UNIT 1   LOGICAL POSITIVISM

Contents

1.0   OBJECTIVES

This unit tries to elaborate on logical positivism as a philosophical movement in Western tradition in the nineteenth century and the beginning of twentieth century.

1.1   INTRODUCTION

Logical positivism as a movement is traceable to Analytical Philosophy. The development of science brought about rapid changes in Philosophy. The word 'analysis' refers to any philosophy which places its greatest emphasis upon the study of language and its complexities. Philosophical analysis is essentially the study of language, but it must not be confused with other important studies of language. Linguists, philologists, grammarians, lexicographers, etc., are also involved in a study of language. Their interest, however, is primarily in empirical investigation. They are interested in discovering facts about how our language is used; what meanings words have; how languages begin, change and die, etc. These are scientific questions about language which can only be answered through use of scientific method. The analytical philosopher uses the analytical method as a tool to settle philosophical questions.

1.2   HISTORY OF THE MOVEMENT

Just as science had to create its own technical vocabulary and introduce concepts (e.g., force, mass, atom) that are more precise than those supplied by common sense, so also, these philosophers argue, philosophy must develop its own vocabulary and set of concepts in order to resolve its problems. Other analysts such as 'ordinary language' philosophers disagreed with the 'artificial language' of the logical positivists. Their contention was that philosophical problems can be solved through natural language we all use to communicate with each other. In logical positivism we find united in a peculiar way the empiricism of Hume,

the positivism of Comte and Mach and the logical analysis of Moore, Russell, Wittgenstein, Whitehead and Frege. The adherents of this trend of thought organised themselves into a philosophical group at Vienna in 1928. The group became known as the Vienna circle. The prominent members of this group were Moritz Sehlick, Otto Neurath and Rudolf Carnap. The Movement gradually spread across the world of philosophy. Hans Reichenbach founded a centre at Berlin. At Oxford A.J.Ayer was the advocate of this movement. The two principal aims of Logical positivism were:

1)   To provide a secure foundation for the sciences.

2)   To demonstrate the meaninglessness of metaphysics.

The method adopted to realize the aims of the logical positivism was logical analysis, specially of language. It is this method which mainly distinguishes this movement from the positivism and empiricism of earlier times. It is distinguished, from the empiricism of Hume. While Hume's empiricism is based on psychological analysis of experience, the logical positivists base their theories on logical analysis of it. While earlier positivists objected to metaphysical speculation either because it is unprofitable or because its truths cannot, be proved, the new positivists object to it because logical analysis of metaphysical language convinces them that all metaphysical propositions are meaningless. The logical positivists dismiss metaphysical questions themselves as non-sensical, so that the question of their solution does not arise at all.

1.3   THE CRITERION OF MEANING

Russell and Moore succeeded in bringing to an end the dominance of Idealism in British Philosophy. American pragmatists C.S.Peirce and William James were influenced by the writings of Russell and Moore. It was Russell's brilliant student Ludwig Wittgenstein through his influential work *Tractatus Logico – Philosophicus* argued that meta physical questions are from their very nature unanswerable. All meaningful discourse is empirical in nature. Metaphysics is not empirical, so it is not meaningful. The necessity of the propositions of mathematics and logic follows from the fact that they are *tautologous*, making no reference to the world. Since the sentences of metaphysicans are neither propositions of empirical science nor tautologies of logic or mathematics, they are nonsensical. Philosophy, Wittgenstein said, is primarily the activity of clarifying language; it is not a source of truth about the universe the way science is. The Philosopher's only, proper task in to show the person who is puzzled by a metaphysical question that it is meaningless and unanswerable. Language is the symbolic representation of facts experienced. It can be analysed into significant assertions called propositions, and all propositions can be shown by further analysis to consist of some elementary propositions. Every elementary proposition, is a picture of some atomic fact experienced. The world is composed of such facts, and can be completely analysed into them. The proposition, 'this book is blue', can be true only if a book is blue, can be true only if a book is experienced as blue. Logical analysis of the world of experience as pictured by propositions asserting the existence of the world brings us thus to facts (or objects related) as the ultimate constituents of the world. This position is different from that of Hume for whom experience is simple impressions (not propositions). Hume analyses experience psychologically and not logically and the impressions

