

## CHAPTER - II

# Tracing the Road Map of Discovery of Synthetic *A Priori* Knowledge

In the previous chapter we have seen how Kant had encountered a problem in his rational way of thinking and how and what had awakened him from his much talked-of slumber. In order to respond to Humean challenge he set his task which is also regarded as the main problem of his critical project. He grappled with this problem and offered solution which ranged around two decades. He found that the problem arose for not admitting the possibility of another type of knowledge—synthetic *a priori* knowledge. In order to discuss Kant's theory of synthetic *a priori* knowledge it is imperative to have a clear idea of the distinctions he made between *a priori* and *a posteriori* knowledge and also between analytic and synthetic knowledge. Let us begin with the former one.

### Tracing the origin of *a priori* and *a posteriori* distinction

The distinction between the empirical (*a posteriori*) and the *a priori* is primarily an epistemological one. To put it simply an *a posteriori* knowledge is that knowledge which depends on sense-experience and an *a priori* knowledge is that type of knowledge which does not depend on sense experience. Since the time of *Critique of Pure Reason* where Kant first articulated the nature, characteristics, etc. of *a priori* knowledge, a lot of discussion has taken place about the essential attributes of this knowledge, about its possibility and so on. On account of this, a huge literature has come into existence on this type of experience. When it is said that *a priori* knowledge is independent of experience, as we have seen, what it actually means is that in terms of the validation of the proposition it is independent of experience. Thus we can define an *a priori* judgement as a judgement the truth of which we can determine without any reference to sense experience.

Since the first *Critique* and throughout all the later *Critiques*, in some way or other, Kant was preoccupied to show the role of *a priori* knowledge in our experience. This endeavour of him illustrates the emphasis laid by him on *a priori* knowledge. An effort to track down the history of the concept of *a priori* gives us the impression that the concept was there in philosophy much before Kant. Let us get a quick look-through how its use became popular in philosophy.

The phrases '*a priori*' and '*a posteriori*' are basically Latin which literally mean 'from what comes before' (or before experience) and 'from what comes later' (or after experience). We can trace its early philosophical use, though without using exactly these terms, in Plato's theory of recollection found in the dialogue *Meno* (380 B. C.). In pre-Kantian philosophy the notions of *a priori* and *a posteriori* were used to distinguish between modes of logical demonstration. When the mind reasoned from causes to effects, the demonstration was called *a priori* and when reasoned from effects to causes, the demonstration was called *a posteriori*. The terms *a priori* and *a posteriori* literally mean 'from what is prior' and 'from what is posterior'. Aristotle in his *Posterior Analytics* holds that A will be called prior to B in knowledge if we can show that, we cannot know B without knowing A. To put it in a different way, if to know B we need at first to know A, then A will be called prior to B in knowledge. If the above view is accepted, then it will follow that if we know something from what is prior then we know its cause. For Aristotle, a causal relationship can be demonstrated by a syllogism in which the term for the cause is the middle term. Hence, if we know something in terms of what is prior, then we have to know it in terms of a causal relationship. On the other hand, there is no such demonstration by means of which we can know something from what is posterior since in that case the knowledge will be of an inductive nature. In the opinion of Leibniz, when we know reality *a posteriori*, we know it by the effects of reality in experience. However, on the other hand, when we know reality *a priori* we know it by exposing the cause or the possible generation of the definite thing. As a consequence of this, Leibniz was able to make a

distinction between truths *a priori* — truths of reason — and truths *a posteriori* — truths of fact<sup>1</sup>.

### **Kant's contrast between *a priori* and *a posteriori* judgement**

Hume in his *Treatise* criticized this distinction. However, Kant's contribution was that he brought the concept to the forefront of discussion and gave prominence and imparted clarity to it. In the Introduction to the *Critique of Pure Reason* he introduces the concept and clarified it. In order to perform this task Kant contrasted it with the *a posteriori*. While the two terms referred traditionally two forms of demonstrations, as we have seen, and also to the kind of knowledge gained in those demonstrations, Kant extended their range beyond kinds of knowledge first to judgements and then to the very elements of knowledge. The distinction drawn between *a priori* and *a posteriori* knowledge is primarily epistemological as it contrasts two kinds of knowledge. Again, the distinction is sometimes regarded as referring to two kinds of epistemic justification. Thus we can say that an instance of knowledge is *a priori* if its justification condition is *a priori*. It is *a priori* in the sense that it does not depend on evidence from sensory experience. Another distinction introduced by him there is between analytic and synthetic distinction. However, we shall discuss this distinction later on.

For Kant, *a posteriori* knowledge did not pose any particular problem in philosophy. He pondered over Hume's objection and after a long cogitation he thought that Hume's sceptical attitude can be sufficiently countered if it can be proved that we need to show boldness to admit a kind of knowledge that was before unheard of, i. e. a kind of contra thinking. In order to do that he needed to prepare ground for that and this hard taskmaster made efforts to defend the validity of *a priori* knowledge and its elements. Most of Kant's analysis of the distinction between *a posteriori* and *a priori* knowledge focuses on the character of the *a priori* knowledge. The choice of this focus was motivated by the desire, as we have mentioned above, to defend his main thesis/intention— to show the possibility of the synthetic *a*

*priori* character of the judgements which in turn accounts for possibility of metaphysics.

