1.A. The Problems

1.A.1. In order to know that some statement is true, one must understand that statement, one must know what it means. Sometimes understanding seems to be enough.

For example, I know that the statement "All bachelors are unmarried" is true simply because I understand it, in particular because I know the meaning at the word "bachelor". In general, however, understanding is not enough: one must do more than learn the meaning of a statement in order to discover whether it is true or false.

In the simplest cases one must, in addition to understanding, also carry out some sort of observation at facts, or rely on the reports of others who have done this. In these cases, the meaning of a statement does not, on its own, suffice to determine whether it is true or not, for facts, that is, the way things happen to be in the world, may also be relevant.

The main aim of this thesis is to inquire whether the truth or falsity of a statement depends on how things happen to be in the world in all cases where the meaning does not suffice to determine this. Where understanding a statement does not on its own enable one to know that it is true, is some empirical observation of contingent facts always necessary? In short, the thesis is concerned with two aid philosophical questions, first clearly formulated by Kant, namely:
Are there any synthetic necessary truths?
Is synthetic a priori knowledge possible?

1.A.2. These problems generate a whole family of problems, some of which will be tackled in this thesis. First, the terms in which the questions are expressed must be explained, and also many related terms, such as "analytic", "contingent", "empirical", "factual", "meaning", "definition", "concept", "proposition", and so on.

Although often used by philosophers, these words have no precisely defined standard meanings. A large part of this thesis will, therefore, be concerned with their clarification.

1.A.3. In the course of this process of clarification, a wide range of further problems will arise. Exactly how is the meaning of a statement ever relevant to whether it is true or not? What happens when one learns to understand a statement, and what is the connection between this and what happens when one comes to know that it is true? How is it possible for a statement to be true simply in virtue of what it means? How is it possible for a statement to be necessarily true, or to be known to be true without empirical investigation? Are all necessary truths analytic? Can all necessary truths be known a priori? Are there different sorts of necessary truths worth distinguishing from one another, even if the distinctions are not the same as the analytic-synthetic distinction? Are there different ways in which a statement can be true in virtue of what it means? When a proposition is true by definition in what sense can we describe it as "true"?
1.A.4. Even if we start with questions about language or about linguistic entities, as some of these appear to be, we soon find ourselves dealing with problems about other entities, such as the persons who use words, or the things and properties to which they intend their words to refer. We shall find that it is impossible to answer questions in logic without discussing a much wider of topics. Logic seems to be inseparable from metaphysics, from philosophical psychology, and from epistemology.

It is concerned with concepts and meanings and propositions and truth; so it cannot be divorced from metaphysics, the general study of the kinds of things which can fall under concepts, which can be referred to in propositions, and which can make statements true or false.

We cannot discuss problems about meanings or concepts or propositions without mentioning thinkers or speakers, the persons who use with meanings, who understand or intend propositions to be expressed by sentences. So a philosopher of logic should be prepared to discuss various mental statue or activities, such as meaning, intending, thinking, or paying attention. This is why I say that logic cannot be divorced from philosophical psychology, the study of ordinary psychological concepts, or at least those connected with our use of language.

(It may sometimes look as if logic can be done by talking only about symbols, but there must always be some implicit reference to persons who use these symbols or could use them, for symbols have meanings only insofar as they are taken to have meanings by some person or group of persons. They do not have meanings in themselves.)

Finally, the discussion of concepts and propositions leads us into the discussion of ways of coming to know that objects fall under concepts, or that propositions are true
or false, and this shows that there are connections between logic and epistemology.

All this should help to explain the fact that although this is primarily a logical investigation, a very wide range of problems and topics must be dealt with. Unfortunately, there will not be space to deal with all the problems which are raised in the discussion.