yield the knowledge of non-related sense objects (like blue colour) and not of any fact or combination of sense objects (like this object having a blue colour). For Wittgenstein, a proposition which does not refer to 'any' state of affairs i.e., any fact of experience is, therefore, no proposition at all. While the truth of a proposition requires that it should agree with reality the sense of a proposition requires that it should at least refer to possible empirical facts. The sense of a proposition is the method of its verifications. To understand a proposition is to know what is the case, if it is true, that is what facts it stands for which can be expected to be observed or experienced if the proposition is true. But the method of verifying the proposition is also to observe such facts. Hence the very experience which can verify a proposition is also that which constitutes its sense. The verification theory of meaning supplied the point of departure to the positivists of the Vienna circle. They utilized this theory for demonstrating the meaninglessness of metaphysics, as well as for clarifying the propositions of science. In England the most famous logical positivist was A.J.Ayer. Through his famous work *Language, Truth and Logic*, Ayer placed great emphasis upon "The Principle of Verification".

1.4   ELIMINATION OF METAPHYSICS

Metaphysical entities are beyond sense, experience (transcendental). All metaphysical statements do not meet the conditions of verifiability and therefore according to A.J. Ayer such statements are nonsensical. According to him philosophy is nothing but the analysis of language. The fundamental postulate of metaphysics is that there is a super phenomenal reality. Since protocol statements are verifiable in experience, no statements which are not reducible to empirically verifiable protocol propositions can possess any significance. Metaphysical propositions by their very nature purport to assert the existence of unverifiable, trans-empirical entities. They do not possess any sense. Such propositions are not propositions at all. They constitute a body of nonsensical expressions. In Descarte's assertion **'*Cogito Ergo Sum'*** (I think therefore I exist), the 'I' refers to the existence of 'self' which is not empirically experienced. Similarly the metaphysical systems of Spinoza and Leibniz assert the existence of trans-empirical entities which are meaningless. Through his logical analysis of language Carnap points out two chief sources that give rise to meaningless sentences. Either the individual words of a sentence are non-sensical or the sentence as a whole becomes non-sensical. For example in the sentence, "Twas brilig and slithy toves", the words have no meaning but in the following sentences the individual words are meaningful, But the sentences are meaningless:

"Quadratic equations attend races".

"Caesar is a prime number".

Metaphysicians propound the first kind of non-sense chiefly under the misconception that to every word or phrase that can be the grammatical subject of a sentence, there must somewhere be a real entity corresponding. For as there is no place in the empirical world for many of these 'entities', a special non-empirical world is invented to house them. The metaphysician has to show an entity even to the world 'nothing'. He indulges in the second kind of non-sense, when for example, he speaks of 'thing-in-itself' lying beyond all experience. Everyone of these words 'thing', 'in' 'itself' 'lying' 'beyond' 'all' 'experience'

possess meaning in other sentences and context. But as combined here they do not yield any sense, since no empirical verification is possible with regard to what is beyond all experience. Therefore as a knowledge of reality, metaphysics is meaningless.

1.5   LOGICAL ANALYSIS OF SCIENCE

The function of Philosophy, according to the Logical positivists is to analyse the statements asserted by scientists, study their kinds and relations, and analyse terms as components of those statements. The logic of science according to Rudolf Carnup consists of two branches. One branch is called logical syntax or formal logic. The logical syntax analyses complex sentences of science into simple ones and discovers the laws governing the combinations of words into meaningful sentences. It enables us to realize the fundamental assertions of the different sciences, and their logical interrelations. The other branch of the logic of science is called semantics. The meaning aspect of the sentence is called semantics. It considers the relations of linguistic expression to objects designated by them. Semantic analysis of the language of science discovers, for example, that a term may designate a certain particular objet (e.g., the sun) or a certain property of things (e.g., iron) or a certain relation between things (e.g., motherhood) or a certain physical function (e.g. temperature). It also analyses synonymous terms such as *homosapiens* person and man. The results of sciences and their relevance to society are pursued by Philosophers.

1.6   LOGICAL POSITIVISM AND INTERPRETATION OF SCIENCE

As the positivists believe in observation and empirical verification they interpret the terms like 'probability', 'induction' and 'laws of nature' in their characteristic ways. There are three different kinds of probability in logical positivism.

1)   According to Hans Reichenback probability lies between the two limits of absolute truth and absolute falsity. According to this theory no conclusion follows from any premise with absolute certainty, the latter can only imply the former to some degree of probability.