In the Introduction to the 1<sup>st</sup> *Critique*, Kant asserts that all our knowledge begins with experience, but does not arise necessarily out of it<sup>2</sup>. A close reading makes it evident that, for Kant, all knowledge begins with experience. It happens so since, thinks this German philosopher, unless the senses stimulate the faculty of knowledge into action, knowledge in the sense of knowledge of *objects* cannot arise. Thus we can say that experience is the occasioning cause of our knowledge. A question often raised by the commentators: when we talk about *a priori* knowledge in what sense they are prior — are they prior temporally or logically. Some commentators are eager to show that they are temporally prior whereas some other lay emphasis on logical priority. The later view seems more plausible as in order of time no knowledge is prior to experience. When it is said that it is logically prior what it actually means is that it provides the principle of possibility of all our knowledge and also its principle of possibility is not dependent on experience.

In order to make crystal clear the concept of *a priori*, Kant distinguishes between relatively *a priori* knowledge and absolutely *a priori* knowledge. For Kant, relatively *a priori* knowledge is not *a priori* proper. It is not so as it ultimately depends, directly or indirectly, on experience. He gives an instance to prove his point: ‘This house will fall down if its support is withdrawn’. This is a relatively *a priori* judgement as though it is not based on the observation of the actual fall of the house, still it is deducible from an empirical general rule ‘All material bodies fall down when their supports are withdrawn’ in conjunction with the statement that this house is a material body. *A priori* knowledge is absolutely independent of experience in the sense that it is neither immediately based on sense observations nor also mediately grounded on experience by way of being either an empirical generalization or deducible conclusion from an empirical generalization.

Another sort of distinction of *a priori* knowledge Kant makes is between pure and non-pure *a priori* knowledge<sup>3</sup>. An *a priori* knowledge is

pure if it does not contain an element of empirical knowledge. To put it otherwise, an *a priori* knowledge is pure if the judgement as a whole is *a priori* and all its constituent concepts are *a priori*. It may happen that a judgement as a whole is *a priori* but at least one of its constituent concepts is empirical. Such judgement has been given the rubric non-pure *a priori* judgement, e.g., ‘Every event has a cause’, the concept of ‘event’ being empirical. Some commentators, however, (e.g. Korner) are of the opinion that an *a priori* judgement consists of *a priori* concepts and an *a posteriori* judgement consists of *a posteriori* concepts. However, this interpretation can easily be rebutted. In *Critique of Pure Reason* Kant’s intent was to show that a judgement consisting of *a posteriori* concepts may yet be *a priori*, though, of course, such a judgement was non-pure *a priori*. To clarify this point let us take an example ‘All red flowers are red’. This is an instance of *a priori* judgement, being analytic, although both its subject and its predicate concepts are *a posteriori*. Thus, we can say that whether a judgement is *a priori* or *a posteriori* cannot be said in judging the nature of its constituent concepts. Kant argues in various ways that they (*a priori* knowledge) are not only independent of experience, but also that they are even independent of the conditions of experience.

### **Marks of *a priori* knowledge**

In order to pinpoint an *a priori* knowledge Kant gives us two criteria: i) necessity and ii) strict universality. In the ultimate analysis it appears that both the criteria are different sides of the same coin. By necessity Kant means the impossibility of the opposite. He distinguishes between two senses of impossibility—logical and transcendental. A proposition is logically impossible if it is self-contradictory, i.e. one which either involves or can be shown by analysis to involve an explicit contradiction. A logically possible proposition is transcendently impossible if the state of affairs projected by it is unconstructible, i.e. incapable of exhibition in intuition (in space and time). For example, the proposition ‘All bodies are extended’ is necessary, because its opposite (contradiction)—viz, ‘Some bodies are not

extended’—is self-contradictory, being reducible to the contradiction ‘Some extended substances are not extended’. However, the proposition ‘Two straight lines cannot enclose a space’ is necessary, as its opposite—‘Two straight lines can sometimes enclose a space’—is, though logically possible, yet transcendently impossible, in so far as the two-sided figures projected by it is not constructible, i. e., not in principle capable of exhibition in the intuition of space. Thus it can safely be said that, for Kant, a necessary proposition is one of whose the opposite (contradictory) is either self-contradictory or unconstructible (i. e. counter-intuitive). Further deliberation will make it clear that a proposition which is necessary in the first sense is analytic, while a proposition which is necessary in the second sense is synthetically necessary. In this connection it will not be out of place to state that, for Kant, *a priori* proposition is necessary in a wider sense than the one in which a merely analytic proposition is necessary.

Another important identification mark of an *a priori* judgement is the universality. By ‘universality’ Kant meant universal validity—i.e. validity under all possible circumstances. A true universal proposition in this sense does not admit of the possibility of an exception. For example, we cannot conceive of the possibility of an exception to the truth expressed by the proposition ‘ $7+5=12$ ’ (which is a universal proposition). Universality in this sense should not be confused with universal quantification. These two should not be confused as not all universally quantified propositions are universal in Kant’s intended sense. For example, ‘All swans are white’ is universally quantified, but is not universal in this sense as it admits of the possibility of an exception. Not only that even a universal proposition, in the Kantian sense, may or may not contain a universal quantifier, e.g. ‘ $7+5=12$ ’.

It can be argued that universality need not be a sign of *a priori* because it can also be explained empirically through induction. In order to ward off this confusion Kant distinguishes between comparative and strict universality<sup>4</sup>. Inductive universality is only comparative, and not a strict one. An inductive generalization expresses a rule to which no exception has been found so far, but to which an exception is nevertheless allowed as possible.