1.A.5. Although the problems to be discussed were first raised so long ago, they still seem to be of some interest. Indeed, it is sometimes suggested that the question of synthetic necessary truth is one of the most important of the philosophical problems which remain unsolved, for connected with it are problems about philosophical method which ought to be of interest to philosophers engaged in conceptual analysis, if they wish to be clear about what sort of thing they are trying to do. Are they merely producing reports on linguistic usage, or uttering analytic statements, or demonstrating truths which are not analytic but nevertheless necessary, or what?

It has recently been pointed out that there are difficulties in saying precisely what is meant by such words as "analytic", "synonymous", "necessary" (mainly by Quine), and in consequence it seems to have become rather unfashionable to employ them in philosophical discussions. Certainly a survey of recent publications in philosophical Journals shows that people are not at all clear as to what the analytic-synthetic and necessary-contingent distinctions are. But they cannot really get along without them, end and up talking about "absurdity", "logical impossibility", "contradiction", "nonsense", "inconsistent usage", "conflict with ordinary language", "inference-licences", "rules of grammar", etc., often
unaware that, in a groping sort of way, they are making use of Kant's distinctions. It seems to me to be time they faced up to this fact and tried to be clear about the distinctions, taking seriously some of the problems connected with them. This is what I shall try to do.

1.A.6. In the remainder of this chapter some remarks will be made about the procedure to be followed in the rest of the thesis.

1.B. Methodological remarks

1.B.1. I have undertaken to explain the meanings of certain terms and to answer some of the questions expressed in these terms. In order to do this without circularity I should have to avoid using words such as an "necessary", "contingent" and "analytic" until after explaining their meanings, but this would increase the length of the thesis considerably. My excuse for using the words before shewing that they correspond to real distinctions, apart from the fact that it makes a great deal of compression possible, is that philosophers and others do seem to have some sort of intuitive understanding of them, and their usage seems often to be in accord with the definition which will be given later on, even though these philosophers give very different definitions from mine when they try to say precisely what such words mean. (This is an illustration of the familiar fact, to be discussed in the Appendix on "Implicit Knowledge", that one may perfectly well know how to use a word. without being able to say how it is used.)

When the meanings of these words are finally explained, this will not be done by giving an explicit definition.
Instead, the explanation is more nearly a process of drawing attention to those aspects of our thought and experience and our use of language which make it possible for the words to be used. This process in some ways resembles **ostensive** definition, except that here the "pointing" is done with words.

1.B.2. The description of those aspects of our thought and language and experience which make it possible to distinguish analytic from synthetic propositions, and necessary truths from contingent ones, will proceed from a certain point of view, which I shall now try to describe, in order to reduce the possibility of misunderstandings.

Not everything that can be said about thinkers and speakers has a content which can be exhausted by descriptions from the point of view of experimental psychologists or physiologists, or anthropologists who study human beings as if they were only one kind of animal, to be observed in a scientific way. The reason why statements about persons cannot always be translated into the statements of scientific observers is that they answer different kinds of questions, they serve different kinds of purposes, they are made and listened to by persons with different sorts of interests and different kinds of curiosity.

When I make a statement about what a person thinks or feels, or what he intends, or when I try to explain his behaviour in terms of what he wants or how he reacts to what he sees, or thinks he sees, then I may be trying to say something which enables other persons to know what it would have been like to be in his place: and this is not the same thing as describing the physical state of his brain or his dispositions to produce certain publicly observable noises or movements in specified situations -
though I may be talking about these things as well.

1.B.3. In order to understand descriptions or explanations which refer to mental states or processes, it is not enough to have observed their outward manifestations or the concomitant physical or physiological processes (the latter is not even necessary, let alone sufficient: people are able to understand such statements as "I jumped because I saw a face at the window", without knowing anything about electromagnetic waves or what goes on in the brain). In order to understand completely, one must have had experiences sufficiently similar to those described. One must be the same kind of being. For example, unless I know what it is to act for reasons, or perhaps to act because I want something, I cannot fully understand a statement such as the following: "I climbed on the chair because I wanted one of the biscuits on the top shelf". Such "ignorance" would not, however, prevent my coming to understand a scientific explanation (e.g., at a physiological level) of this kind of behaviour.

