Blackwell, 1953.
6. International Encyclopedia of Unified Science. Edited by O. Neurath and others: (combined ed.), vol. I in 2 parts. Chicago: University of Chicago Press, 1955.
7. Linsky, L. (ed.). Semantics and the Philosophy of Language. Urbana: University of Illinois Press, 1952.
8. Macdonald, M. (ed.). Philosophy and Analysis. Oxford: Blackwell, 1954.
9. White, Morton. The Age of Analysis. New York: A Mentor Book, 1955.

BOOKS

10. Aristotle. The Metaphysics. Translated by Hugh Tredennick. (The Loeb Classical Library) London: William Heineman Ltd, 1933.
11. _____. Prior Analytics. Translated by Hugh Tredennick. (The Loeb Classical Library) London: William Heineman Ltd, 1938.

12. Austin, J. L. Philosophical Papers. Oxford: At the Clarendon Press, 1961.
13. Ayer, A. J. Language, Truth and Logic. Gollancz, 1936, 2nd ed. 1946.
14. Basson, A. H. David Hume. London and Colchester: Penguin Books, 1958.
15. Bergmann, G. The Metaphysics of Logical Positivism. London: Longmans, Green, 1954.
16. _____ . Philosophy of Science. Madison: University of Wisconsin Press, 1957.
17. Blanshard, Brand. The Nature of Thought. 2 vols. London: George Allen & Unwin Ltd, 1939.
18. Carnap, R. Meaning And Necessity: A Study in the Semantics of Modal Logic. Chicago: University of Chicago Press, 1947.
19. _____ . Introduction to Symbolic Logic and Its Applications. New York: Dover Publications, Inc., 1958.
20. Carus, Paul. (ed.). Kant's Prolegomena to Any Future Metaphysics. La Salle, Illinois: The Open Court Publishing Co., 1945.
21. Copleston, F. Contemporary Philosophy. London: Burns and Oates, 1956.
22. Hill, Thomas English. Contemporary Theories of Knowledge. New York: The Ronald Press Company, 1961.
23. Hume, David. A Treatise of Human Nature. 2 vols. London: J. M. Dent & Sons Ltd; New York: E. P. Dutton & Co Inc., 1956.
24. Joad, C. E. M. A Critique of Logical Positivism. London: Gollancz; Chicago: University of Chicago Press, 1950.
25. Kant, Immanuel. Critique of Pure Reason. Translated by Norman Kemp Smith. London: Macmillan & Co Ltd, 1956.
26. Körner, S. Kant. Bristol: Penguin Books, 1955.
27. _____ . The Philosophy of Mathematics: An Introductory Essay. London: Hutchinson University Library, 1960.

28. Maritain, Jacques. A Preface to Metaphysics. New York: A Mentor Omega Book, 1962.
29. Mitchell, David. An Introduction to Logic. London: Hutchinson University Library, 1962.
30. Moore, G. E. Principia Ethica. Cambridge: University Press, 1903.
31. Pap, A. Elements of Analytic Philosophy. New York: Macmillan, 1949.
32. _____ . Semantics and Necessary Truth: An Inquiry Into the Foundations of Analytic Philosophy. New Haven: Yale University Press, 1958.
33. Quine, W. V. O. From a Logical Point of View. Cambridge: Harvard University Press, 1953.
34. _____ . Methods of Logic. New York: Henry Holt and Company, Inc., 1950.
35. Robinson, R. Definition. Oxford: Clarendon Press, 1950.
36. Russell, B. A Critical Exposition of the Philosophy of Leibniz. Cambridge: University Press, 1900; second ed., London: Allen and Unwin, 1937.
37. _____ . The Problems of Philosophy. Home University Library, 1912.
38. Smith, Norman Kemp. A Commentary to Kant's 'Critique of Pure Reason'. New York: The Humanities Press, 1950.
39. _____ . The Philosophy of David Hume: A Critical Study of its Origins and Central Doctrines. St. Martin's Street, London: Macmillan and Co., Limited, 1949.
40. Urmson, J. O. Philosophical Analysis. Oxford: Clarendon Press, 1956.
41. Warnock, G. J. English Philosophy Since 1900. London: Oxford University Press, 1958.
42. Wittgenstein, L. Tractatus Logico-Philosophicus. London: Kegan Paul, 1922.

ARTICLES

43. Bennett, J. F. "Analytic- Synthetic," Proceedings of the Aristotelian Society, LIX (1959), pp. 163-188.
44. Broad, C. D. "Are There Synthetic A Priori Truths?" Proceedings of the Aristotelian Society, Supplementary Volumes, XV (1936), pp. 102-117.
45. Carnap, R. "Meaning Postulates," Philosophical Studies, 1952.
46. Ewing, A. C. "The Linguistic Theory of A Priori Propositions," Proceedings of the Aristotelian Society, XL (1939-1940), pp. 207-244.
47. Goodman, N. "On Likeness of Meaning," Analysis, (1949-1950), Vol.10, No.1 Reprinted in Macdonald, M., Philosophy and Analysis, and in a revised version in Iinsky, L. Semantics and the Philosophy of Language.
48. _____ . "On Some Differences About Meaning," Analysis, Vol. 12, No. 3, (1952).
49. Hamlyn, D. W. "ON Necessary Truth," Mind, LXX (1961), pp. 514-525.
50. Martin, R. M. "On 'Analytic'," Philosophical Studies, III, No. 3 (April, 1952), pp. 42-47.
51. Phillips, Bernard. "Logical Positivism and the Function of Reason," Philosophy, XXIII, No. 87 (October, 1948), pp. 346-360.
52. Robinson, R. "Necessary Propositions," Mind, LXVII (July, 1958), pp. 289-304.