There is a conceivable circumstance in which it is possibly false. Hence it is not strictly universal. Strict universality consists in excluding the possibility of an exception and it is this feature which cannot be explained by induction. It is this sort of universality that Kant ascribes to *a priori* knowledge. It is interesting to note that strict universality by virtue of its strictness already assumes a form of necessity.

A close scrutiny reveals that the purity of *a priori* knowledge is known by way of abstraction. For example, *a priori* forms of intuition, that Kant explores—i. e. space and time—are discovered by abstracting from experience everything which the understanding thinks through its concepts. In doing so it isolates sensibility and then separate off everything which belongs to sensation. In this process nothing remains except pure intuition and the mere form of appearances—which is all that sensibility can supply *a priori*. The same is equally true for the *a priori* concepts, i. e. categories, which are the conditions upon which the possibility of experience rests. These remain as underlying grounds when everything empirical is abstracted from appearances. Establishing the purity of *a priori* principles, however, itself requires a criterion as otherwise it will be impossible to ascertain when the process of abstraction has reached its terminus in the *a priori*. The criteria of universality and necessity are used to register the arrival of an *a priori* judgement or element. If this intuition or concept necessarily holds for every experience then it is *a priori*. Kant uses this argument on several occasions.

Having analysed the notion of *a priori* knowledge, Kant concentrates his efforts to demonstrate the existence of *a priori* principles and their necessary role in experience. In the second edition of the *Critique of Pure Reason* Kant argues that pure *a priori* principles are essential for the possibility of experience. If it were not the case, i. e. if all the rules of experience were derived from empirical sources and were, therefore, contingent, how could we derive certainty, he asks. This was indeed Kant's main concern that he desired to respond in the *Critique*. For Kant, it is the

purity of the *a priori* knowledge that imparted universality and necessity in our cognition.

Kant's *a priori* knowledge, what he considers as transcendental conditions, has its seat in one's cognitive faculties. Concepts such as time and space are counted among the list of pure *a priori* forms of intuitions. He explores pure *a priori* forms, of intuition and sensibility, in his transcendental aesthetic and transcendental logic. He reasoned that the human subject would not have experienced in the way as it experiences now if these *a priori* forms were not integral or in-built structure of human subject. For example, argues Kant, we would not have experienced the world as an orderly, rule-governed place unless time and cause were operative in our cognitive faculties.

This sort of claim has popularly come to be known as Kant's transcendental deduction. It needs to be borne in mind that the transcendental deduction does not rule out objectivity of *a priori* forms. However, in its discussion of a possible logic of the *a priori*, Kant strives to make the case for the fact of subjectivity and what sort of relation it holds with objectivity and the empirical.

The notion of *a priority* explicitly formulated, explained and made use widely in his philosophy by Kant did not remain standstill in post-Kantian era. With the onslaught launched by Quine an intensive search has begun to dig deep into the notion. On account of this intensive research many more facets of the notion has been unearthed. Let us try to have a bird's eye view of these facets.

### **Digging deep into the nature of *a priori* knowledge**

While elucidating *a priori* knowledge Kant explicitly stated that experience is a precondition for having comprehension of *a priori* knowledge. He also held that in spite of this precondition, *a priori* capacity has a justification which is independent of experience. What it implies is that some experience may be required for becoming aware of this capability or to

have access to this capability. Still, conditions of this awareness are distinct from its nature.

There are writes who opined that there are several variant notions of the *a priori*. These different forms have differing degrees of strength. Each differing notion is caused by a different interpretation of ‘experience’ as it occurs in the characterization of the *a priori*.

Different variations of the notion of the *a priori* are important for different theoretical purposes. Tyler Burge<sup>5</sup>, in his article ‘Frege on Apriority’ says that, for Kant, the conscious states of pure intuition are states which entitle a subject to make judgements of, e.g., geometrical principles, and furnishes us a justification which is independent of perceptual experience. He further contrasts the role played by Kantian intuitions with Frege’s philosophical explication of the *a priori* in his *The Foundations of Arithmetic*.

Moreover, being *a priori* is to be differentiated from being necessary. In other words we need to cognize the difference from being true purely in virtue of meaning from being knowable infallibly. American philosopher Saul Aaron Kripke in his *Naming and Necessity* broke the myth that all necessary truths are *a priori* and forcefully argued that the presumption that all necessary truths are *a priori* is mistaken. In order to substantiate his claim he gives the example of empirical identity statements such as ‘Hesperus is Phosphorus’, statements of material origin, such as ‘This lectern was originally made of (a particular piece of) wood’ and statements of kind essence and identity, such as ‘Gold has atomic number 79’. He argues that since these are not *a priori*, they cannot simply be true by convention. Conventionalism was already declining. Kripke’s arguments and similar ones from Putnam seemed to destroy it decisively. In spite of this claim a little reflection on Kripke’s argument make it clear that necessary truths that Kripke talked about are truths which are not logically necessary, but are still necessary absolutely. They have been called ‘metaphysically necessary’ by some thinkers. Kantian necessity, on the other hand, contains in its nucleus seed of logical necessity.

The above view and other modern elaborations make it clear that we need to draw a distinction between being *a priori* from being necessary i.e. from being true purely in virtue of meaning and from being knowable infallibly. The claim that a proposition is known to be true *a priori* in the actual world requires merely that it must have some non-empirical route for its justification. This claim is very different from claiming necessity. Some contemporary writers claim that necessary propositions can also be *a posteriori*. This claim only strengthens that necessity of a proposition does not ensure its *a prioricity*.