2)   R.Von Mises advocates frequency theory of probability. It attempts to base the idea of probability on the observational frequencies of the happenings of a class of events. Probability can be asserted only on statistical observations and computation.

3)   The third conceptions of probability are supported by Wittgenstein and Waismann. In this view probability is a kind of logical relation obtaining between two propositions between any two propositions P and Q there may be three kinds of logical relations. Using Euler's circles these may be shown as follows.
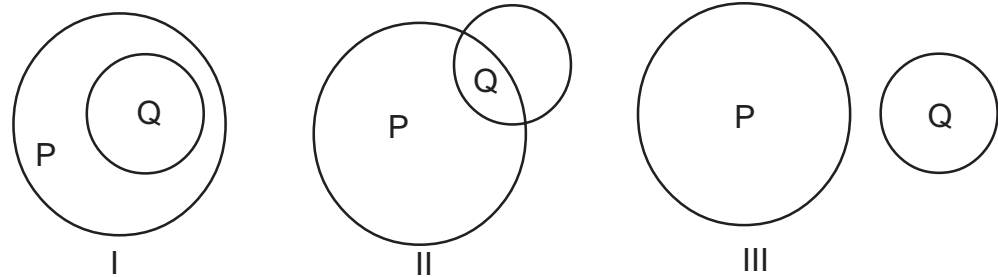
In the first case 'P' includes 'Q' and 'Q' follows from 'P'. 'P' entails 'Q' and the relation between the two is called entailment (Eg. 'All kings are human and 'All kings are animate') In the third case 'P' excludes 'Q'. The relation between the two is contradiction. (Eg 'All kings are human' and All Kings are inanimate). In the second case however P neither entails nor excludes Q, P partially overlaps Q. This kind of logical relation between two propositions, is called probability (Eg. 'All kings are human' and 'All kings are fallible') Probability as a kind of logical relation is also supported by J.M. Keynes. In this conception probability is not subjective.

Induction like probability is also considered by the positivists from their own point of view. Induction is observing some empirical phenomena and making a general proposition based on the particular observations. E.g. 'All bodies gravitate' is a general proposition arrived at after observing individual bodies. According to the logical positivists the tendency to generalize is a Psychological process and therefore induction does not present any logical problem. The justification of induction is based on practical utility. The laws of science have no existential import. For the contemporary positivistic theory laws in science are not general empirical propositions capable of verification. They are schemata or models from which singular propositions can be constructed. We can verify singular proposition derived from laws, but it is meaningless to speak of the verification of laws themselves because they are not propositions. To avoid solipsism in the observation of empirical phenomena Carnap and Nemath tried to unify different sciences. In the unity of science there are observable physical counterparts of biological and even psychological process. Charles W.Morris describes three different directions of philosophy of Language: Pragmatists, Semantics and Syntactics. These three branches are collectively called Semiotic. Pragmatics studies the modes of use of language, the behavior of persons as cause and effect of such use, and the social role of language. Semantics is the science of meaning; it studies the relation between language symbols and what they designate syntactic studies the formal properties of, and logical relations among, the signs and sentences constituting a particular language. Carnap develops this third aspect in his *Logical syntax of Language*. Wittgenstein and Ryle discuss the first two aspects of the philosophy of language. The logical positivists, through their method made the existence of God meaningless. All ethical precepts, commands, expressions containing different kinds of appreciation of values become meaningless. Even the scientific statements which are prescriptive and regulative are meaningless according to the logical positivists. However the inherent self-contradictions and arbitrary use of words have considerably discredited the logical positivistic movement.

1.7   OTHER LOGICAL POSITIVISTS

The early analytic philosophers like Bertrand Russell, G.E.Moore and C.D.Broad influenced many thinkers of the west. Some of the other thinkers who contributed to analytic philosophy are A.J.Ayer, Rudolf Carnap, W.V.O. Quine, Carl Hempel, John Wisdom, Gilbert Ryle, P.F.Strawson and J.L.Austin.

A.J. Ayer

The positivism of A.J. Ayer focused on two areas in Philosophy: 1) The Elimination of Metaphysics and 2) The Principle of verification. His

book *Language, Truth and Logic* deals with the Principle of verification. Ayer intended it as a criterion of meaning, through which significant discourse could be distinguished from senseless combinations of words. He states the principle of verification in his book and attempts to clarify how it is to be understood and how it can be used to demonstrate the literal meaninglessness of metaphysical sentences.

