CHAPTER III

LOGICAL NECESSITY AND SCEPTICISM
Transition from Greek to modern scepticism is marked by the fact that even the extreme sceptic of the modern time, David Hume, allows ‘logically true propositions’ to be free from doubt. He allows the notion of certainty to them. ‘Logically true propositions’ does not mean only those propositions, which belong to the discipline of logic. ‘Logically true’ means not ‘empirically true’: their truth is independent of experience. Not only the propositions of logic, the propositions of geometry, arithmetic, algebra etc., are all ‘logically true’. This lead a philosopher to think that ‘logically true’ propositions are absolutely certain, that is, are beyond doubt.

In order to clarify the notion of logical certainty, i.e. certainty applied to ‘logically true propositions’, we have to consider the nature of several allied concepts. Some of these concepts form pairs. For example, the concept of a priori is paired with a posteriori: the concept of necessity is paired with contingency, transcendental with empirical. Perhaps the most important pair is that of analytic and synthetic. Out of these concepts some of them are favoured by the rationalists and others are favoured by the empiricists. Rationalists roam in the world of necessity, which is characterised by a priority, certainty, analyticity, transcendentality, etc. Opposing them, the empiricists roam in the world of contingency, which is characterised by a posteriority, probability, syntheticiity, empiricality, etc. The constituents of these pairs are so intimately related that the discussion of one of them involves the discussion of the other. If you wish to know about ‘contingency’, you have also to know what ‘necessity’ means? So whether one is a rationalists or an empiricists he is required to study all these concepts.
1. LEIBNIZ'S DISTINCTION BETWEEN NECESSITY AND CONTINGENCY:

The invention of logical truths has reduced the scope of scepticism. It is now restricted only to empirical propositions. But Leibniz, who is responsible for so many distinctions and divisions which we hold these days, did not allow doubt with respect even to 'empirically true propositions'. For him, all true propositions, be they empirical or a priori, are analytic. He did not distinguish analytic judgements from synthetic judgements as we do these days. Our distinction is rooted in Kant and the post-Kantian philosophers whose views were very different from Leibniz. As Ishiguro points out, it is better "not to use 'analytic' and 'synthetic' at all, with their post-Kantian associations, to characterize Leibniz's theories."¹

Leibniz and Kant are two philosophers who have drawn the attention of the philosophers of our time; therefore we begin our discussion with Leibniz who was historically prior to Kant. Logical truths have been described by Leibniz as truths of reason. According to Leibniz, "There are also two kinds of truths: truths of reasoning and truths of fact. Truths of reasoning are necessary and their opposite is impossible; those of fact are contingent and their opposite is possible. When a truth is necessary, the reason for, it can be found by analysis, that is, by resolving it into simpler ideas and truths until the primary ones are reached."² So, according to Leibniz, necessity is attached to those propositions of which the opposite is impossible. Thus Leibniz is applying the law of contradiction to necessary propositions. Necessary propositions can be of two kinds, either they are primary or axiomatic or deducible from these primary truths. Concerning primary truths Leibniz says, "Primary truths are those which either state a term of itself or deny an opposite of its opposite. For example, 'A is A', or 'A is not not - A'; 'if it is true that A is B, it is false that A is not B, or that A is not - B'; again, 'Each thing is what it is', 'Each thing is like itself, or is equally to itself', 'Nothing is greater or less than itself' and others of this sort which, though they may have their own grades of priority, can all be included under the name of 'identities'."³ By
grades of priority' Leibniz means the steps that are required in reducing a proposition to the primary truths. Suppose a given proposition takes four steps for its reduction to primary truths, then it has a lower grade to the proposition which requires only two steps for its reduction to primary truths.

Those truths of reason that are not primary truths are reduced to primary truths with the help of definitions of certain constituents of propositions. Leibniz gives the following example. "A proposition accepted as an axiom by the mathematicians and all others alike is 'The whole is greater than its part', or 'A part is less than the whole'. But this is very easily demonstrated from the definition of 'less' or 'greater', together with the primitive axiom, that of identity." So an axiomatic truth 'a part is less than the whole' is derived from the primitive axiom of identity together with the definition of 'less'. As Leibniz further writes, "that which is equal to a part of the whole is less than the whole (by the definition of 'less'); therefore a part is less than the whole."

Leibniz did not believe in indeterminacy of truth. According to him, a proposition is either true or false. He further believed that all affirmative truths are analytic. As he remarks, "An affirmative truth is one whose predicate is in the subject; and so in every true affirmative proposition, necessary or contingent, universal or particular, the notion of the predicate is in some way contained in the notion of the subject, in such a way that if anyone were to understand perfectly each of the two notions just as God understands it, he would by that very fact perceive that the predicate is in the subject." Obviously we are not Gods, therefore the subjects of many affirmative truths do not appear to us to contain their predicates. Only a few subjects contain their predicates. We distinguish the proposition 'The table is made of wood' from the proposition 'The table is extended'. Though the proposition 'the table is made of wood' is true, 'wood' is not included in the subject, the table. It is for the reason that
the table could have been made out of iron. But whether the table is made of iron or of wood, it would remain extended. Therefore the predicate of the proposition 'the table is extended' is included in its subject. So the analytic propositions could be both necessary as well as contingent. So neither the notion of analyticity nor that of contingency held by Leibniz is the same as held by the philosophers of our time. A contingent proposition for us is synthetic. But it is absurd to maintain that an analytic proposition is synthetic.

Perhaps Leibniz was conscious of our difficulty. He makes a distinction between an absolutely necessary proposition from other kinds of proposition, which would satisfy us. He says, "An absolutely necessary proposition is one which can be resolved into identical propositions, or, whose opposite implies a contradiction." He further distinguishes necessary proposition from those that are impossible and possible. So there are three classes of propositions necessary, impossible and possible. Referring to his necessary propositions he says, "This type of necessity, therefore, I call metaphysical or geometrical. That which lacks such necessity I call contingent, but that which implies a contradiction, or whose opposite is necessary, is called impossible. The rest are called possible." What we call these days logical necessity is described by Leibniz as metaphysical or geometrical necessity. For him, necessity is contrasted with impossibility and possibility, that which is not necessary could be either impossible or possible.

Just as Leibniz reduces all truths of reason to primary truths, he reduces all propositions to the subject-predicate form of propositions. He considers subject of a proposition as its antecedent and the predicate as its consequent. He uses a spatial metaphor in thinking that the consequent is contained in the antecedent. In affirming a proposition we are bringing out the consequent from the antecedent. Even in the case of
a contingently true proposition the predicate is a consequent, therefore it is contained in
the subject which is antecedent. But unfortunately human understanding is not the
understanding of God. So we do not have a perfect understanding of the notions of
subject and predicate. It is the failure of human understanding that the notion of
predicate in a contingent proposition does not appear to us to be included in the subject.
Perhaps it is owing to this failure that certain propositions appear to us only contingent.
Perhaps for God all propositions are of equal value. It is because of the failure of human
understanding that “In the case of a contingent truth, even though the predicate is really
in the subject, yet one never arrives at a demonstration or an identity.”

The distinction between truths of reason and truths of fact has also been
explained in terms of ‘essences’ and ‘existences’. As Leibniz remarks, “there are some
propositions which pertain to essences, and others to the existences of things.
Propositions of essence are those which can be demonstrated by the resolution of terms;
these are necessary, or virtually identical, and so their opposite is impossible, are
virtually contradictory. The truth of these is eternal; not only will they hold whilst the
world remains, but they would have held even if God had created world in another way.
Existential or contingent propositions differ entirely from these.... These propositions
are such as are true at a certain time; They express, not only what pertains to the
possibility of things, but also what actually exists, or would exist contingently if certain
things were granted - for example, that I am now alive, or that the Sun is shining.”

The propositions pertaining to essences i.e. the metaphysically necessary propositions, are
the propositions whose opposite is impossible and which are true eternally. Eternal
truths for Leibniz mean the truths, which hold not only in this world that exists but also
in the possible world that could have existed if God willed it to exist. Rather, for
Leibniz, the truths in question hold in all possible worlds. These truths do not pertain to
the existence of things, whether actual or possible. According to Leibniz, only those
propositions pertain to essences "which are true with absolute universality, and which cannot be violated even by miracle."11 The absolute universality covers all possible worlds.

Leibniz gives supreme importance to the truths of reason. So he explains their nature in different ways. Consider the following remark of Leibniz. "If I should discover any demonstrative truth, mathematical or other, while dreaming (as might in fact be), it would be just as certain as if I had been awake. This shows us how intelligible truth is independent of the truth of the existence outside of us of sensible and material things."12 One may find some similarity between Leibniz and Descartes concerning the nature of mathematical or demonstrative truths. In his First Meditations when Descartes came to doubt the mathematical truths, he failed. His dream argument failed to displace these truths. These truths remain certain whether one was dreaming or one was awake. It is these demonstrative truths that led Descartes to introduce the hypothesis of the demon. But Leibniz requires no demon. For Leibniz the truth of demonstrative propositions is independent of what exists in an actual or a possible world. In dream the existing reality is duplicated. It is the images of sensible and material things that occur in our dream. Neither the material things nor their images are relevant for the truth of mathematical propositions.

So far as the nature of truths of facts is concerned, the hangover of the Cartesian thinking is clearly visible on the thoughts of Leibniz. Consider his remark "The immediate perception of our existence and of our thoughts furnishes us with the first truths a posteriori, or of fact, i.e. the first experiences, as the identical propositions contain the first truths a priori, or of reason, i.e. the first lights. Both are incapable of proof, and may be called immediate."13 In the Cartesian idiom Leibniz is concerned with the propositions 'I think' and 'I exists'. We are led to these truths through immediate
perception. They are a posteriori truths and not a priori truths. However, they behave like a priori truths among the body of a posteriori truths. The truths of ‘I think’ and ‘I exists’ have great importance. They function like axiomatic truths, the truths that are known a priori. Just as primary truths are axiomatic among the truths of reason, so the truths of ‘I think’ and ‘I exists’ are axiomatic among the truths of fact i.e. among the truths that are discovered a posteriori.

According to Chisholm, “the traditional term for those a priori propositions which are ‘incapable of proof’ is axiom.” This means that the propositions ‘I think’ and ‘I exists’ are as axiomatic as are the propositions ‘the whole is greater than its part’ and ‘A part is less than the whole’. Of course the former pair of propositions is not a priori, it is a posteriori. Not very unlike Descartes, Leibniz seems to be suffering from two opposite pulls. One pull is to dissolve the distinction between truths of reason and truths of fact. The opposite pull is to retain the distinction between the two. Of course both Leibniz and Descartes were mathematicians and attempted to give mathematical foundation to our knowledge of the world. But most of the interpreters of Leibniz believe that Leibniz retained a rigid distinction between truths of reason and truths of fact.