Assertion of a proposition as *a priori* also is not a commitment to the view that it is true purely by virtue of meaning. W. V. O. Quine showed that the idea that anything could be true purely in virtue of its meaning is a myth. In brief, we can say that a *priori* justification is not infallible justification. As one may be justified in believing an ordinary empirical proposition that might subsequently be revealed on empirical grounds to be false, likewise one may be justified in believing an *a priori* proposition that might subsequently turn out on *a priori* grounds to be false.

Another important point that merits our attention is that anyone who believes in *a priori* truth should not be categorized as a rationalist. There are empiricists, e.g. A. J. Ayer, who believed in the existence of *a priori* truths. Some writers suggest that in order to obtain a better understanding of the distinction between rationalist and empiricist positions we need to reckon not to the question of whether there exists *a priori* truths, but rather to the differing accounts which those respective positions tender for the existence of such truths.

Thus we may say that philosophical questions about *a priori* knowledge loaded with a number of subtle distinctions. Out of these three important distinctions are: the epistemological distinction between *a priori* and *a posteriori* knowledge, the metaphysical distinction between necessity and contingency, and the semantical distinction between analytic and synthetic truth. Some of the pertinent questions asked relating to these are: What are the necessary and sufficient conditions for one's having *a priori*

knowledge? Can we humans satisfy those conditions? Must every proposition knowable *a priori* be analytically as well as necessarily true? Or, can there be *a priori* knowledge of some synthetically true propositions or of some contingently true propositions? A more recent issue, emerges from the epistemological writings of Quine, is that whether the very notion of *a priori* knowledge is philosophically misleading or not.

A significant number of contemporary philosophers are devoting a lot of time to settle the relationship between *a priori* knowledge and necessity. More discussion will only help to delve deep into the problem and it is expected that by way of discussion a concept of minimal notion of *a priori* will emerge.

### **Debate about the notion of necessity**

Necessity, as we have seen, for Kant is one of the two criteria of *a priori* knowledge. We have already explained the Kantian notion of necessity. However, some critics opine that the Kantian notion of necessity is far from clear. Thus Richard Robinson<sup>6</sup> points out that expressions such as ‘necessary truth’ and ‘necessary propositions’ do not have any ‘single inevitable meaning’ and is open to an indefinite number of meanings. Then he separates what he takes to be the four clear senses of necessity, and goes on to argue that the Kantian sense is not precisely identical with anyone of them. In fact the notion of necessity, which can be traced back to the philosophy of early Greek atomist philosopher Leucippus, has been a matter of debate in the arena of philosophy time and again. In common parlance necessity is contrasted with chance. Leucippus in his philosophy held that nothing occurs by chance rather everything happens for a reason and by necessity. Later on we find in Aristotle’s philosophy the notion of logical necessity. The discussion thus started is still going on and with the advent of analytic philosophy the exploration has entered into a deeper level. Robinson’s attempt is a venture towards this direction.

The following four senses are distinguished by Robinson:

(a) **The compulsory-belief sense:** These are propositions which it is necessary for us or for some of us to believe. It is so as no occasion has arisen to doubt it or it appeared to us to be patently true or there were some convincing reason for us to believe it. A proposition is necessary to a person who, for some reason or other is compelled to believe it. Obviously, a proposition which is necessary to a person in this sense may not be necessary to another.

(b) **The Aristotelian or apodictic sense:** According to the Aristotelian logicians, a necessary proposition is a modal proposition of the apodictic variety. It is one which contains in its linguistic formulation such an apodictic sign as ‘necessary’ or ‘must’ or ‘cannot’ or the like. For Aristotle, a necessary proposition says that A ‘necessarily’ belongs (or does not belong) to B. The form of such propositions is something like ‘S must be P’, or ‘S cannot be P’ or ‘S is necessarily P’. Robinson shows that a proposition like ‘A father is a parent’ is not necessary in the present sense.<sup>7</sup>

(c) **The Leibnizian or the analytic sense:** According to Leibniz, a (true) proposition is necessary if its denial leads to a contradiction. Since Leibniz holds that the self-contradictoriness of the opposite of the necessary proposition can be brought to light by analysis of concepts, the Leibnizian sense may well be characterized as the analytic sense. It is analytic kind of necessary proposition as Leibniz maintained in his *Monadology* that when a truth is *necessary*, its reason can be uncovered by analysis by means of resolving it into more simpler ideas and truths up to the time of arriving to those positions which are primary. Its meaning can be better understood if it is contrasted with contingent.

(d) **The universal sense:** A necessary proposition in this sense is one which is unrestrictedly universal or which asserts a universal connection. Thus if absolutely every S is P, then it is necessary that anything which is S is P. For Robinson, the contradictory of a necessary proposition, in this sense, is not a necessary proposition.

Robinson, who considers the above four senses to be quite clear and of course distinct from one another argues next that the Kantian sense of

necessity is not precisely identical with any one of these. Thus in the first place, the Kantian sense of necessity is not the same as the compulsory belief sense. For, according to Kant, if a proposition is necessary then one is compelled to believe it. This shows that compulsory believability is for Kant a consequence of necessity, and not its meaning. In the second place, a Kantian sense is not the same as the apodictic sense. For although some of Kant's necessary propositions (e.g. Two straight lines cannot enclose a space) are apodictically expressed some are not (e.g. Every event has a cause). In the third place, the Kantian sense is not the same as the analytic sense. For although, for Kant, all analytic propositions are necessary, the converse is not true. Kant admits synthetic necessary propositions also. In the fourth place, the Kantian sense must not be equated with the universal sense. For Kant at least intends to distinguish necessity from universality.