Rudolf Carnap

Testability and Meaning is a shorter work of Carnap which appeared in Philosophy of Science in 1936 and 1937. In this he discussed the meaning criteria and the requirements of an empiricist language, the use of reduction sentences for analyzing assertions about dispositional properties, and physicalism as a basis for reconstructing the language of science. Two chief problems of the theory of knowledge, are the question of meaning and the question of verification. The first question asks under what conditions a sentence has meaning, in the sense of cognitive, factual meaning. The second one asks how we get to know something, how we can find out whether a given sentence is true or false. The second one presupposes the first one. If by verification is meant a definitive and final establishment of truth then no (synthetic) sentence is ever verifiable. We can only confirm a sentence more and more. Therefore we speak of the problem of confirmation rather than the problem of verification. We shall call a sentence testable if we know such a method of testing for it; and we call it confirmable if we know under what conditions the sentence would be confirmed. A sentence may be confirmable without being testable. The difficulties in discussions of epistemological and methodological problems are often due to mixing up of logical and empirical questions. Carnap attempts to formulate the principle of empiricism in a more exact way by stating a requirement of confirmability or testability as a criterion of meaning. Different requirements are discussed corresponding to different restrictions of the language.

W.V.O. Quine

W.V.O.Quine was a well known logician and analytic philosopher with positivist sympathies. His essay "Two Dogmas of Empiricism" appeared in *The Philosophical Review* in 1950. In his essay Quine challenges two doctrines which many people feel are central to logical positivism: 1) the analytic-synthetic distinction and 2) the belief that there are propositions which future experience can never cause us to reject as false. The analytic-synthetic distinction has a long history in modern philosophy. The distinction between analytic and synthetic statements can be found in the writings of Leibniz, Hume and Kant. According to Kant an analytic statement is one in which the predicate does not add anything new to the subject:

(E.g) a) A bachelor is an unmarried man

   b) Iron is a metal

An analytic statement is limited to subject–predicate form. A synthetic statement is one in which the fact can be experienced:

(E.g) Water boils at 100 °c

But W.V.O Quine raises a question of whether there be a distinction between analytic and synthetic statements. He calls the distinction between analytic and

synthetic statements as a dogma. The other dogma pertains to the belief that there are certain propositions which no experience can ever lead us to reject. He argues that although there may be propositions whose truth we would abandon only as a last resort, there are nevertheless no propositions which could not in principle by upset by future experience. Quine's view is supportive of a kind of empiricism without the above two dogmas.

Carl Hempel

The fundamental tenet of modern empiricism is the view that all non-analytic knowledge is based on experience. This thesis is called the principle of empiricism. According to the contemporary logical positivist, a sentence makes a cognitively meaningful assertion, and thus can be said to be either true or false. According to the empiricist criterion of cognitive meaning, or of cognitive significance, many of the formulations of traditional metaphysics and large parts of epistemology are devoid of cognitive significance. Hempel attempts to provide in detail the logic and methodology of empirical science and clarify and restate the basic ideas of empiricism. He wants changes in the empiricist criterion of meaning. These changes focus on the testability criterion of empirical meaning. The concept of testability which is to render precise the vague notion of being based – or rather baseable – on experience, has undergone several modifications which reflect an increasingly refined analysis of the structure of empirical knowledge. A sentence has cognitive meaning if and only if it is translatable into an empirical language. According to Hempel there are requirements for both complete verifiability and complete falsifiability in Principle. According to the requirement of complete verifiability in principle, a sentence has empirical meaning if and only if it is not analytic and follows logically from some finite and logically consistent class of observation sentences. According to the requirement of complete falsifiability in principle, a sentence has empirical meaning if and only if its denial is not analytic and follows logically from some finite logically consistent class of observation sentences.