The distinction between necessary and contingent truths has been attacked by Russell in his work on Leibniz. Since the world that was created by God is the best of all possible worlds, perfect in every respect, it cannot be considered as free creation of God. God was necessitated to create this world. Not only this, all that happens in the world is necessary. How can there be any kind of contingency in the world? As Rescher writes about Russell’s view on this issue, “He views Leibniz’s system as au fond necessitarian, and regards the painfully drawn distinction between the necessary and contingent truths as null and void. He charges Leibniz’s system with involving that universal necessitation
which its author was so ready to decry in Spinoza.\textsuperscript{15} Though Leibniz rejected
necessitarianism of Malebranche and Spinoza, according to Rescher, his "thinking came
perilously close to an acceptance of necessitiesarianism."\textsuperscript{16} Rescher quotes Leibniz to
exhibit his necessitiesarianism. According to Leibniz, "since God is the most perfect mind,
however, it is impossible for him not to be affected by the most perfect harmony, and
thus to be necessitated to do the best by the very ideality of things."\textsuperscript{17} So God was
necessitated to do what was the best. Russell was certainly not wrong in attacking
Leibniz on the distinction between contingent and necessary truths. According to
Rescher, Leibniz became free from necessitiesarianism of Malebranche and Spinoza at a
later stage of his life. "He became increasingly discontent with a necessitiesarianism that
blocked the way to genuine contingency in nature."\textsuperscript{18}

Leibniz was himself troubled with the distinction between necessary and
contingent propositions. He was unable to distinguish them. However, he solved the
difficulty by applying mathematics to the situation. Referring to the perplexity caused by
the subject-predicate analysis of the contingent propositions and the removal of this
perplexity. Leibniz writes, "There is something which had perplexed me for a long time
-how it is possible for the predicate of a proposition to be contained in (inessse), the
subject without making the proposition necessary. But the knowledge of Geometrical
matters, and especially of infinitesimal analysis, lit the lamp for me, so that I came to see
that notions too can be resolvable in infinitum."\textsuperscript{19} So the predicate of the proposition that
is necessary is analysed out of the subject by taking finite steps. But the predicate of the
proposition that is contingent is analysed out of the subject by taking infinite steps. If
some thing is achieved by taking infinite steps then it is humanly impossible to achieve
it. A human being can achieve only be taking finite steps. So, though both the true
necessary propositions and true contingent propositions are analytic, it is possible to
demonstrate the analytic character of the former without succeeding in exhibiting the
analytic character of the later. So the former are demonstrative propositions and the non-
demonstrative propositions. So, Leibniz has succeeded in saving the contingent
propositions from being converted into necessary propositions without abandoning the
subject-predicate analysis of propositions.

Leibniz is not satisfied with the modal concepts *necessity*, *possibility* and
*impossibility*, so he introduces further modalities. He introduces the concept of physical
or moral necessity. Physical or moral necessity is non-logical necessity. It is different
from metaphysical necessity. Though contingent truths are not metaphysically or
logically necessary, they too are necessary because they refer to an existence which is
the best possible under the given circumstances. Rescher comments that, "Leibniz calls
the 'necessity' of contingent truths moral necessity as opposed to the logical or
geometrical or absolute or metaphysically necessity of necessary truths, and he states
that 'moral necessity stems from the choice of the best'." Rescher's comment can be
justified in Leibniz's own words. Leibniz writes, "although the world is not
metaphysically necessary, such that its contrary would imply a contradiction or logical
absurdity, nevertheless it is necessary physically, that is, determined in such a way that
its contrary would imply imperfection or moral absurdity." Not only that this is the
best of all possible worlds but, also any event occurring in the world is the best possible
event under the given circumstances. If metaphysical necessity exhibits the essence of
this world, then moral or physical necessity gives content to that essence. Contingent
truths are governed by physical necessity in the same way in which necessary truths are
governed by metaphysical necessity. Though not a strict determinist like Malebranche
and Spinoza, Leibniz certainly exhibits the hangover of determinism. The principle of
perfection has led him to this subtle form of determinism.
In our days Leibniz is known through his concept of the possible world. This concept requires clarification. The modern logicians and non-logicians who use modal concepts trace their views to Leibniz. Though Leibniz talked about possible worlds he accepted the doctrine of ‘one-substance’, ‘one-world’. Each substance is restricted to its own world. It is impossible for numerically the same substance in different possible worlds. As Rescher points out referring to Leibniz, “No substance can - even in hypothesis - be prized loose from its world - environment and transposed into some other possible world. No possible substance can populate two distinct possible worlds, and no member of one world can be compatibly united with any member of any other.” If Caesar and Tom have taken their birth in this world then it is impossible for them to have taken birth in any other possible world. Of course it is possible that Caesar and Tom are the names of some individuals also in other possible world. But those individuals would be numerically different from Caesar and Tom of this world. Therefore there is no question of understanding the trans-world identity of Caesar and Tom. To maintain the possibility of other Caesars and Toms, occupying their position in other possible worlds, is prohibited by Leibniz. Such an imagination would be possible only if one rejects the doctrine of one-substance to one-world. One has to be careful about the notion of contingency that Leibniz introduced. Though he restricts a given substance to a given world he allows the possibility of another substance in another world that differs only in one or two respects from the substance that exists in the actual world. We can imagine two Julius Caesars, one who exists in this world, whose is name recorded in history, the other Julius Caesar, occupies his position in other possible world. The only difference between these two Caesars is that the historical Caesar crossed the Rubicon whereas the possible Caesar did not. When Leibniz considered ‘Caesar crossed the Rubicon’ as a contingent truth he thought that the proposition ‘Caesar did not cross the Rubicon’ could be true in some other possible world. As Hide Ishiguro points out, Leibniz “regarded proposition like ‘Caesar crossed the Rubicon’ as
being contingent because God could have made a world in which that was not the case. Talking about possible Caesars is not an irrelevant talk because we make counterfactual statements like ‘had Caesar not crossed the Rubicon, Pompey would have defeated him’. This counterfactual conditional makes no sense if we do not imagine a Caesar who failed to cross the Rubicon. So we have to imagine a possible world in which Caesar did not cross the Rubicon. History of Caesar in the possible world would be very different from that of the Caesar who existed in our world. For example, Pompey, who failed to defeat Caesar in our world, would have defeated Caesar of the possible world. Ishiguro’s analysis is based on the following remark of Leibniz, “These worlds are all here, namely in thought. I will show you where one can find, not exactly the same Sextus whom you have seen (this is not possible, he carries always within himself what he will be), but future Sextuses who will have all that you already know of the real Sextus, but not all which, without our perceiving it, is already within him, nor consequently all that will happen to the real Sextus....” Like Sextus, Caesar who was defeated by Pompey would have very a different history from the history in which Pompey failed to defeat Caesar.

The distinction between essence and existence and further maintaining that the truths of reason pertain to essences and the truths of fact pertain to existences may lead one to think about the possibility of a world which is restricted only to essences. But this would be wrong. The concept of the possible world is the concept of the world that could possibly exist. So a possible world is a world of essences and in those essences is written the potentiality to exist. No world is deprived of essences. So also there is no world which is deprived of its potentiality to exist. Existence is rooted in essences and contingent truths have their foundation in eternal truths. According to Leibniz, it is “Out of truths that are eternal or essential or metaphysical there arise truths that are temporal, contingent, or physical. First we must notice, from the very fact that something exists
rather than nothing, that there is in things that are possible, or in possibility or essence itself, a certain need for existence, or (if I may so put it) a claim to exist; and, to put it in a word, that essence in itself tends towards existence." Our existing world is one of the possible worlds, which has been actualised by God. So existence is rooted in the very essence of a possible world. Leibniz has reached this conclusion through the perplexity 'why is there something rather than nothing'. This perplexity has brought existence closer to essence. The rigid distinction between the two has disappeared. The perplexing question, why is there something rather than nothing, has taken rebirth in existentialism. But the existentialists came to very different conclusion from that of Leibniz. The existentialists give priority to existence over essence. They seem to have rejected Plato who gave priority to essence over existence. Leibniz has not given priority to existence over essence. He has simply put existence potentially in essences. No essence is deprived of its potential existence. According to Blackham, both Heidggear and Satre accepted that "existence precedes essence". But the primacy of existence has been explained in terms of essence. Therefore, essence would become prior to existence. While explaining Heidggear's view Blackham points out that for Heidggear "The essence of Dasein is in its existence." Dasein means the existence of human beings. The fact that one can talk about essence of the Dasein, itself means essence is prior to existence. Whatever may be the view of Leibniz, it is objectionable if Leibniz had not allowed the possibility of existence to its essence. An essence, which could not possibly exist, is no kind of essence for Leibniz.

Echo of Leibnizian thought can also be heard in Wittgenstein. According to Wittgenstein, "Objects make up the substance of the world." Substance is what is common to all possible worlds. According to Wittgenstein, "The configuration of objects produces states of affairs." In the idiom of Leibniz objects are essences whereas their configurations exhibit 'truths' that are temporal, contingent, or physical.
According to Wittgenstein, "If things can occur in the states of affairs, this possibility must be in them from the beginning." In the Idiom of Leibniz every essence claims to exist, it tends towards existence. The possibility of existence is in essences from the very beginning. Of course this does not mean that Wittgenstein's view is the same as that of Leibniz's. According to Leibniz, the quantity of essence exhibited in one possible world may be different from the quantity of essence exhibited in another possible world. Leibniz came to the conclusion, "That out of the infinite combinations of possible, and the infinite possible series, that one exists by whose means the greatest possible amount of essence or possibility is brought into existence." Our world, the possible world that exists, therefore has the greatest amount of essence. Perhaps Leibniz means to say that a world which exhibits less amount of physical or moral necessity would also be a world in which there would be less amount of metaphysical necessity i.e. less amount of essence. Our world is the best of all possible worlds therefore it exhibits the highest amount of physical and metaphysical necessities. Other possible worlds are less perfect than our's.

The philosophical views of Leibniz are quite complicated. However, it is clear that he wished to show that contingent truths and necessary truths do not exist independently of one another. It is not the case that necessary truths are true about one possible world and contingent truths are true about another possible world. Contingent truths presuppose the necessary truths, therefore they hold only in that world where necessary truths prevail. Eternal truths are the grounds for the temporal truths. It is no surprise that our world is governed by not only the eternal laws, but also by the contingent laws, not only by the material necessities but also by the formal necessities. As Leibniz points out "indeed in actual fact we find that everything in the world takes place in accordance with the laws of the eternal truths, not only geometrical but also
metaphysical laws; that is, not only according to material necessities, but also according to formal necessities."