Robinson concludes that the Kantian sense of necessity is not a clear sense at all, but is rather a confusion of the above four clear senses of necessity. It is so as some of Kant's necessary propositions are psychologically compelling, some are apodictic, some are analytic and some are just universal. Finding no similarity with any particular sense he says that "the concept of necessary proposition is now a muddle, and that this muddle began with Kant."<sup>8</sup>

If we juxtapose Robinson's view vis-à-vis Kant's view it is difficult to think that Robinson has done justice to Kant. Kant has indeed a fairly clear sense of necessity which we may expound in the following way. Necessity, for Kant, consists in the impossibility of the opposite. He distinguishes two senses of impossibility: Logical and transcendental. A proposition is logically impossible if it is self-contradictory, i.e. one which either involves or can be shown by analysis to involve an explicit contradiction. Now a logically possible proposition is transcendently impossible if the state of affairs projected by it is unconstructible i.e. incapable of exhibition in intuition (in space and time). For example, the proposition 'All bodies are extended' is necessary, because its opposition (i. e. contradictory)—namely, 'Some bodies are not extended'—the self-

contradictory, being reducible to the contradiction ‘Some extended substances are not extended.’ Again, the proposition ‘Two straight lines cannot enclose a space is necessary, because, its opposite—Two straight lines can sometimes enclose a space — is though logically possible yet transcendently impossible, in so far as the two-sided figure projected by it is not constructible, i.e. not in principle capable of exhibition in the intuition of space.

We may say, therefore, that for Kant a necessary proposition is one of which the opposite (contradictory) is either self-contradictory or unconstructible (i.e. counter-intuitive). We may say that a proposition which is necessary in the first sense is analytic, while a proposition which is necessary in the second sense is synthetically necessary. Incidentally, it is clear that for Kant *a priori* proposition is necessary in a wider sense than the one in which a merely analytic proposition is necessary. Thus, the extension of both the concepts (i. e. *a priori* and analytic) are not same.

### **The Analytic/Synthetic Distinction**

Distinction between *a priori* and *a posteriori* judgments has been drawn by reference to the origin of our knowledge of them. This distinction also marks the difference traditionally noted in logic between contingent and necessary truths. However, the distinction between analytic and synthetic judgments has been done according to the information conveyed as their content. In the *Critique of Pure Reason* Kant writes: “Either the predicate B belongs to the subject A, as something which is (covertly) contained in this concept A; or B lies outside the concept A, although it does indeed stand in connection with it. In the one case I entitle the judgement analytic, in the other synthetic.”<sup>9</sup> Soon after that he states some of the characters of analytic and synthetic judgements. From the characters and definitions he offered of these two sorts of judgements it appears that the distinction holds only between categorical propositions having subject-predicate form. Analytic judgments are those judgements whose predicates are wholly contained in their subjects. They add nothing new to our concept of the subject, such

judgments are purely explicative and can be deduced from the principle of non-contradiction. Synthetic judgments, on the other hand, are those whose predicates are wholly distinct from their subjects. However, in spite of their recognizable difference there exists a connection between the two. Hence, synthetic judgments are genuinely informative but require justification by reference to some outside principle.

Philosophers before Kant had failed to differentiate properly between these two distinctions. Though Leibniz and Hume had made just one distinction, between ‘matters of fact’ based on sensory experience and the truths of pure reason, Kant held that the two distinctions are not entirely coextensive.

‘Analytic’ sentences, such as “Ophthalmologists are doctors,” are those whose truths are knowable by knowing the meanings of the constituent words alone. This is not the case in case of synthetic propositions, such as “Ophthalmologists are rich,” whose truth is knowable by knowing the meaning of the words and also acquiring some information about the world. Right from the time of Frege, many philosophers tried to show that knowledge of logic and mathematics and other seemingly *a priori* knowledge of philosophy and the foundations of science could be exhibited to be analytic by their careful ‘conceptual analysis.’ This effort however encountered a stiff opposition and led by Quine they aired their doubt the reality of the distinction. For example, Quine doubted about the existence of analytic judgements and argued elaborately that any attempt to define analyticity ultimately fail as it invokes notions in its definitions which belong to its family circle. He says that any proper definition must shun this practice. As analyticity cannot be defined and existence of such judgements is questionable the distinction between analytic and synthetic judgements becomes otiose. Thus the Kantian attempt to make this cleavage faces stiff resistance. We intend to discuss this in a later chapter.

## SYNTHETIC *A PRIORI* KNOWLEDGE

In previous sections we have discussed at length two landmark distinctions (distinctions between *a priori* and *a posteriori* and analytic and synthetic judgements) as made by Kant. We have also seen that the distinctions he made did not remain standstill in post Kantian period; rather it has unleashed an intensive search about the nature of these distinctions and also about validity of these distinctions.

Having discussed the above distinctions we need to consider their logically possible combinations. Such four possible combinations are:

- ❖ Analytic *a priori* judgement,
- ❖ Analytic *a posteriori* judgment,
- ❖ Synthetic *a posteriori* judgment, and
- ❖ Synthetic *a priori* judgment

Let us take a quick look at the nature of these combinations and their possibility in brief.