All this should be remembered in connection with Chapters Three, Six and Seven, below (especially section 3.C). For example, when it is asserted that a property, such as a shape or a colour, can explain how a person uses a descriptive word, or how he groups things together, this is not an assertion which might be made by an experimental psychologist or a physiologist, but the sort of statement which can be understood (fully) only by a person, by one who knows what it is like to select objects on the basis of their colour or shape or some other visible property.
1.B.4. It is sometimes suggested that the reason why statements about conscious persons cannot be translated into statements about publicly observable physical events or states of affairs is that the two sorts of statements describe things at different levels. For example, statements about individual persons are at a different "level" from statements about crowds or nations, and statements about the positions of a moving point of light are at a different "level" from statements about its velocity, the radius of curvature of its path, and so on. (Wittgenstein's comparison, on p.179 of "Philosophical Investigations" might suggest that this was his view. But see below: 1.B.6.(note).) This makes it look as if it were just a matter of a difference of degree of complexity, or a difference in which facts are counted as relevant, or a difference in the ways in which the facts or objects described are "organized" or "structured".

The impossibility of translation, and the failure of attempts to find logical connections between classes of statements at the two levels might then be explained in terms of the "open texture" of the concepts at a higher level. However, if there were just a difference in level, then there would surely be some logical implications from one level to the other despite the "open texture". For example: a complete description of the positions of a dot at all times would logically entail statements about its velocity, etc. In some cases a complete description of the behaviour of millions of individual persons would entail a statement about a nation, such as that the nation was at war with another. But no description of physical and physiological states, however exhaustive, can entail the statement that a person has a toothache, or that he wants a drink. Something is always
left out, namely a description of what is going on from his point of view, how it feels to him.

1.B.5. The difference between statements to which I am trying to draw attention, therefore, are not merely differences in "level", or in the method of organization of facts, but differences in the point or view from which the descriptions are given. This is what seems to me to be one of the most important reasons for the failure of reductive programmes.

This question cannot be dealt with in detail here. I shall simply assume that there is a difference and that it can be characterized thus: when describing things from the "rational" or "personal" point view, one assumes that it makes sense to wonder what it would be like to be in the position of the person being described, whereas, from the scientific (or "tough-minded") point of view one tries only to describe what could be observed by anyone at all, and seeks causal explanations for human behaviour. For example, the experimental psychologist investigating threshold levels is concerned only with the subject's responses to stimuli, he is no more concerned with what it would be like to be in the subject's position, than a physicist wonders what it would be like to be in the position of a magnet which attracts iron filings, or an electron which is deflected by a magnetic field. (In the early stages of development of a science, of course, people may be concerned with what it feels like to be set in motion by an external force, for example. Here an intermediate point of view is adopted.)

1.B.6. The descriptions and explanations in the chapters
which follow are given from this personal or rational point of view, which means that I shall have to rely heavily on the reader's ability to reflect on his own experience while I try to draw attention to certain aspects of it. I am not writing from the point of view of an anthropologist or psychologist or physiologist of the sort who simply observes people "from the outside" and records correlations between stimuli and responses. (Compare the point of view adopted in Quine's book: "Word and Object".) I am writing from the point of view of a person who thinks and speaks and has experiences, and I am trying to describe certain general features of his thought and language and experience from that point of view. This may be described, therefore, as a "phenomenological" essay.