In the end it would be interesting to consider the reaction of Leibniz to Descartes' dream argument. Dreams have been used to question the reality of the external world. According to Leibniz "we must admit it to be true that the criteria for real phenomena thus far offered, even when taken together, are not demonstrative, even though they have the greatest probability; or to speak popularly, that they provide a moral certainty but do not establish a metaphysical certainty, so that to affirm the contrary would involve a contradiction. Thus by no argument can it be demonstrated absolutely that bodies exist, nor is there anything to prevent certain well-ordered dreams from being the objects of our minds, which we judge to be true and which, because of their accord with each other, are equivalent to truth so far as practice is concerned. Indeed, even if this whole life were said to be only a dream, and the visible world only a phantasm, I should call this dream or this phantasm real enough if we were never deceived by it when we make good use of reason. But just as we know from these marks which phenomena should be seen as real, so we also conclude, on the contrary, that any phenomena which conflict with those that we judge to be real, and likewise whose fallacy we can understand from their causes, are merely apparent." Since our statements about physical phenomena fail to establish metaphysical certainty, they fail to demonstrate the existence of physical bodies. This follows from the fact that their denial does not involve a contradiction in terms. These statements express only contingent truths of which the negation is possible. Suppose on the ground of my visual experience I say that 'there is an apple on the table'. Negation of this statement does not involve a contradiction in terms. I can very well imagine a world in which this statement is false. Now at this time everything occurs in another possible world except the presence of apple on the table in that world. Our statements about physical phenomena, therefore,
lack metaphysical necessity. If they exhibit any kind of necessity, they exhibit only
moral or physical necessity. For Leibniz ‘necessity’ has the same meaning as ‘certainty’.
So in this context he has used the expression ‘metaphysical certainty’ rather than
‘metaphysical necessity’, so also he used ‘moral certainty’ rather than ‘moral necessity’.
So Leibniz has come to conclude that it is impossible to demonstrate the existence of
physical bodies or physical reality. We are familiar with this kind of argument offered by
the empiricist philosophers from John Locke to A.J.Ayer. In this context, Leibniz
appears as the founder of empiricistic thought. Referring to Leibniz, Rescher points out
“If holding that only by observational experience can man obtain knowledge of ‘matters
of fact and existence’ makes the empiricist, then Leibniz is as much an empiricist as
any.”34

Leibniz has attacked dream argument in his own fashion. He has shown the
futility of this argument. He accepts that ‘well-ordered dreams’ may not differ from the
experiences that occur when we are awake. But no damage would be done to our
practical life even if it is accepted that our whole life is a dream. It would hardly
introduce any kind of obstruction to our actions. The possibility that the whole life is a
dream would fail to prohibit us from making the distinction between ‘reality and
appearance’. Anything that conflicts with our ordered dreams would be rejected. So we
will continue rejecting any thing that conflicts with our waking experience. The only
difference would be that we would be calling our waking experience as dream
experience. Soon we would become acquainted with this new idiom. The sceptic is only
producing a new idiom. Our ‘waking experiences’ occur as ‘dreaming experiences’ in
the idiom of the sceptic.
2. HUME ON NECESSARY TRUTHS:

Concerning Hume's place in the History of Philosophy, Stroud points out, "Hume's assigned role was to carry the empiricist philosophy of Locke and Berkeley to its logical and incredible conclusion, thus setting the stage for Kant and eventually for the final Hegelian liberation." But on the distinction between a priori and empirical knowledge, Hume was closer to Leibniz than either to Locke or to Berkeley or to Kant and Hegel. His distinction between the judgements concerning relations of ideas and judgements concerning matters of facts echoes Leibniz's distinction between 'truths of reason' and 'truths of fact'. For Leibniz the truths of reason and truths of fact exhaust the realm of truths. No third variety of truths existed for Leibniz. So also Hume's dichotomy of relations of ideas and matters of fact is exhaustive and complete. According to Hume, judgements concerning the relations of ideas are the property of "the sciences of Geometry, Algebra, and Arithmetic; and in short, every affirmation which is either intuitively or demonstratively certain." Leibniz too accepted only those truths as truths of reason, which were either self-evident axioms or those, which were reducible to them. There seems to be no difference between the views of Hume and Leibniz on this issue. So also Leibniz’s truths of fact correspond with Hume’s matters of fact. Judgements concerning matters of fact would be deprived of certainty because their negation does not involve a contradiction in terms. As Hume points out, "The contrary of every matter of fact is still possible; because it can never imply a contradiction, and is conceived by the mind with the same facility and distinctness, as if ever so conformable to reality. That the Sun will not rise to-morrow is no less intelligible a proposition, and implies no more contradiction than the affirmation, that it will rise. We should in vain, therefore, attempt to demonstrate its falsehood. Were it demonstratively false, it would imply a contradiction, and could never be distinctly conceived by the mind." So, like Leibniz, Hume uses the law of contradiction to exhibit the contingency of truths of fact. Negation of a truth of fact does not involve a contradiction in terms; its negation is possible. In the idiom of Leibniz we can very well conceive of a world in which "The Sun will not rise
tomorrow' is true. So the truth of 'The Sun will rise tomorrow' is restricted to this world. Hence, it fails to exhibit mathematical certainty. We have already shown how 'Caesar crossed the Rubicon' is only contingently true because its truth is restricted to this world. It is quite possible to imagine a world in which Caesar did not cross the Rubicon. In the same way, it is quite possible to imagine a world in which the Sun will not rise tomorrow. Therefore 'The Sun will rise tomorrow' is contingently true i.e. true in this world without being truth in any other world. Trans-world truth is restricted to the propositions of geometry, algebra and arithmetic.

Hume accepted only one kind of necessity or certainty, that which is restricted to mathematical propositions. Call this necessity logical or metaphysical. There is no such necessity as physical or moral. Leibniz, as we have already seen, allows physical or moral necessity to operate in the matters of fact. But Hume would oppose Leibniz. From Hume's point of view Leibniz does not have a pure concept of contingency. A pure concept of contingency would not allow any kind of necessity operating in the physical world. Since every fact is independent of every other fact no kind of necessity is possible in the world of facts. So the Humean picture of the physical world is very different from the picture that Leibniz had. For Leibniz, any event that occurs in the world, any fact that it is actualised, is the most suitable occurrence or fact under a given circumstance. So he came to believe in the physical or moral necessity operative in our world. This picture had led Russell to oppose Leibniz on this issue, because this picture dissolves the distinction between necessary and contingent truths. All truths become necessary. Thus Leibnizian contingent truths carry the impurity of necessity. Hume believed in pure concept of contingency. Neither metaphysical nor physical necessity governs such a fact.

The opposite of metaphysical or logical necessity is contingency, and not physical or moral necessity. Hume believed in the dichotomy of necessary and contingent truths. For him there existed no such dichotomy as the dichotomy of metaphysical and physical
necessity. The truths of geometry, algebra and arithmetic are necessary. Whereas those truths that pertain to empirical sciences are contingent. Either a truth is necessary or contingent i.e. either it belongs to the system of necessary truths or to the system of contingent truths. There is no third variety of truths such as physically or morally necessary truths. So Hume rejects outrightly the Leibnizian interpretation of the matters of fact.

If the events of the world are not allowed any kind of certainty or necessity then to many the worlds would appear as a chaos. In such a situation such a question as, why a given event occurred and not another, cannot be answer. Such a question cannot even be asked. Rejection of the picture of a chaotic world has led philosophers to the Leibniz type views. Hume rejects the operation of necessity and certainty in the world, yet saves the world from turning into a chaos.

In order to show that there is no necessity that governs the nature, Hume has denied the necessity of causal relation, the relation that exists between cause and effect. He has reduced the quest for observing necessity in nature to the quest for observing necessity in a causal situation. According to him, “All reasonings concerning matters of fact seem to be founded on the relation of Cause and Effect. By means of that relation alone we can go beyond the evidence of our memory and senses.” Once it is shown that the causal relation is not a necessary relation, it would be shown that all our judgements concerning matters of fact are purely contingent without having any kind of necessity. For the foundation of these judgements is the relation of cause and effect. Hume has attacked the foundation rather than attacking what is erected on that foundation. Once the foundation falls what is erected on the foundation would also fall. Hume uses the notions of cause and effect in a wider sense. We generally restrict our judgements to states or events. We say that one state or event has been caused by another
state or event. Concerning the relation of cause and effect, according to Ayer, "Hume's intentions are best represented by construing the relation, in his view of it, as holding between matters of fact, into which objects and events, actions and passions, states and processes, whether physical or mental, can be made to enter." So Hume studies the relation of cause and effect under diverse situations. The situation in which one moving billiard ball causes another billiard ball to move is different from the situation in which a wound causes pain or meeting a friend causes happiness. Though these situations are diverse, what is not diverse is the relation of cause and effect. This relation is common to all the situations. If the causal relation were necessary then the movement of one billiard ball would necessarily cause another billiard ball to move. Similarly, a wound necessarily leads to pain and the appearance of a friend would necessarily lead to happiness. Are we right in awarding necessity to a causal relation? If right, How? If not right, why? So the analysis of causation is one of the most important issues of Hume's philosophy. Hume's view of the world is grounded in this analysis.

If the idea of causal necessity is genuine, then it must have its source in impression. All ideas that occur to our mind have their source in impression. So he is led to analyse the casual situation in order to see whether he has any impression corresponding to the idea of causal necessity. So a causal situation, for Hume, involves three constituents. One is the relation of priority i.e. the event which is supposed to be the cause is prior to the event which is supposed to be its effect. The second is the relation of contiguity i.e. the event which is the cause is contiguous with the event which is its effect. The third and the most important constituent of the causal situation is the necessary connection between cause and effect, i.e. an event which is the cause is necessarily connected with the event which is its effect. Hume has no difficulty with relations of priority and contiguity because he finds their sources in impression. He has difficulty only with necessary connection. He fails to discover the source of necessary
connection in impression. How could Hume have the impression of necessary connection when he even fails to have the impression of connection? He succeeds in having “experience of the frequent Conjunction of objects, without being ever able to comprehend anything like Connexion between them.” What is true about objects is also true about events and states. Hume finds conjunction of events and states without finding any connection between them. These conjoined states and events exhibit contiguity. But the necessary connection between them would be missing. As Hume remarks, “It appears that, in single instances of the operation of bodies, we never can, by our utmost scrutiny, discover anything but one event following another, without being able to comprehend any force or power by which the cause operates, or any connexion between it and its supposed effect.” While discussing Leibniz we have seen there is no such thing as a chance occurrence of an event. Only the best under the circumstance was allowed to occur. But, for Hume, events are like heaps of stones, each stone is distinct from the other, and it is only a chance which has brought them into a given heap. They could have been lying elsewhere. Hume treats events like objects. As he remarks, “All events seem entirely loose and separate. One event follows another; but we never can observe any tie between them. They seem conjoined but never connected.” So it is a matter of chance that one event is contiguous with the other or is prior to it. It is this kind of chance that leads us to imagine that there exists a causal connection between two events. The connection is not a constituent of the causal situation. It is invention of our mind. If a given set of events recurs again and again in the same fashion, exhibiting the relations of priority and contiguity, then according to Hume, “The mind is carried by habit, upon the appearance of one event, to expect its usual attendant, and to believe that it will exist. This connexion, therefore, which we feel in the mind, this customary transition of the imagination from one object to its usual attendant, is the sentiment of impression from which we form the idea of power or necessary connexion.” So the necessary connection which our mind has invented does not have any corresponding
impression. There can be no genuine idea in our mind of which the source does not lie in the impression. Hume is not ready to accept like Kant that the idea of causal connection is a priori. For Hume the concept of a priori idea is a contradiction in terms. All ideas take their birth in sense experiences. Hence, Hume rejects idea of necessary connection between events because we fail to experience any such connection.