**Analytic *a priori*:** About the analytic *a priori* judgments it is usually agreed upon that they cover only logical truths and uncomplicated matters of definition. They are necessarily true. The possibility of such combination is not in question. Analytic truths can be known *a priori* because

- they make no claims about the world,
- they are only conventions that we follow to guide our language, and
- as soon as we learn our language, we know them.

So, there is no possibility of confirming or denying them in experience. Again, they are necessary because they guide our language. To violate them is to be guided by them and also to break them. Furthermore, it involves contradiction. Hence, they are necessary.

**Analytic *a posteriori*:** About Analytic *a posteriori* judgments it is usually agreed that such sort of judgement is not possible. Analytic *a posteriori* judgments is not possible as there is no need to appeal to experience in case of a purely explicative assertion. In order to express this impossibility sometimes it is said that they are contradiction in terms. However, there are

contemporary thinkers, e. g. Stephen R. Palmquist, who argues that Kant's view that this classification is empty or has no instance is challengeable. He considers this blending of analytic *a posteriori* not only as a valid epistemological combination, but also as the important grouping of the four combinations<sup>10</sup>. We find same echo in the writing of Andrew Curtofello also. However, this is a comparatively new analysis and was unknown at the time of Kant. Kant held that mathematical knowledge is synthetic *a priori* par excellence. For Palmquist, it is so from one perspective. From another perspective and which he thinks equally valid perspective it can be shown that they are, in some occurrences, analytic *a posteriori*. After a long analysis Palmquist contends that "synthetic *a priori* and analytic *a posteriori* are therefore similar classes of knowledge insofar as both are concerned with conditions imposed on the world by the subject..., but they differ by virtue of the fact that one imposes general conditions (*a priori*) with intuitive (synthetic) content, whereas the other imposes particular conditions (*a posteriori*) with conceptual (analytic) content."<sup>11</sup>

**Synthetic *a posteriori*:** Synthetic *a posteriori* judgments are the relatively uncontroversial. It did not generate controversy as we customarily think that matters of fact we usually come to know by means of our sensory experience. Kant and his predecessors were not at all at loggerheads about the possible combination of the above.

**Synthetic *a priori*:** The possibility of this combination or, if we state it differently, the feasibility of synthetic *a priori* judgments, is the crucial case. The determination of this possibility is compelling as it is the main bone of contention and it is at this point that Kant is in disagreement with his predecessors. Whereas Leibniz and Hume are of the view that such sort of combination is not possible, Kant is confident about the possibility of such judgements and he directs his attention to show how are they possible in different fields of knowledge. For Kant, only this sort of knowledge could provide new information that is necessarily true. In other words, admission of the possibility of this combination and demonstration of this possibility

can provide a befitting reply to Hume's view that no necessary connection exists between cause and effect.

For Kant, synthetic *a priori* judgments are possible. Not only are they possible but they actually provide the basis for significant portions of human knowledge. They play a pivotal role in our knowledge possibility which still now went unrecognized. For Kant, arithmetic and geometry consists of such judgments. Natural science also depends on them as a means to explain and predict events. What is more important, metaphysics — if it is to be possible at all — must rest upon synthetic *a priori* judgments. If it is denied, Metaphysics will be either uninformative or unjustifiable. The recognition of these reorganisation of combination (i. e. synthetic with *a priori* judgments) refutes the claims of sceptics, e. g. of Hume, that knowledge of metaphysics is impossible. It also paves way for getting rid of dogmatism. Thus conceding practicability of synthetic *a priori* cognition Kant could show that we can validly reason about the nature of the universe and can also establish the relationship between the real and the perceivable worlds. Not only that Kant also attempted to show that metaphysics also contains synthetic *a priori* judgments.

But how are synthetic *a priori* judgments possible at all? This is the central question Kant sought to answer. He calls it 'general problem of pure reason'. We can call it general problem of his critical enterprise. He says 'the proper problem of pure reason is contained in the question: How are *a priori* synthetic judgements possible?'<sup>12</sup> Kant was confident about the possibility synthetic *a priori* knowledge, e. g. in pure mathematics. On account of this conviction, he limits his task to show *how* this knowledge becomes possible. He begins his arguments with mathematics.

### **Synthetic *a priori* judgments in Mathematics**

Kant is of the view that all mathematical judgements without exception are synthetic, besides being *a priori*. He writes: "All mathematical judgements, without exception, are synthetic."<sup>13</sup> Soon after that he adds that though "it was found that all mathematical inferences proceed in accordance

with the principle of contradiction ..., it was supposed that the fundamental propositions of the science can themselves be known to be true through that principle.”<sup>14</sup> By saying this he refers to analytic principles and hold that this sort of thinking is mistaken. He reasons that “though a synthetic proposition can indeed be discerned in accordance with the principle of contradiction, this can only be if another synthetic proposition is presupposed, and if it can then be apprehended as following from this other proposition; it can never be so discerned in and by itself.”<sup>15</sup> About the point of *a prioricity* of mathematical propositions, apprehending objections from his critics, Kant limits his view to pure mathematics. Thus we find a crucial deviation of Kant from his predecessors and also of contemporaries. It is here that he claims a breakthrough of his philosophical thinking.