When, on occasion, I describe anything from the point of view of a person who observes other persons, then it is important to remember that the observer is the same kind of being as the ones which he is observing, otherwise he can only observe them, he cannot understand them. That is, he can only record that they produce certain marks on paper, or certain noises, or that they respond in certain ways when vibrations in the air stimulate their ear-drums, or when electromagnetic waves reach their retinas. He will not be able to record that they are saying anything, let alone what they are saying, or that they hear sounds or see colours; or, if he can record these things, then his records will be only short-hand descriptions of patterns of observable behaviour. (Remember that we do not see wavelengths nor hear vibrations when we see colours and hear sounds.)
(Note. Wittgenstein tried -- in "Philosophical Investigations" -- to describe things from an intermediate point of view: he talked from the point of view of one who uses language, who is a person and can communicate with other persons, but he concentrated on publicly observable phenomena, on the kind of evidence which makes people assume that they are communicating successfully, on the publicly observable social aspect: of our use at language. It seems to me that he omitted a great deal that can be said about our thought and language from the point of view of the one who thinks and speaks and knows what he means, and I have tried to fill that gap, or part of it.)

1.B.7. The point of view from which this thesis is written is only one among several different possible points of view. It should not be thought to be more correct or more important than any other (though perhaps it might be argued that it is the only one which a philosopher can adopt without laying himself open to the charge that he is trying to he an arm-chair scientist!) There are many different sorts of interest which one may have in the world, and there is no reason why only one of these interests should be fed, to the exclusion of all others.

This seems sometimes to be denied by so called "tough-minded" philosophers. For example, Quine wrote, in "Word and Object" (p. 264):

"If there is a case for mental events and mental states, it must be just that the positing of them, like the positing of molecules, has some indirect systematic efficacy in the development of theory. But if a certain organisation is achieved by thus positing mental states and events behind physical behaviour, surely as much organization could be achieved by positing merely certain correlative physiological states and events instead."

But "organisation" and "systematic efficacy in the development of theory" (presumably scientific theory)
need not be the only aims of a philosophical enterprise. There is another point of view, the one which I have tried to characterise. It has not been arbitrarily invented by me, nor is it anything mysterious or unfamiliar, for we are constantly asking people how they feel, asking them what their intentions are, what they want, why they behave as they do; and we are not merely requesting information which could be supplied by any sufficiently clever and well-informed physiologist. If we were to abandon this point of view in our dealings with other people (e.g., when we ask "Is your toothache very bad?"), our whole attitude to life and personal relations would have to change. There would be no more scope for such utterances as "I cannot understand why he thinks his plan has the slightest chance of working."

1.B.8. In what follows, it will therefore be taken for granted that there is a point of view of the sort which I have tried, somewhat too briefly, to characterize. From this point of view, the point of view of a conscious person who talks and thinks about the things he sees about him, I believe that a coherent description can be given of much of our language, thought and experience, which shows that there is room for a distinction between propositions which are analytic and propositions which are synthetic. (Cf. Quine: "No systematic experimental (sic) sense is to be made of a distinction between usage due to meaning and usage due to generally shared collateral information". Op.Cit., p.43.) Within this general framework it will be shown that there is a clear and interesting sense in which some statements which are not analytic are nevertheless necessarily true.
1.C. The Programme

1.C.1. So far the main problem has been stated, some subsidiary problems mentioned, and remarks made about the general framework within which these problems will be treated. Now I shall briefly describe the programme to be followed in succeeding chapters.

After these preliminaries, the remainder of the thesis will be divided into two parts. The first is concerned with the general connection between meaning and truth, the second with the connection between meaning and necessary truth. (Some side issues and further developments will be dealt with in appendices at the end.)

Part Two, on meaning and truth, is divided into four chapters. First I shall try to explain, in a general way, how we can talk about meanings and propositions, bringing out some presuppositions of such talk. This lays the foundation for most of the remainder of the thesis. Secondly, in Chapter Three, a detailed description will be given of some ways in which descriptive words and expressions (e.g. adjectives) can have the meanings which they do have, in virtue of their being intended to refer to universals (i.e. observable properties and relations). This will involve a great deal of over-simplification, and in Chapter Four some of the complications in our ordinary use of words will be described which are overlooked in Chapter Three. Finally, Chapter Five describes our use of logical words and constructions (pointing out that attempts to reduce logic to syntax are quite misguided), and shows how the way in which logical constants and descriptive words are combined to form a sentence determines the class of possible states.
of affairs in which that sentence would express a true proposition. This shows how the truth of a statement can depend both on what it means and on what the facts are, and prepares the way for a description of cases in which the truth depends only on what the statement means.