Since causation is the foundation of our reasoning concerning matters of fact, our reasoning would never lead us to conclusions that are certain and necessary. There can be no empirical generalisation, which would be necessary and certain. They would exhibit only probable truths. Certainty and necessity is restricted only to mathematical truths. This is Hume’s achievement. Though he has prohibited his scepticism to penetrate into the realm of mathematical truths, he has allowed it a free access into the realm of facts, the realm of experience. If empiricism means allowing scepticism to have its say in the matters of empirical knowledge, then Hume was undoubtedly an empiricist. If he were right then no empirical judgement would be free from uncertainty and doubt. There is no doubt that by prohibiting rationalism to have its say in the matters of empirical knowledge, he has closed the doors of empirical knowledge to dogmatism. But then he has opened these doors for scepticism.

To conclude, consider the nature of Hume’s generalisation that all reasoning concerning matters of fact has its foundation in the relation of cause and effect. Is this generalisation deductive or inductive? It is impossible for it to be deductive. Philosophy is certainly not a deductive science. Therefore what Hume says does not belong to any deductive science. The other alternative is that Hume has produced an empirical generalisation concerning human reasoning. But if it is an inductive generalisation than it is only probably true. Maybe there are instances concerning matters of fact which are not founded on the relation of cause and effect, and those instances of reasoning which
are free from the relation of cause and effect may possibly exhibit certainty and necessity. There may be empirical propositions which may exhibit necessity and certainty. This conclusion follows from Hume's own distinction between the relations of ideas and matters of fact. So Hume has produced a philosophical system which is self-refuting.

2. KANT'S IDEA OF NECESSITY:

Kant seems to be influenced by two philosophers more than by any others: one was his own German predecessor Leibniz and the other was the British predecessor Hume. If Hume brought the British empiricism to its logical conclusion, Leibniz brought the Continental rationalism to its logically conclusive stage. Kant's strategy was to struggle against both Leibniz and Hume, against the Continental rationalism and the British empiricism. The result of the strategy was the emergence of Critical philosophy, which both absorbed and transcended the Continental rationalism and British empiricism.

For Kant the distinction between a priori and empirical knowledge is most important. Therefore The Critique of Pure Reason opens with this distinction. Kant accepts the temporal priority of experience over knowledge, because it is 'with experience all our knowledge begins'. But this does not mean that it ends with experience. According to Kant "though all our knowledge begins with experience it does not follow that it all arises out of experience." Kant accepts the possibility of a priori knowledge, that is, knowledge that begins with experience but does not arise out of it. A priori knowledge is independent of experience, "not knowledge independent of this or that experience, but knowledge absolutely independent of all experience." In order to explain further the nature of a priori knowledge, he uses logical or metaphysical notion
of necessity. A priori and a posteriori are epistemic concepts. They characterise knowledge. But the concepts of necessity and contingency are applied to propositions to be known; they express their logical character. According to Kant, necessity and strict universality are "Criteria of a priori knowledge, and are inseparable from one another." This means all those propositions which are necessary and universal are a priori; Conversely, we can say that all a priori propositions are universal and necessary. Kant has made a priori and necessity as interchangeable concepts. Leibniz and Hume would hardly have any disagreement with Kant on his distinction between a priori and a posteriori knowledge.

Leibniz's and Hume's dichotomy of truths of reason and truths of fact came to be questioned by Kant. Like Leibniz he accepted the explanation of truth in terms of subject - predicate form of propositions, as if all propositions are reducible to this form. He further accepted, like Leibniz, that the predicate of analytic proposition is contained in its subject. But unlike Leibniz he talked about synthetic propositions in which the predicate is not contained in its subject. As Kant says, "In all judgements in which the relation of a subject to the predicate is thought... this relation is possible in two different ways. Either the predicate B belongs to the subject A, as some thing which is (covertly) contained in this concept A; or B lies outside the concept A, although it does indeed stand in connection with it." The range of analytic propositions for Kant is restricted only to those propositions, which are for Leibniz only finitely analytic. What Leibniz described, as infinitely analytic propositions are synthetic propositions according to Kant. Kant gives the example of 'all bodies are extended'. This is the example of an analytic proposition. The concept of 'extension' in this proposition has been analysed out of the concept of 'body'. A synthetic proposition is like 'all bodies are heavy'. The concept of 'heavy' is not included in the concept of 'body'. Since the expression 'extension-less body' is a contradiction in terms, the concept of extension is included in
the concept of body. But the expression ‘weightless body’ is not a contradiction in terms. Therefore the concept of weight is not included in the concept of body. So saying that a body has weight gives us some new information about a body, the information which I do not have when I know that something is a body. But saying that body is extended I obtain no new information. I could not have known what a body is unless I know what it is for it to have extension. If in an analytic proposition I analyze the predicate out of the subject, in a synthetic proposition the predicate adds something new to the subject. If in one case the process of analysis is involved, in the other case the process of synthesis is involved. For his view on mathematics Kant rejects both Leibniz and Hume. Though mathematical propositions are a priori they are not analytic, they are synthetic. So universality and necessity are the marks not only of analytic propositions, they also characterize some synthetic propositions. Of course all synthetic propositions are not a priori. All synthetic propositions of mathematics are a priori and some synthetic propositions of physics are a priori. He could succeed in showing that mathematical propositions are synthetic by introducing the concept of time into mathematics.

Kant considers the principle of contradiction as the principle of analysis. Not in all cases one may succeed in conceiving a predicate to be contained in a subject. In such cases the principle of contradiction may be applied. If the denial of a proposition involves a contradiction in terms then its assertion would be analytic. It is in this sense that the principle of contradiction would be considered as the principle of analysis. The expressions ‘container’ and the ‘contained’ may simply be metaphorical. These expressions may have no literal significance. However, they acquired some literal significance by focusing our attention on the law of contradiction. Saying that ‘the subject’ of a proposition contains its predicate simply means, according to Korner, that “its denial would be a contradiction in terms.” So Kant has provided logical
grounding for his analytic propositions. Our success in extricating predicate from the subject depends on the logical instrument of contradiction. The cases where law of contradiction fails in showing the analytic character of propositions belongs to the discipline of mathematics in general and some fundamental propositions of physics in particular.

Kant defines the synthetic character of mathematical judgements not terms of the law of contradiction. He assigns them synthetic character by virtue of the fact that mathematical propositions like $5 + 7 = 12$ show the genuine construction of a concept in time. 12 is constructed out 5 and 7 and so it is not contained in the latter. Consider his remark “we might, indeed, at first suppose that the proposition $7 + 5 = 12$ is a merely analytic proposition, and follows by the principle of contradiction from the concept of a sum of 7 and 5. But if we look more closely we find that the concept of the sum of 7 and 5 contains nothing save the union of the two numbers into one, and in this no thought is being taken as to what that single number may be which combines both. The concept of 12 is by no means already thought in merely thinking this union of 7 and 5; and I may analyse my concept of such a possible sum as long as I please, still I shall never find the 12 in it.” Kant thus rejects the law of contradiction in analysing the mathematical propositions as synthetic a priori.

The critics may, however, ask how could Kant overlook the law of contradiction? He calls it the principle of analysis. How could he call it a principle of analysis if he could manage to overlook it? Further the principle of contradiction has to be satisfied by each and every proposition, be it synthetic or analytic. Any significant proposition has to be self-consistent. Self-consistency of a proposition means that it is free from contradiction. It is in this sense that Leibniz called the law of contradiction as a different name for the law of identity. They are two different faces of the same coin. For
converting mathematical propositions into synthetic propositions Kant completely gives up logical consideration. In this case, only psychological consideration has been used. The law of contradiction shows that the proposition 'all bodies are extended' is analytic. But the law of contradiction has been suppressed for showing the analytic character of \( 7+5=12 \). Different criteria govern different kinds of propositions. There would hardly be any objection to Kant's view that the mathematical propositions are a priori. That their truth does not depend on experiential verification. So also there would hardly be any disagreement that these propositions are universally and necessarily true. In the idiom of Leibniz they are true in all possible worlds. But calling these propositions synthetic creates problems. Since the time of Hume synthetic propositions have been considered contingent, but Kant has introduced the possibility of synthetic necessary propositions. In connection with Kant’s use of two different criteria for distinguishing analytic from synthetic propositions Ayer points out, "Kant does not give one straightforward criterion for distinguishing between analytic and synthetic propositions; he gives two distinct criteria, which are by no means equivalent. Thus his ground for holding that the proposition '7+5=12' is synthetic is, as we have seen, that the subjective intention of '7+5' does not comprise the subjective intention of '12'; whereas his ground for holding that 'all bodies are extended' is an analytic proposition is that it rests on the principle of contradiction alone. That is, he employs a psychological criterion in the first of these examples, and a logical criterion in the second, and takes their equivalence for granted. But, in fact, a proposition which is synthetic according to the former criterion may very well be analytic according to the later." Kant has certainly not confused the two criteria, logical and psychological, as one and the same criterion. He simply withholds the logical criterion for its application on mathematical truths. He is quite convinced that one is not thinking of 12 when one is thinking of the addition of 7+5. This ends the matter. Once the proposition \( 7+5=12 \) has been granted a synthetic
character, there is no necessity for contemplating the possibility of seeing whether it is analytic.