Leibniz and Hume admit in their own ways the *a priori* status of mathematical judgements, but they treat such judgements as analytic (however, without using the expression analytic). For they maintained that such judgements are certifiable by mere conceptual analysis in accordance with the law of contradiction. Kant differs from them on this point, holding that the synthesis asserted in mathematical judgements is grounded not upon conceptual analysis but upon intuition. Hence, the peculiarity of the Kantian position concerns the syntheticity, not the *a prioricity*, of mathematical judgements, since the *a prioricity* of such judgements is not questioned by anybody.

The *a prioricity* of mathematical judgements is vouchsafed by their strict universality and necessity. The question of particular interest is why Kant thinks then to be synthetic and not analytic. Kant begins by investigating arithmetical propositions. The judgements ‘ $7+5=12$ ’ is a typical arithmetical judgement, and Kant conducts his arguments with regard to it. He argues that the idea of 12 is not already contained in that of the union of the two numbers, 7 and 5. Logical analysis of the concept of  $7+5$  yields the simpler concepts of 7, 5, and of addition; and, surely, Kant seems to claim, the concept of 12 is not identical with anyone of these simpler concepts. ‘ $7+5$ ’ represents a problem to which the solution is 12. If the solution, holds

Kant, were already conceptually contained in the problem, the problem would no longer be a problem. As the idea of 12 is not already logically contained in that of  $7+5$ , the judgement is not analytic, and if it is not analytic, it must be synthetic. Kant argues further that the judgement can be established (certified) only by having recourse to intuition. We may take 7 and 5 dots which are respectively the intuitions corresponding to the concepts of 7 and 5; and it is by counting the dots that we arrive at the result, i.e., at the number 12. Counting is a synthetic operation of adding unit to unit. This recourse to intuitions and to a synthetic operation shows clearly that the judgement in question is synthetic.

Kant argues further that the synthetic character of an arithmetical judgement will be more evident if we take larger numbers. For than it will be clear that however much we may turn and twist the numbers, we cannot, merely by such manipulation or conceptual exercise, arrive at the results. Writes Kant: "This is still more evident if we take larger numbers. For it is then obvious that, however we might turn and twist our concepts, we could never, by the mere analysis of them, and without the aid of intuition, discover what ... is the sum."<sup>16</sup> In this argument Kant is subtly suggesting an important distinction to be made: namely, that between psychological association and logical implication. Owing to our familiarity with the judgements  $7+5=12$ , the idea of  $7+5$  and that of 12 are psychologically associated with each other so intimately that we cannot entertain the one idea without calling up the other. This psychological association, however, is not itself evidence of logical implication.

An important objection to Kant's view, raised by Johann Schultz<sup>17</sup>, is that the judgements  $7+5=12$ , or any other such judgements, is a equation and so is an identical judgement. An identical judgement must be analytic.

Kant replies to this objection in his letter to Johann Schultz (November 25, 1788), a professor of Mathematics at the University of Konigsberg, along the following line<sup>18</sup>. The concept of  $7+5$  and that of 12 are "objectively" identical, but "subjectively" different. "Objectively" here means denotatively or extensionally, and "subjectively" means connotatively or intensionally.

The two concepts denote the same number, but they do not have the same connotation. (In the Fregean terminology, the two concepts have the same reference, but different senses.) Now, since the concepts are intensionally different, the judgement considered from the intensional point of view is not an identical or analytical judgement. The analytic–synthetic distinction is an intensional distinction: whether a judgement is analytic or synthetic is to be determined by considering whether or not the predicate concept is intensionally involved in the subject concept.

Incidentally we may point out that if we appreciate the intensional standpoint of Kant’s analytic-synthetic distinction, we can see the irrelevance of some contemporary criticism to the effect that arithmetical propositions are analytic. Such criticisms are made from the extensional point of view, which is foreign to Kant.

### **Syntheticity and *a priori* of geometrical propositions**

Like arithmetical propositions, geometrical propositions are synthetic. They are, of course, *a priori* because of their necessity. The judgement, e.g. “A straight line is the shortest distance between any two points”<sup>19</sup> cannot be regarded intelligible by any analysis of concepts. Here the predicate concept of the ‘shortest distance’ is quantitative and is not therefore logically involved in the subject concept of ‘a straight line’ which is qualitative. As the two concepts are of quite different nature, one is not analytically explicative of the other. A geometrical proposition is established not by the analysis of a concept, but by the construction of a concept. The technical term “construction of a concept” means the exhibition, in intuition, of an object or objects denoted by the concept. For example, the judgement “The angle-sum of a triangle is equal to 180°” cannot be established by any analysis of the concept of a triangle. The geometrician actually establishes this judgement by constructing the concept of a triangle i.e. by exhibiting the object denoted by the concept (namely, a triangular figure) in the intuition of space. The judgement is demonstrated with the help of the intuition of the

constructed (exhibited) figure supplemented by certain other auxiliary constructions. This appeal to intuition shows that the judgement is synthetic.

Let us state the matter in a more simplified form. Let us consider our knowledge that two plus three is equal to five and that the interior angles of any triangle add up to a straight line. These (and similar) truths of mathematics are synthetic judgments, Kant held, since they contribute significantly to our knowledge of the world. The sum of the interior angles is not contained in the concept of a triangle. Yet, clearly, such truths are known *a priori*, since they apply with strict and universal necessity to all of the objects of our experience, without having been derived from that experience itself. In these instances, Kant supposed, no one will ask whether or not we have synthetic *a priori* knowledge. The matter is so obvious that we do have this sort of knowledge. The question to settle is, how do we come to have such knowledge? If experience does not supply the required connection between the concepts involved in this knowledge, how does it come? is the moot question.