John Wisdom

John Wisdom was a student of Wittgenstein. Through his articles and books, he has brought to Linguistic analysis an original and exciting new kind of philosophical procedure. He is not in agreement with Wittgenstein, A.J.Ayer and other logical positivists in rejecting metaphysics as non-sensical. On the other hand he tries to understand why metaphysicians feel compelled to talk in their linguistically odd ways. By putting stress upon the imperfect similarities between various kinds of statements in our language, he hopes to discover what is and is not valuable in the various attempts to solve metaphysical problems. Wisdom stressed the 'therapeutic' conception of philosophy. His articles, "Gods" in Philosophy and Psycho analysis and "Other Minds" reveal his emphasis on the analogy between philosophical and neurotic distress, contrasting them with other kinds of problems. Philosophers reason for and against their doctrines and in doing so show us not new things but old things anew. According to him a purely linguistic treatment of philosophical conflicts is often inadequate. Besides the latent linguistic sources there are others non-linguistic and much more hidden which subtly co-operate with the features of language to produce philosophies. Philosophical disputes can go on too long since there is something queer about philosophical reasons. Philosopher's chronic indecision, whether it takes the form of enthusiastic oscillation or melancholic inactivity, is due to the fact that

besides the reasons revealed in the course of talking over the matter there are others which remain hidden.

Gilbert Ryle

In his popular book, *The concept of Mind*, Gilbert Ryle tries to refute Descartes myth, prevalent among theorists that man has both a body and a mind; that body is in space, subject to mechanical laws and observable by sense-organs, whereas the mind is an opposite kind of private existence, being not in space, not subject to such laws and not observable by others. According to Ryle, mind- body relation is not that of a 'Ghost'(mind) in the machine (body). Mind cannot be analogous to a 'pilot' in a 'ship'. Dualists like Descartes commit a logical blunder in counting mind and body as two species of the same genus, 'existence'. Ryle uses plenty of similes and metaphors to counteract the effects of opposite metaphors lying behind the philosophical conception of mind as an occult and mysterious entity. The family of categories relating to the realm of mind may be divided into three broad classes: 1) terms like 'mind', 'spirit', 'self', etc. which suggest that mind is a kind of substance, 2) adjectival terms signifying some present (occurrent) quantities and acts belonging to mind e.g. 'conscious', 'alert', 'attentive', think', 'imagine' etc. and 3) Similar adjectival terms signifying some capacities and dispositions e.g., 'intelligent', clever, 'rational', 'critical', rash etc. Ryle argues that capacity or potentiality is a mythical entity. He is conscious, alert and so on means he is acting or behaving in particular observable ways. Ryle reduces the dispositions to occurrents, and all occurrents to observed outer activities and tries to do without terms implying, mental phenomena. It is supposed that 'thinking' is the cause of 'doing'. There is no internal evidence of our consciousness to show that the outer act is preceded by another inner act. Moreover if we suppose the necessity of a precedent mental act as the cause of the outer act, we must think of a second mental act preceding the first, and so on ad infinitum. So the supposition of a higher order of inner, mental causes for explaining the outer acts is untenable. Ryle questions the view that consciousness is the essence of mind. Feelings are nothing but bodily sensations. The categories signifying the private, inner, higher order of mental capacities, qualities and acts can be replaced by categories signifying physical processes. Therefore there is no mystical entity called mind. Mind 'can be replaced by the team 'person'.

J.L.Austin

Austin exerted great influence on his students through his writings. He agrees with other analysts the conviction that the study of language is of the greatest value in dealing with philosophical questions, Like Wittgenstein and wisdom he believes that a great deal of what philosophers have written is not so much false as it is misleading and confused. However, Austin's procedure for dispelling this confusion is unique. He displayed an amazing talent for articulating the subtle shifts of meaning which result from the most minute grammatical changes. He was clearly of the opinion that the study of grammar is philosophically important, and he attempted to demonstrate this in his later works. He believed that the time was not yet ripe for speculation in philosophy. We must first become as clear as possible about how our language operates before we attempt to settle philosophical problems or even speculate on whether any of them can be solved. Thus Austin never endorsed Wittgenstein's speculations about the ultimate fate of philosophy.