Kant failed to detach mathematics from its application to reality. He discovered that the physical reality follows the mathematical principles. Mathematical propositions therefore could not be non-informative. But if mathematical propositions are considered as analytic then there is a risk for them to be considered as non-informative tautologies. It is to provide the informative dimension to mathematical propositions, that he was led to make them synthetic. Kant was also interested in extending the horizon of a priori knowledge, but no such extension is possible if all a priori knowledge is analytic. For the predicate of an analytic proposition gives us no new knowledge, it only explicates the knowledge which we already have. It is only a priori synthetic propositions, which can extend horizon of our knowledge. Of course this does not mean that Kant has completely done away with analytic propositions from the domain of mathematics. Though all mathematical propositions are synthetic, they presuppose certain propositions which are analytic. The propositions that are analytic function as foundations of mathematical propositions. Referring to the mathematical science of Geometry Kant remarks, "some few fundamental propositions, presupposed by the geometer, are, indeed, really analytic, and rest on the principle of contradiction. But, as identical propositions, they serve only as links in the chain of method and not as principles; for instance, a = a; the whole is equal to itself; or (a+b) > a, that is, the whole is greater than its part." The principle of identity, which has been given supreme importance by Leibniz, has been given nominal importance by Kant. The reason why Kant has not given much importance to the principle of identity is that this principle does not extend the horizon of a priori knowledge. Of course, like Leibniz, Kant puts both, the principle of identity and the principle of contradiction, on the same level. Both these principles succeed only in explicating the knowledge which we already have.
They fail to extend our knowledge. Of course they are fundamental presuppositions of mathematics. Hence they make mathematics possible. They are fundamental truths. Without them there would have been no mathematical knowledge. Though themselves analytic these fundamental truths generate propositions which are synthetic. There is a sense in which Kant has also given high importance to the logical principles, Principle of identity and principle of contradiction. He has converted them into foundational truths of mathematics, but the mathematical propositions, which have been generated by these foundational truths, are quiet unlike their foundations. They are synthetic and informative. Kant finds no paradox in accommodating analytic truths in the field of mathematics, but they have been put as the limits of this field. All mathematical propositions are synthetic a priori. But they have become possible because of propositions that are analytic a priori.

Empirical knowledge is synthetic by definition since it extends our knowledge of the world. But mathematical propositions have been made synthetic by extension by Kant. It is not the defining character of a priori proposition that it is synthetic. Only some and not all a priori propositions are synthetic. A good number of them remain analytic. The restriction of a priori to analytic, and empirical to synthetic, has been removed in Kant’s transcendental philosophy. Neither Leibniz nor Hume consider the possibility of synthetic a priori propositions. Kant’s philosophy of mathematics, and knowledge in general, demanded the availability of synthetic a priori truths.

Mathematical propositions are undoubtedly a priori. If they are made synthetic then there would be extension of a priori knowledge. Kant shows awareness of the universal application of the principle of contradiction when he says “The universal, though merely negative, condition of all our judgements in general, whatever be the content of our knowledge, however it may related to the object, is that they be not self-

134
contradictory; for if self-contradictory, these judgements are in themselves, even without reference to the object, null and void."52 So freedom from contradiction is the necessary condition for the possibility of knowledge. As Kant further points out, "The proposition that no predicate contradictory of a thing can belong to it, is entitled the Principle of contradiction, and is a universal, though merely negative, criterion of all truths."53 The principle of contradiction functions as a positive and sufficient criterion of truth only in the case of analytic knowledge. As Kant further remarks, concerning this principle that, "beyond the sphere of analytic knowledge it has, as a sufficient criterion of truth, no authority and no field of application."54 The pull towards the extension of a priori knowledge has certainly drawn towards it. There is certainly no contradiction involved in saying ‘7+5 =12’ so the principle of contradiction is satisfied. Further, ‘12’ is not included in ‘7+5’. So the proposition ‘7+5=12’ becomes synthetic. So this proposition does not belong to the sphere of analytic knowledge. Therefore the principle of contradiction cannot function as the criterion of the truth in this case. According to Kant, besides mathematics there are synthetic a priori truths in science like physics. One may question Kant for his views on mathematics without questioning his views on the fundamental judgements of physics. Consider two such judgements. ‘Every thing which happens has its cause’ and ‘In all changes of material world the quantity of matter remains unchanged’. These examples have been given by Kant. Both these propositions are synthetic. The concept of ‘cause’ is not given in the concept of ‘some thing which happens’. So also in the concept of matter is not given its permanence. Though synthetic, these propositions are universal and necessary. Their truth does not wait for experiential verification. For their truth is not restricted to what happens in experience: they go beyond experiences. Experience presupposes their truth. So one is not in a position to verify their truth. It is not only Physics where we come across certain propositions which seem to be synthetic and a priori: we come across such propositions even in our daily life. Consider the proposition ‘being red excludes being blue’. If some
thing is red then at the same time it is not blue. It is certainly not an analytic proposition. It is synthetic proposition. But this proposition can not be the result of inductive generalisation. For it holds also true in the future. We cannot imagine a world in which something may be both red and blue at the same time. So this appears to be true in all possible worlds. But then it would be true universally and necessarily. Universality and necessity are marks of an a priori proposition according to Kant. This show that ‘being red excludes being blue’ is an a priori synthetic proposition. Consider another proposition ‘being coloured implies being extended’. If something is coloured then it is also extended. This proposition is also synthetic. The truth of this proposition is also not restricted to this world. We cannot conceive a world in which something may be coloured but fail to have extension. The proposition ‘being coloured implies being extended’ is universally and necessarily true. So this proposition too appears to be synthetic a priori.

Kant’s synthetic a priori propositions are very different from inductive generalisations. Aristotle distinguishes inductive generalisation into two different kinds. There is a kind of induction in which we have to encounter many instances. After observing many swans we have come to the generalisation that all swans are white. But there is another kind of generalisation in which a few instances are sufficient. This kind of generalisation is the result of “intuitive induction.” One has not to see many instances for coming to know that ‘being red excludes being blue’. One or two instances would lead one to the intuition that ‘being red excludes being blue’. So also one or two instances would lead one to the intuition that ‘being coloured implies being extended’. So these propositions ‘being red excludes being blue’ and ‘being coloured implies being extended’ are necessary. They are also the result of induction, a special kind of induction. But this approach has its own difficulties. Intuitive induction has no deductive validity. All inductive generalisations could possibly be false. Can we
imagine the possibility, which makes 'being red excludes being blue', false? To meet such a possibility we have to imagine a universe in which some thing is both blue and red at the same time. No such universe is conceivable. Therefore this proposition cannot be the result of induction. The same is true about the proposition 'being coloured implies being extended'. Thus according to Kant, the concept of necessity does not seem to be restricted to analytic truths. Some synthetic truths also seem to be necessary. Kant is certainly right about synthetic necessary truths.

3. LOGICAL NECESSITY: THE POSITIVIST POINT OF VIEW

The logical positivists who formed the Vienna Circle in the early part of this century opposed Kant’s idea of synthetic a priori truths. They rejected the concept of synthetic necessity. They questioned the idea that mathematical propositions are synthetic. According to them, there are only two types of meaning for propositions, such as the tautologies or analytic truths in logic and mathematics, and the synthetic propositions of the empirical sciences. There are no propositions, which are both synthetic and a priori.

Following the British empirical tradition A.J.Ayer, the British representative of logical positivism, rejects Kant’s synthetic a priori. According to him, all a priori propositions are analytic and all a posteriori propositions are synthetic. Opposing Kant he maintains that the propositions of mathematics and logic, though a priori are analytic. Similarly the fundamental propositions of physics are synthetic a posteriori. The attitude of positivists to analytic a priori truths is quiet different from the attitude of rationalists towards these truths. The sceptics believe that one can have no knowledge of reality. As against them the rationalists maintained that one could have knowledge of essential features of reality even without taking the help of experience. A priori analytic propositions provide such knowledge. Kant further added to our a priori knowledge of
reality by introducing synthetic a priori propositions. We have already seen those logical truths; that is, the truths of mathematics and logic, demonstrate the essence of reality. They are truths that penetrate into all possible worlds. The fact that they are known a priori shows that one has a priori knowledge of the essential features of reality.

Wittgenstein initiated a move to detach the so-called a priori truths from the reality, what was considered as true in all possible worlds became true in no possible world. Wittgenstein converted a priori truths into non-informative tautologies. According to him, “I know nothing about the weather when I know that ‘it is either raining or not raining’.” This proposition is a function of the arguments ‘it is raining’ and ‘it is not raining’. Independently of the function both these propositions give us information about reality. When one says it is raining, one gives information about the weather outside. So also when one says, it is not raining, one gives information about the weather outside. But once these propositions are united with the connective ‘or’, they give no information about the weather outside. For the simple reason that the truth of this resultant proposition does not depend on the condition of weather outside. By using logical connectives ordinary propositions are converted into logical truths, the truths that gave us no information about outside reality. No kind of character certificate has been provided for a person if it is said about him that ‘either he is honest or he is dishonest’. If Wittgenstein and his followers are right, then logical truths are not truths about reality. Neither essential nor nonessential features of reality have been described by them.

Following Wittgenstein and opposing Kant, Ayer provides his own distinction between analytic and synthetic propositions. Referring to synthetic propositions he says “the proposition ‘there are ants, which have established a system of slavery’ is synthetic proposition. For we cannot tell whether or not it is true or false merely by considering
the definition of the symbols which constitute it. We have to resort to actual observation of the behaviour of ants.\textsuperscript{57} But no such observation is required for establishing the truth of an analytic proposition. This is for the reason that the analytic proposition gives us no information about any matter of fact. Concerning the analytic proposition ‘either some ants are parasitic or none are’ Ayer says, “it is independent of experience ... provides no information whatsoever about the behaviour of ants or indeed about any matter of fact ... is entirely devoid of factual content.”\textsuperscript{58} Any proposition, be it analytic or synthetic, involves the use of symbols and these symbols have their own definitions. However, in the case of an analytic proposition the definition of symbols plays a major role. It is these definitions which provide truth to an analytic proposition. As Ayer further points out that “a proposition is analytic when its validity depends solely on the definition of the symbols it contains and synthetic when its validity is determined by the facts of experience.”\textsuperscript{59} The symbols ‘either’ and ‘or’ confer truth on the proposition ‘either some ants are parasitic or none are’. The behaviour of these ants is irrelevant. One may find the echo of Leibniz in this analysis of an analytic proposition. We have already seen how Leibniz demonstrates the truth of the proposition ‘the whole is greater than its part’ with the help of the definition of ‘greater’. Similarly the truth of the proposition ‘a part is less than the whole’ depends on the definition of ‘less’. The view that the truth of an analytic proposition depends on the definitions of certain symbols in it is as old as Leibniz. What is anti-Leibnizian or un-Leibnizian is the positivistic attempt to detach these propositions form reality. For Leibniz an analytic proposition is true in all possible worlds. But for Ayer it is true in no world at all. Analytic truth is nothing but a tautology. What about self-contradiction? No world accommodates it. It is false in every possible world. Since tautologies are independent of the world, they too fail to touch the world like self-contradiction. Tautology and self-contradictions belong to their own world, not to any possible worlds of Leibniz. Wittgenstein remarked “not only must a proposition of logic be irrefutable by any possible experience, but it must also be
unconformable by any possible experience.” The world of experience can neither refute nor confirm a logical truth. And if mathematics is reducible to logic then mathematical truths behave in the same fashion. But can we imagine a world, which is illogical, which failed to follow the laws of logic. We can imagine a world, which breaks the existing physical laws. But can we also imagine a world which breaks the logical laws. For example, where square become round etc. Our world seems to follow the laws of logic essentially and the laws of physics contingently. Total detachment of analytic truths from the world seems to be impossible. Of course Wittgenstein manages to escape from this difficulty. For he also maintained that “the propositions of logic describe the scaffolding of the world, or rather they represent it.” Scaffolding of the world corresponds with scaffolding of logic. It is very easy to make the Hegelian step. The scaffolding that occurs in the world is identical with the scaffolding of our logical thinking. It is impossible to detach logic completely from the world. This is what both Leibniz and Hegel were trying to say. Ultimately Wittgenstein comes closer to Leibniz and Hegel and seems to have deserted the logical positivists like Ayer.