Part Three, which is concerned with necessary truth, starts with the explanation in Chapter Six of how it is possible for a statement to be analytic (true by definition), and how we can know that such statements are true without knowing how things happen to be in the world. Chapter Seven seeks to explain the meanings of "necessary" and "contingent", and to show that there are good reasons for saying that the necessary-contingent distinction is different from the analytic-synthetic distinction. It is hoped that some examples taken from elementary geometry will illustrate the claim that there are some necessary truths which are not analytic. (For example, is it analytic that no solid object is bounded completely by three plane surfaces? Further examples are given in an appendix.)

In all these chapters some general and sweeping statements are made, followed by attempts to show how they are oversimplified and ignore complications. In most cases, however, there will be no room to go into these qualifications in detail.

1.C.2. It will be noticed that no account is to be given of our use of proper names and other singular definite referring expressions which refer to particular material objects. The reasons for this exclusion are stated in Appendix I. The whole discussion will be restricted to relatively simple statements about material objects and their properties, such as "All red things are round", "No
green things are glossy and pink" and "If a rectilinear figure is three-sided, then it is three-angled". These statements contain only logical constants and descriptive words referring to observable features or properties or combinations of properties (little will be said about relations), and they are all universal in form: that is, they contain no definite referring expressions which presuppose the existence of particular material objects.

It is important to stick to relatively simple cases at first, as it is much more difficult to avoid confusions if one tries to discover things in a completely general way right from the start, so as to take account of even the most complex examples. It should not simply be taken for granted, as it often is by philosophers, that it obviously makes sense, or any clear sense, to apply the analytic-synthetic distinction to almost every sort of utterance. A failure to be clear about the conditions in which the distinction can be applied leads to great confusion. Some limitations on the applicability of the distinction will be described later on, based on the facts pointed out in Chapter Four.

1.C.3. The main conclusion of this essay, that there exist synthetic necessary truths, or synthetic necessary connections between concepts and propositions, was first put forward by Kant. But my aim is not exegesis. I shall not be concerned with whether Kant really was trying to say the sort of thing which I shall be saying, or whether he would have approved, and there will not be as much in the way of reference to and comment on his texts as there might have been in a more scholarly work. (Nevertheless, It appears to me that most of my main arguments can be
found in Kant's "Critique of Pure Reason", though often expressed in an obscure and muddled fashion. He did not, after all, have the benefit of advances in clarity and insight achieved by philosophers during this century and the last.)

The reader who desires an historical account of the development of the problems discussed here, or criticism or the views put forward by other philosophers, is referred to "Semantics and Necessary Truth", by Arthur Pap. In order to save space I shall refer to the writings of other philosophers only when I think that this will help to clarify what I am saying. (Many of my debts will have to go unacknowledged.)

1.C.4. To summarize, I shall try, making use of the assumptions and methods described in the previous section, to describe the general connection between the meanings of certain sorts of statements and the conditions in which they are true, and then show how it is possible for a proposition to be true solely in virtue of what it means, that is, to be analytic. The question will then be raised whether the class of analytic truths includes all necessary truths, and the negative answer will be illustrated by the description of examples of necessary truths which are synthetic. I hope that in the course of all this it will become clear why other philosophers have reached different conclusions, the most important reason being, I think, that they have used much looser (and fluctuating) criteria for identity of meanings and propositions than I use. Failing to make fine discriminations, they fail to notice interesting relationships. (See section 2.C.)
It is hoped that there will be something of interest in the general picture that will be painted, even if the details are neither new nor very interesting in themselves.