One of the most discussed analytical philosophers of 20th centaury was P.F.Strawson. In his book *Individual*, he attempts to show that certain general conclusions about the world can be gained from the analysis of how we speak. He argued that there was no real anti thesis between linguistic analysis and a certain kind of metaphysics. He distinguished two kind of metaphysics: that which only attempts to describe the conceptual boundaries on our language (descriptive metaphysics) and that which attempts to revise them (revisionary metaphysics). His essay "On Referring" challenges Russell's theory of descriptions. Strawson argues that Russell made at least two mistakes: He did not fully realize that a sentence can have a variety of uses, and he mistakenly thought that every meaningful sentence must be either true or false. According to Strawson, a sentence such as "The present king of France is wise" when used today, is neither true nor false, for the question of its truth or falsity does not even arise. Such a sentence presupposes but does not assert, that there is a king of France, and since this presupposition is false, the question of truth or falsity cannot be an issue. Russell's theory is unnecessary since the problem it was designed to solve does not exist. The sentence "The king of France is wise" was uttered from the beginning of the seventeenth century onwards, during the reigns of each successive French monarch; it was also uttered during the subsequent periods in which France was not a monarchy. There are also difference between different occasions of the use of this sentences. For instance, if one man uttered it in the reign of Louis XIV and another man uttered it during the reign of Louis XV, it would be natural to say that they were respectively talking about different people. If on the other hand two different men simultaneously uttered the sentence, then, they were both talking about the same person, and in that case in using the sentence, they must either both have made a true assertion or both have made a false assertion. This illustrates the use of a sentence. We cannot talk of the sentence being true or false, but only of its being used to make a true or false assertion. Strawson dealt at length "indefinite References" the problems in making "identification statements" and The logic of "subjects and predicates". The contextual requirement for the referring use of pronouns may be stated with the greatest precision in some cases (e.g. 'I' and 'you') and only with the greatest vagueners in others ("it" and "this"). This sentences may be classified into two classes: 1) those of which the correct referring use is regulated by some general referring-cum-ascriptive conventions (E.g. Pronouns which have the least descriptive meaning) and ii) those of which the correct referring use is regulated by no general conventions, either of the contextual, or the ascriptive kind, but by conventions which are ad hoc for each particular use.

1.8 CRITICISM OF LOGICAL POSITIVISM

The positivists attack on metaphysics evoked vehement protests and counter attacks from the opponents of logical positivism. The counter attacks made the supporters of the logical positivists to defend their views in different ways. The verificational theory is criticized on many grounds. What is the meaning of verification when it is said that the meaning of a proposition depends on the method of its verification? if it means that the observational context is the criterion for the truth of proposition, then the historical statement and the statements about objects not yet perceived are meaningless. Faced by these difficulties some positivists admit that by verification should be meant verification in theory or

principle and not necessarily in practice. If by verification, the positivists believe in the sense of conclusively proving some proposition to be true or false, there are statements which cannot be verified conclusively:

a)   Arsenic is poisonous

b)   This wire conducts electricity

c)   There is other side for the moon.

d)   Man is mortal.

The above statements can be verified in indirect ways. Schlick says that the statement. 'Man is mortal' is non-sensical, only an important type of nonsense. This makes Karl Popper remark that, 'Logical positivism destroys not only metaphysics but also natural science'. According to Popper, even limited number of crucial observations can conclusively confute (i.e. falsify) if not establish a general proposition, and that a sentence should be allowed to be significant if it expresses something which can be confuted by experience.

A.J. Ayer rejects the falsification theory and defends his verification theory by introducing the concept of probability in the meaning of statements. The general propositions of science are significant because it is possible to observe facts which render them probable if not certain. He maintains, therefore, that verification, in the definition of meaning should include both strong verification and weak verification. In the case of strong verification it is possible to provide conclusive proof for the truth or falsity of a proposition. (E.g. All a priori analytic propositions). In the case of weak verification it is possible to provide a proof of probability of a proposition. (E.g. All synthetic propositions). Since all synthetic propositions are only probably true, they can be verified only in the weak sense. It is self-contradictory to say that propositions concerning syntax or logical principles possess significance and at the same they are some important types of non-sense. The logical positivist's aim is to defend science, but by re-interpreting science to suit their principles they don't defend the sciences. By sense-experience, positivists like Carnap mean introspection and even mystical experience also. This is deviation from the original stand point of the logical positivism. But in spite of its drawbacks, it made an impact on several fields of philosophy such as epistemology and ethics.

1.9   LET US SUM UP

In this unit we have seen the development of logical positivism as a development of philosophy of science in dealing with the question of verification and accuracy of facts and data.

1.10   KEY WORDS

Verification theory   **:**   The concept of probability in the meaning of statements. The general propositions of science are significant because it is possible to observe facts which render them probable if not certain.

1.11 FURTHER READINGS AND REFERENCES

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