According to Ayer, the validity of an analytic proposition depends on the definitions of certain symbols occurring in it. But could a synthetic proposition be valid if its symbols are not well defined? As Quine points out, “It is obvious that truth in general depends on both language and extra linguistic fact. The statement ‘Brutus killed Caesar’ would be false if the world had been different in certain ways, but it would also be false if the word ‘killed’ happened rather to have the sense of ‘beget’.” No proposition would be true, be it analytic or synthetic, if one is not using symbols with their clear meanings. In defense of Ayer one may say that some symbols are more important in analytic propositions than other symbols. For example, the symbols ‘either’ and ‘or’ are more important than other symbols occurring in the proposition ‘Either it is raining or it is not raining’. We can construct any number of propositions of
this form. The following propositions are of the same form, 'either it is snowing or it is not snowing', 'either he is a fool or he is not a fool' and so on. The truth of all these propositions depends on the symbols 'either' and 'or'. It is in this sense that Ayer means to say that the truth of an analytic proposition depends on the symbols used in it. This definition of an analytic proposition rejects the definition in terms of the container and the contained. The propositions that have been considered are not of the subject-predicate form, yet they are analytic. And the fact that their negation involves a contradiction in terms shows that the law of contradiction is not a principle of analysis in the Kantian sense of the term. Like Kant, Ayer too provides two distinct definitions of analyticity. The second definition is in terms of synonymity of two expressions. Ayer provides this definition in the context of his criticism of Kant. Ayer says "our knowledge that no observation can ever confute the proposition '7+5=12' depends simply on the fact that the symbolic expression '7+5=12' 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'. And the same explanation holds good for every other a priori truth."3 For Ayer all analytic truths are a priori. Therefore saying that some thing holds for a priori truths means that it will also hold for an analytic truth. So a proposition is analytic if the symbols involved in it are synonymous. The proposition 'an oculist is an eye-doctor' is analytic because the symbol 'oculist' is synonymous with the symbol 'eye-doctor'. The definition of analyticity in terms of the synonymity of symbols is not sufficiently general to cover all analytic propositions. Though the proposition 'Either some ants are parasitic or none are' is both a priori and analytic, yet it does not possess a pair of synonymous symbols as is the proposition 'An oculist is an eye-doctor'.

Even in its limited application, the definition of analyticity in terms of the synonymity of symbols involves its own difficulties. How is synonymity to be defined?
One way to discover that the symbols in a proposition are synonymous is to discover that the proposition in question is analytic. The synonymity of 'eye-doctor' with 'oculist' follows from the fact that one knows that the proposition 'an oculist is an eye-doctor' is analytic. For a proposition is analytic only if the symbols involved in it are synonymous. But this would be circular. Analyticity itself has been defined in terms of synonymity therefore a distinct rule of synonymity is required. In the context of an explicit definition of a symbol Ayer makes the following attempt to define synonymity. He says, "We define a symbol explicitly when we put forward another symbol or symbolic expression which is synonymous with it. And the word, 'synonymous' is here used in such a way that the two symbols belonging to the same language can be said to be 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. And we say that two sentences of the same language are equivalent if, and only if, every sentence which is entailed by any given group of sentences in conjunction with one of them is entailed by the same group in conjunction with the other. And in this usage of the word 'entail' a sentence s is said to entail a sentence t when the proposition expressed by t is deducible from the proposition expressed by s; while 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." These remarks show that the notion of synonymity is not so simple. One may know the sense of an expression, so also he may know the sense of another expression. But one has to take several steps in order to know whether these expressions have the same sense or different senses. In order to know that two expressions are synonymous one has to know several other notions. In order to clarify the nature of synonymity, Ayer has used such other notions as: equivalence of sentences, relation of entailment, notions of deduction and contradiction etc., All these notions themselves requires explanation. As Ayer's remarks show, it not impossible, though it is quite difficult, to know whether two
method of knowing the truth of these sentences and not concerning the fact that they are true of reality. The fact that a given sentence is such that its truth is known by logical analysis does not imply that it is not true of reality or that it does not hold in the case actually before us or that it is completely cut off from reality. To draw any such implication is to misunderstand the nature of L-true sentences.

It might have become clear that there is hardly any disagreement between the empiricist Carnap and the rationalist Leibniz. The L-true sentences, that is, the sentences which express analytic propositions are true in all possible worlds, which includes the actual world. It is only the synthetic truths that are restricted to this world. Logical positivism seems to be a very accommodative system. There are those logical positivists who wish to keep logico-mathematical truths to be independent of the world. But there are also those logical positivists who allow the penetration of logico-mathematical truths into the world.

4. QUINE’S ATTACK ON ANALYTIC-SYNTHETIC DISTINCTION:

Though Leibniz brought focus to the issue of synonymity in the context of identity statements, this issue had taken a new turn with Frege and Russell. Through his examples of ‘morning star’ and ‘evening star’ Frege distinguished sense from reference. ‘Morning star’ refers to the same planet, which is referred by the expression ‘evening star’. But ‘morning star’ has different meaning from ‘evening star’. Two expressions may have different senses but the same reference. Similarly Russell found that ‘Scott’ and ‘the author of Waverley’ refer to the same person. Two expressions, according to Russell and Frege, may have different senses but the same reference. Quine has taken a step forward. He has created a wider gulf between two expressions, which have the same reference but different meanings. According to him, “The general terms ‘creature
with a heart’ and ‘creature with kidneys’ for example, are perhaps alike in extension but
unlike in meaning.” For several years philosophers struggled with the issue whether it
is analytic or synthetic if one says that ‘The morning star is the evening star’. Similarly,
whether it is analytic or synthetic if one says ‘Scott is the author of Waverley’. This
shows at least that there are propositions of which the status is dubious. One faces
difficulty if one calls them analytic. But this does not mean that there are no difficulties
in calling them synthetic. The proposition ‘the morning star is the evening star’ is not a
straightforward analytic proposition like ‘Red colour is a colour’. So also it is not a
straightforward synthetic proposition like ‘The rose is red’. This has led Quine to attack
the analytic-synthetic distinction. According to Quine, the analytic/synthetic distinction
is only a dogma of empiricists. As he says “a boundary between analytic and synthetic
statements simply has not been drawn. That there is such a distinction to be drawn at all
is an unempirical dogma of empiricists, a metaphysical article of faith.” The
distinction in question may be a metaphysical article of faith but certainly not an
‘unempirical dogma of empiricists’. For it has its genesis in Leibniz who was a branded
rationalist. Kant, who carried the tradition of Leibniz, was also not an empiricist, for he
was equally a rationalist. The present day logical positivists carry the empiricistic
tradition of Hume, opposing both Leibniz and Kant. According to Strawson, “Quine is
certainly at odds with a philosophical tradition which is long and not wholly
disreputable. But there is no need to appeal only to tradition; for there is also present
practice we can appeal, that is, to the fact that those who use the terms ‘analytic’ and
’synthetic’ do to a very considerable extent agree in the applications they make of them.
They apply the term ‘analytic’ to more or less the same cases, withhold it from more or
less the same cases, and hesitate over more or less the same cases.”* Frege and Russell
provided cases in which analytic/synthetic distinction fails. Quine has attempted to add
his own list where analytic/synthetic distinction fails. Following ‘the morning star’ and
‘Scott’ examples, Quine has created the example of ‘the creature with a heart’ and this

145
has been contrasted with 'creature with kidneys' not very unlike 'the author of Waverley' and 'the evening star'. Strawson seems to be right that there are instances of propositions which are generally accepted as analytic. So also there are propositions which are generally accepted as synthetic. A few propositions do not fit into this dichotomy. It is because of them that philosophers from the time of Leibniz to the time of Quine have been trying to evolve different criteria for analyticity and syntheticity. Even Quine, who accepts that any proposition is revisable, also accepts that there are propositions which one may not revise, "come what may". Quine has proposed a single unitary scale in which propositions occupy different places. His attack on analytic/synthetic distinction is meant for evolving a single scale. Would not what are known as analytic propositions by philosophers in general occupy a higher place than the place occupied by what are generally known as synthetic propositions. Of course all of them are revisable, but some of them resist revision.

The other dogma, which Quine has attacked, is the dogma of reductionism. This dogma presupposes that the complex propositions are reducible to simpler propositions, and finally to propositions which directly record experiences. For example, material object statements are reducible to sense data statements. Quine's major objection to reductionism is "our statements about the external world face the tribunal of sense experience not individually but only as a corporate body." This attack against atomism is in favour of holism. To an empiricist, be he a Hume or Russell, the world appears as a totality of atomic facts, each fact independent of the other. Atomic facts are mirrored by atomic propositions, which are the ultimate ground for all non-atomic propositions. Propositions form a hierarchy according to their complexities. Quine is arguing against this kind of picture. According to him, "The totality of our so called knowledge of beliefs, from the most causal matters of geography and history to the profoundest laws of atomic physics or even of pure mathematics and logic, is a man-made fabric which
impinges on experience only along the edges. Or, to change the figure, total science is like a field of force whose boundary conditions are experience." So knowledge forms a whole which includes all kinds of propositions, ranging from logico-mathematical propositions to the propositions which directly touch experiences. So Quine clearly rejects the two epistemic worlds, grounded into two logical categories, the analytic and synthetic. Those who believe in analytic/synthetic distinction, creating two distinct streams through which knowledge flows, do not wish to dissolve the distinction between history, physics and mathematics. Perhaps Quine too does not wish to dissolve the distinctions of academic disciplines. So also not only Quine but also all those whom he opposes find total human knowledge having connection with experience. As Kant pointed out, all knowledge begins with experience. Experiences are required for making such a statement as ‘This is red’ no less than for saying 2 and 2 make 4 or for saying ‘Every thing is what it is’. According to those who believe in analytic/synthetic distinction, some propositions become independent of experiences as soon as experiences have given birth to them. Quine does not allow independence to them. All propositions have to face the ultimate tribunal of experiences. Experience is the boundary condition of all our knowledge. There exists no such boundary as boundary between analytic and synthetic propositions.

Quine talks about propositions that are "remote from the experiential periphery." He does not give examples of these propositions. As a matter of fact when Quine comes to discuss his own position in the sixth section of his paper, he has stopped giving examples in support of his position. While criticising analytic/synthetic distinction he has given a number of examples. It is through those examples that he has criticised the analytic/synthetic distinction. But in order to understand and expound Quine’s position one has to construct examples. What are the examples of propositions that are remote from the experiential periphery? They are certainly different from the
propositions that are nearer to the experiential periphery. What are those propositions, which are nearer to the experiential periphery? Again, Quine talks about certain statements, which are felt "to have a sharper empirical reference than highly theoretical statements of physics or logic or ontology." This shows that the statements of physics, logic and ontology have quite dull or thin empirical reference. Are they the same sort of statements, which are remote from the experiential periphery? If they are, then Quine is simply providing a fresh criterion for distinguishing analytic from synthetic propositions. Propositions, having sharper empirical references, would be considered synthetic, whereas those, which have, dull or thin empirical reference would be analytic.

Though Quine believes that all propositions have to face the tribunal of experiences, he is not another Mill. For Mill all propositions are inductive generalisations, be they the propositions belonging to mathematics or to history and geography. Since one could be mistaken about any inductive generalisation, one could also be mistaken about mathematical generalisations. But when Quine thinks about the revisability of analytic truths then he certainly is not following Mill. He is producing a novel thesis. We will be discussing his thesis of revisability later after considering his ontology. Common sense philosophers give high regard to ordinary material objects like tables and chairs. Even philosophers who are not so ordinary continue giving importance to material objects over scientific entities like sound waves, light waves, electrons etc. Scientific entities are considered having hypothetical existence. Their existence is assumed for explaining or describing the physical phenomena. This leads to the question of ontological priority. Since scientific entities are not known prior to ordinary physical objects like tables and chairs, they are given a secondary ontological status. Primary ontological status is given to ordinary material objects. The status of sense data too is given a secondary importance because they are explained in terms of ordinary material objects. Since Quine is measuring all propositions through one and the
same scale, therefore there is a sense in which he has put all propositions on the same platform. But then all objects, be they physical like tables and chairs, or nonphysical like sound waves and electrons, have to be put on the same platform. Physical objects, for Quine, are no less mythical than are the scientific objects like sound waves and electrons. Conversely we can say that scientific objects are as real as physical objects. Quine says, “positing does not stop with macroscopic physical objects. Objects at the atomic level are posited to make the laws of macroscopic objects and ultimately the laws of experience, simpler and more manageable.” Experience seems to be the only non-posit. But what are those experiences that are not posited like physical and scientific objects? It is to explain or describe the nature of experience that all kinds of myths have been introduced, ranging from the gross material objects to the sub-atomic entities. But one may not find any novelty in Quine’s mythology, except a new idiom. To the followers of Hume the material objects are only myths, which are analysed away by reducing them to sense experiences. So also the myth of self is analysed away through its reduction to occurrences of such experiences as cold, hot, happiness, un-happiness etc. But this would be reductionism, and Quine rejects reductionism. The fashion in which the myth of physical object is removed by reduction to sense experience, the myth of sound wave is removed by its reduction to auditory experiences. But Quine is not a crude empiricist like Hume or Mill, who suffered from the reductionistic tendency. Of course Quine also suffers from the reductionistic tendencies. He has reduced gross physical objects to myths, to posits, to Homer’s Gods. Again, he has reduced the hypothetical scientific entities to non-hypothetical entities like tables and chairs.

Quine has come to an interesting conclusion about human knowledge. Common man’s ‘physical objects’, scientist’s ‘force’ and ‘energy’ and mathematician’s ‘abstract entities’ are all myths. These myths have been generated for the sake of ‘experience’, which is the non-mythical core. Does it not mean that human knowledge as such is
mythical or fiction? This implies that for Quine there is no real knowledge that is non-mythical and non-fictitious. Freedom from myths and fictions is possible only when one transcends human knowledge. But could any piece of knowledge become mythical or fictitious if there are no pieces of knowledge that are real and non-mythical. Quine's position does not seem to be different in quality from the position of the philosopher for whom the whole world appears to be a dream. His position is self-refuting. Unless there are waking experiences there cannot be any dreaming experiences. So also Quine's position is. How can human knowledge be mythical unless there is human knowledge, which is real and non-mythical?

Though Quine believes that all statements are revisable, ranging from logical laws to statements that record immediate experiences, he does not mean that a single recalcitrant experience would lead to the revision of the whole system. Revision of a few statements would do without disturbing the system. As he says, "I envisage nothing more than a loose association reflecting the relative likelihood, in practice, our choosing one statement rather another for revision in the event of recalcitrant experience." But situations are imaginable when our experiences have become so wild, so unlike our present experiences, that the whole system of our present knowledge has to be revised. New grounds have to be introduced for the new system. Of course it does not mean that every thing from the top to bottom has to be changed, nothing of the world is retained in the new system. May be what was a bottom-proposition in the old system occupies a middle position in the new system, and the occupier of the top position in the old system now becomes a bottom-proposition in the new system. According to Quine, "any statement can be held true come what may." This means that only positions in the new system are constant, the statements that occupy those positions are variable.
Though Quine distinguishes between the state in which the recalcitrant experiences lead to minor changes in the system from those where the whole system requires a change, he has not given any concrete examples. He has left to his readers to construct examples. To understand the distinction one can take the help of Wittgenstein. According to Wittgenstein, a switch from one world-picture to the other is required when normal cases acquire abnormal dimension. As he remarks, "it is only in normal cases that the use of a word is clearly prescribed; we know, are in no doubt, what to say in this or that case. The more abnormal the case, the more doubtful it becomes what we are to say. And if things were quite different from what they actually are.... if rule became exception and exception rule; or if both became phenomena of roughly equal frequency -- this would make our normal language-games lose their point." So new language-games are required to convert the abnormal cases into normal cases. A new world-picture would replace the old world picture. The following remarks of Wittgenstein clarify the issue further. He says, "it would strike me as ridiculous to want to doubt the existence of Napoleon, but if someone doubted the existence of the earth 150 years ago, perhaps I should be more willing to listen, for now he is doubting our whole system of evidence. It does not strike me as if the system more certain than a certainty with it." Doubting the existence of Napoleon does not doubt the present history. What is doubted only is an item of history. We have not to construct a new history in order to accommodate doubt concerning the existence of Napoleon. But doubting the existence of the earth 150 years ago would lead us to construct a new history of the world, a history that began 150 years ago. Our present world picture, with the system of evidence, has been doubted. In order to satisfy the latter doubt we have to create a new world-picture. We have to have a re-look on all items of the old system. For we are entering into a new world. The theoretical possibility of such re-looking is not ruled out. It is not only a matter of rewriting history; it is a matter of rewriting every thing. Perhaps this is what Quine means when he contemplates about the revision of the
whole system of knowledge. So Quine is not alone in having such thoughts. Wittgenstein seems to share his views.

For Quine a proposition isolated from the system has no sense. In having a given world-picture, according Wittgenstein, “what I hold fast to is not one proposition but a nest of propositions.”\textsuperscript{79} Much later he again says, “our knowledge founds an enormous system. And only within the system has a particular bit the value we give it.”\textsuperscript{80}

According to Quine, any statement can be held true come what may. Wittgenstein explicitly says, “it might be imagined that some propositions were hardened and functioned as channels for such empirical propositions as were not hardened but fluid; and this relation altered with time, in that fluid propositions hardened, and hard ones became fluid.”\textsuperscript{81} Certainty and necessity that we attach to a given proposition is contextual. What is certain and necessary at one time may become uncertain and doubtful at other time. And what is doubted at one time may become certain and necessary at other time. Certainty and necessity are not the defining characters of propositions; they are their contextual characters.

Finally, Wittgenstein considers his world-picture as “a kind of mythology.”\textsuperscript{82} And concerning this mythology he says, “the mythology may change back into a state of flux, the river-bed of thoughts may shift. But I distinguish between the movement of the waters and the river-bed and shift of the bed itself; though there is not a sharp division of the one from the other.”\textsuperscript{83} The propositions that are supposed to be foundations of our knowledge are not as strong as we expect them to be. They may be washed away. And their place may be occupied by new propositions. This is the only way in which knowledge can be saved from its total collapse.
5. Kripke on Necessity:

Kripke has not rejected the analytic/synthetic distinction. But he has rejected the older approach to this distinction. He has re-considered all the four notions, a priori a posteriori, necessary and contingent. Following Hume the logical positivists restricted a priori to necessary truths and a posteriori to contingent truths. Kripke appears to have advanced over Kant. Kant, as we have already seen considered the possibility of a priori synthetic truths. Kripke believes in the further possibility of a priori truths that are contingent. So a priori truths are both, those that are necessary as well as those that are contingent. If contingent truths are non-universal then according to Kripke there are a priori truths that are not universal. So Kripke totally rejects Kant’s concept of a priori. Similarly a posteriori truths are considered as contingent. But Kripke considers the possibility of a posteriori truths that are necessary. So his approach is quite novel.

In order to show the possibility of a priori contingent truths Kripke starts with an attack on Wittgenstein? He quotes Wittgenstein’s remark from *Philosophical Investigations*. Wittgenstein remarked, “There is one thing of which one can say neither that it is one metre long, nor that is not one metre long, and that is the standard metre in Paris.- But this is, of course, not to ascribe any extraordinary property to it, but only to mark its peculiar role in the language-game of measuring with a metre-rule.” Keeping a blind eye to Wittgenstein’s arguments, Kripke formulates the statement concerning the Paris-stick that ‘the stick S is one metre long’. Then raises question concerning this statement whether it expresses “a necessary truth.” The statement could not be necessary. It must be contingent. The length of the stick may vary in time. According to Kripke, “In some counterfactual situations the stick might have been longer and in some shorter, if various stresses and strains had been applied to it.” So the statement ‘stick S is one metre long’ could not express a necessary truth. But he has reached this
conclusion not in a straightforward way. He has introduced the distinction between rigid and non-rigid designators. He has shown that 'one metre' is a rigid designator whereas the 'the length of S' is non-designator. This is sufficient to show that the statement 'S is one metre long' is contingent, "under certain circumstances S would not have been one metre long."87

Kripke's next step is to show that the statement 'stick S is one metre long' is known a priori. He argues, "what then, is the epistemological status of the statement 'stick S is one metre long at t', for someone who has fixed the metric system by reference to stick S? It would seem that he knows it a priori. For if he used stick S to fix the reference of the term 'one metre', then as a result of this kind of 'definition' (which is not an abbreviative or synonymous definition) he knows automatically, without further investigation, that S is one metre long.88 So Kripke has defined a priori knowledge in terms of automatically knowing something. Does it mean that a posteriori knowledge is that which is obtained in a non-automatic way, that which requires some effort on our part? If one knows something without any effort then one's knowledge is a priori. Obviously this is quite a novel definition of a priori knowledge. A priori knowledge is easiest to have. Most of our empirical knowledge would become a priori because it is automatic; it is obtained without making any effort. I have made no effort in knowing that there is a book in front of me and the author of the book is Kripke. Of course the statements of empirical sciences are not a priori. They are not automatically known, much effort is put in order to know them. But Kripke may object to this argument. It is only when one stipulates definition in order to fix the reference of a term that one knows automatically the application of that term. Suppose I wish to fix the reference of 'red' in terms of the colour of the object before me, then my saying this is red would exhibit a priori knowledge. This means that only those people have a priori knowledge of truths who are involved in the stipulative definitions in order to fix the
references of terms. I got everything ready-made. I have not to stipulate definitions. I had not to fix the references of terms. So my knowledge is not a priori. It is a posteriori. Not only I talk about tables and chairs and the shapes and colours, I also talk about numbers, causes, electrons etc., without ever fixing the irreferences. All my knowledge is a posteriori, whether it is about the logical laws or about the water that is boiling in my pot. Kripke is worried about the possibility of a priori knowledge. "Possible for whom? For God? For the Martians? Or just for people with minds like ours?" Kripke has solved his own worry. Only those people have a priori knowledge who are involved in stipulative definitions of terms in order to fix their reference. All others have only a posteriori knowledge. No proposition is initself a priori or a posteriori. In some hands they are a priori. In other's they are a posteriori.

Kripke has certainly not taken Wittgenstein's reflections seriously. Following Strawson consider the distinction between sentence and the use of a sentence: Consider the sentence 'the stick S is one metre long'. I may use this sentence while referring to the stick lying on my table. My friend looks at the stick, scrutinises it and points out that this stick is not one metre long. His reasons for rejecting the length of the stick are that it has been produced by crude hands belonging to careless manufacturers. To satisfy my friend I bring out an old stick that was produced by other hands and that had IS1 mark. After measuring the new stick with the old stick it was discovered that the new stick is less than one metre long. So my friend was right. Suppose both my friend and me are in Paris and we got the opportunity to look at the Paris-stick. Referring to the Paris stick I say 'stick S is one meter long'. This time my friend does not object to my observation. He does not say this stick is not one meter long. The reason is simple, there is no other stick more accurate than the Paris-stick. The Paris-stick is the standard of measurement. Other sticks are measured in terms of the Paris-stick. So there exists no other stick in the world with the help of which it can be decided whether or not the
Paris-stick is one meter long. As a matter of fact I am neither in a position to say that the Paris-stick is one meter long nor in a position to say that it is not one meter long. For there exists no stick in the world, which may show that the Paris stick is or is not one meter long. In saying that 'the stick S is one meter long', while referring to the Paris-stick, I am making no statement that could possibly be true or false. The sentence 'the stick is one metre long' uttered in front of the Paris-stick has failed to express a statement that could possibly be true or false. The use of the sentence on this occasion is very different from its use when I referred to the stick lying on my table. When the sentence 'the stick S is one metre long' I used in the context of Paris-stick then it fails to express a statement that could possibly be true or false. This means that the sentence in question fails to express any statement whatsoever. And if it fails to express any statement whatsoever then there is no question of saying whether the statement is contingent or necessary. Any characterisation of a statement presupposes its expression, therefore, Kripke's contention that the statement 'stick S is one metre long' is contingent a priori is simply wrong.

All this does not mean that sentence 'stick S is one metre long' does not express a statement even when I am referring to Hyderabad-stick. It does express a statement. In the case of Hyderabad-stick my statement 'the stick S is one metre long' was wrong and the statement was contingent. Since I used empirical investigation in order to establish the truth of the statement therefore it was undoubtedly a posteriori. Kripke's difficulties are rooted in the fact that he is unable to distinguish paradigmatic cases from non-paradigmatic cases. He is unable to distinguish the Paris-stick from the Hyderabad stick. He gives the same status to the Paris-stick, which one would have given to the Hyderabad-stick. He says, "even if S is used as the standard of a metre, the metaphysical status of 'S is one metre long' will be that of a contingent statement, provided that 'one metre' is regarded as a rigid designator: under appropriate stresses
and strains, heatings or coolings, S would have had a length other than one metre even at \( t_a \). How could S be the standard of a metre if the stresses and strains have not been neutralised? Perhaps Kripke rejects the possibility of paradigms, of standards. But if no paradigms are possible then no such activities as the activity of measurement is possible. Unless a scale of measurement is set up, how could any thing we measure? If Paris-stick is fluid, goes on changing from time to time, then we have to invent some other stick which may not be fluid. No universe is possible with the Heraclitian flux.

Consider now Kripke’s arguments for the possibility of necessary a posteriori statements. In the case of a contingent a priori statement there was one designator and one non-designator. Now Kripke uses two rigid designators in order to bring necessity to a statement about them. What is a rigid designator? According to Kripke, all proper names are rigid designators. So Nixon, Aristotle, Socrates, Sextus can be called rigid designators. One may imagine the possibility that Nixon was not U.S president in 1970, but one can not imagine the possibility that Nixon was not Nixon in 1970. So if someone is Nixon he remains Nixon in all possible worlds. Kripke has formulated the notion of possible worlds in his own fashion. For Leibniz it is impossible that numerically the same Nixon may occur in two possible worlds, though qualitative identity of two Nixons is not denied. So Kripke has deviated from the historical Leibniz who introduced the notion of possible worlds. Frege’s ‘evening star’ and ‘morning star’ had their resurrection in Kripke’s ‘Hesperus’ and ‘Phosphorus’. Kripke has brought sharpness to Frege’s expressions in order to convert them into genuine proper names. According to Kripke, the statement that ‘Hesperus is phosphorus’ is necessary. It is not contingent. Though necessary I do not know it a priori. It is only after empirical investigation that it was discovered that ‘Hesperus’ is the name of the same planet to which the name ‘Phosphorus’ was given. He quotes with approval Quine’s remark, “we may tag the planet Venus, some fine evening, with the proper name ‘Hesperus’. We

157
may tag the same planet again, some day before Sunrise, with the proper name ‘Phosphorus’. When we discover that we have tagged the same planet twice our discovery is empirical."\textsuperscript{92} So the knowledge that ‘Hesperus is Phosphorus’ is the result of an empirical investigation. But it does not mean that in saying ‘Hesperus is Phosphorus’ I am making a contingent statement. The statement is necessary, only its knowledge is a posteriori. If two rigid designators refer to the same object than the resultant statement would be necessary. Kripke rejects the view that all necessary statements must be a priori. As he remarks concerning the rigid designators ‘Cicero’ and ‘Tully’, “its true that someone can use the name ‘Cicero’ to refer to Cicero and the name ‘Tully’ to refer to Cicero also, and not know that Cicero is Tully. So it seems that we do not necessarily know a priori that an identity statement between names is true. It does not follow from this that the statement so expressed is a contingent one if true.”\textsuperscript{93} The sum and substance of Kripke’s argument is that one can have a posteriori knowledge of necessary truths. Identity between names exhibits such knowledge.

If Kripke and Quine are right then we hardly have any a priori knowledge of necessary truths. Most of the necessary truths, if not all, have been derived with the help of experience. In geometry experience plays its role more visibly than in other areas. But experience has its genetic role in all our knowledge. It is this truth that led Kant to say that all our knowledge begins with experience. And it is this genetic role of experience that led Mill to say that all our knowledge is empirical. But necessary and contingent are metaphysical or logical characterisations. Genetic question about them should not be raised. In saying that necessary statements are a priori what is meant is simply that their truth does not depend on experience. Kripke and Quine seem to share the attitude of Mill rather than that of Kant. Of course since ‘Kripke’ and ‘Quine’ are rigid designators, they refer to certain individuals that are wholly different from all other individuals existing in this or any other possible world.
The concepts that we have analysed in this chapter had their origin in Leibniz. Leibniz led us to Hume, Kant, Ayer, Carnap, Quine, Wittgenstein and Kripke. It was a kind of survey to see how these concepts were interpreted and reinterpretated from the time of Leibniz to the time of Kripke. All have affirmed that there are necessary truths in our language and conceptual system. Thereby they have affirmed that scepticism regarding necessary truths is wrong.

NOTES AND REFERENCES

3 Leibniz, *Philosophical Writings*, p. 87.
4 Ibid., p. 87.
5 Ibid., p. 87.
6 Ibid., p. 96.
7 Ibid., p. 96.
8 Ibid., p. 97.
9 Ibid., p. 97.
10 Ibid., p. 97-8.
11 Ibid., p. 99.
13 Quoted by Roderick M. Chisholm in his article "The truths of Reason" in *A Priori Knowledge*, ed. by Paul K. Moser, Oxford University Press, 1987, p. 120.
14 Ibid., p. 120.
15 Rescher, *Leibniz an Introduction to His Philosophy*, p. 43.
16 Ibid., p. 44.
17 Quoted by Rescher, *Leibniz an Introduction to His Philosophy*, p. 44.
18 Ibid., 44.
19 Quoted by Rescher, p. 43.
20 Ibid., p.27.
21 Leibniz, *Philosophical Writings*, p. 139.
22 Rescher, *Leibniz An Introduction to His Philosophy*, p. 50.
23 Hide Ishiguro, *Leibniz's Philosophy of Logic and Language* p. 125.
24 Quoted by Ishiguro, p. 124.
25 Leibniz, *Philosophical Writings*, p. 137.
27 Ibid., p. 88.
Kegan Paul, London, 1961, 2.021
29 Ibid., 2.0272.
30 Ibid., 2.0121.
31 Leibniz, *Philosophical Writings*, p.138.
32 Ibid., p.140.
34 Rescher, *Leibniz an Introduction to His Philosophy* pp.118-9.
37 Ibid., p. 25-6.
41 Ibid., p. 73-4.
42 Ibid., p. 74.
43 Ibid., p. 75.
46 Ibid. B., p.44.
49 Kant, *Critique of Pure Reason*, B., pp.52-3.
52 Ibid. A 150, p. 189.
53 Ibid. A 151, p.190.
54 Ibid. B 191, p. 190.
58 Ibid. p. 79.
61 Ibid. 6, 124.
64 Ibid. 85.
66 Quine, "Two Dogmas of Empiricism", p. 82.
67 Ibid. p. 89.
69 Quine, *Two Dogmas of Empiricism*, p. 92.
70 Ibid. p. 92.
71 Ibid. p. 92.
72 Ibid. p. 93.
73 Ibid. p. 93.
74 Ibid. p. 93.
75 Ibid. p. 93.
76 Ibid. p. 93.
78 Wittgenstein, On Certainty, 185.
79 Ibid. 225.
80 Ibid. 410.
81 Ibid. 96.
82 Ibid. 95.
83 Ibid. 97.
84 Wittgenstein, Philosophical Investigations, 50.
85 Saul A. Kripke, “A Priori Knowledge, Necessity and Contingency” in A Priori Knowledge ed. by Paul
86 Ibid. p. 152.
87 Ibid. p. 153.
88 Ibid. p. 153.
89 Ibid. p. 145.
92 Quoted by Kripke, p. 155.
93 Kripke, p. 156.