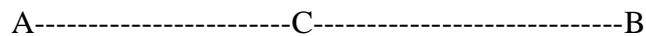
Kant's response to the above question is that we do it on our own. *Descartes* said in the *Fifth Meditation* that the essence of bodies is exhibited in Euclidean solid geometry and that determines the *a priori* structure of the spatial nature of objects we experience. To perceive any object they must be thought of as being uniquely located in space and time. Thus it is the spatio-temporal framework that accounts for the missing connection between the concept of the triangle and that of the sum of the angles of the triangle. Kant in the portion entitled "Transcendental Aesthetic" argues in detail that space and time are the pure forms of sensible intuition. It is only through these forms that we perceive whatever we perceive.

Before Kant, Leibniz also held that space and time are not constitutional features of the world. They are merely products of our minds. Newton, however, asserted that space and time are absolute and they are not merely a set of spatial and temporal relations. By holding that space and time are *a priori* forms of intuition, Kant seems to have accommodated views of Leibniz as well as Newton.

While discussing about synthetic *a priori* characteristics of geometrical judgements in the *Critique of Pure Reason* Kant has made a remark which may take us by surprise. It is this: “Some few fundamental propositions, presupposed by the geometrician, are, indeed, really analytic, and rest on the principle of contradiction.”<sup>20</sup> Examples of such propositions are: “ $a = a$ ” (i.e. “the whole is equal to itself”),  $(a+b) > a$  (i.e. the whole is greater than the part). This remark seems to contradict Kant’s initial assertion: “All mathematical judgements, without exception, are synthetic.” Kant’s own comments on the analytic judgements cited above are as follows:

- They ‘serve only as links in the chain of method and not as principles.’
- They ‘are only admitted in mathematics because they can be exhibited in intuition.’<sup>21</sup>

Thus the judgement “The whole is greater than the part can be exhibited *in concreto* by drawing a line AB and dividing it at a point C:



It is here intuitively clear that AB is greater than AC which is a part of AB.

These analytic judgements are not, strictly speaking, geometrical “principles”, since they are neither axioms nor definitions nor theorems. They are only “presupposed by the geometricians” as intuitive tools useable for purposes of demonstration.

### **Syntheticity of algebraic formulae**

Another important component of mathematics is algebra. Kant does not consider algebraic formulae in the Introduction to the *Critique of Pure Reason*. He considers them in the Transcendental Doctrine of Method<sup>22</sup>. He says that algebra chooses a certain notion for all constructions of magnitude as such — i.e. for addition, subtraction, extraction of roots, etc. After choosing the notions, it exhibits in intuition, according to certain universal rules, all the various operations by which magnitudes are produced and

modified. For example, when one magnitude is to be divided by another, their symbols are placed together, according to the sign of division. Thus in algebra by means of an ostensive construction, we come to arrive at results which cannot be discursively reached by mere conceptual analysis. It is, then, clear that the algebraic formulae are not analytic but synthetic.

### **Synthetic *a priori* judgements in natural science**

Kant also reasons that pure natural science, or physics, also contains synthetic *a priori* judgements. We know that pure science exists because there are universal laws, such as “substance is permanent” and “every event is determined by a cause according to constant laws.” These laws must not be *a posteriori*, because experience can only teach us what exists and how it exists, but not that it must exist. Neither are they *a priori*, for we must make our deductions from observations. However, the conformity of experience to constant laws must be an *a priori* understanding.

This understanding is the result of both judgments of experience, which are always valid and are based on *a priori* concepts of the understanding, and judgments of perception, which are subjectively valid and are based on simple observation. When a judgment of perception, or an intuition, is subsumed under this *a priori* pure understanding, it becomes a judgment of experience that is then objectively true and universal. This pure understanding consists of twelve concepts of understanding, called categories, which are *a priori* concepts derived from logical judgments. Thus, through our awareness we have perceptions. Then our sensibility, using the concepts of pure understanding, structures these perceptions into experiences which we use to form science. This process is called the schematism of pure understanding. Here schemata are notions of objects categorized and structured in time. The categories can only subsume schemata, and not awareness.

This system of natural science solves Hume’s problem of cause and effect. Instead of universal concepts being derived from experience using the innate human tendency to classify according to cause and effect, experience is derived from perceptions as they are subsumed under the pure universal

concepts, such as cause and effect. We still do not know, however, if these principles chronicle the actual world, or only our perceived world. However, as our experience is derived from pure universal concepts, which are only valid when applied to perceptions, the principles of science belong to the phenomenal world of appearances. Thus Kant has shown that through the pure concepts of understanding, we can derive principles of natural science concerning the phenomenal world.

To put it simply, in natural science, Kant held, synthetic *a priori* judgments provide the requisite foundations for human knowledge. The most general laws of nature, like mathematical truths, though cannot be justified by experience, yet their application is without exception, i.e. universal. David Hume's viewpoint that in case of matters of fact we base our view on an unfounded belief of a necessary connection between causes and effects was plausibly right. As Kant was not a die-hard empiricist it became easier for Kant to enter deeper into the issue and hence offered a transcendental argument. Taking recourse to a different way he candidly says that it is indeed a fact that we do have knowledge of the natural world. The acknowledgement of this truth takes us to the actuality of synthetic *a priori* propositions about the structure of our experience of it.

### **Synthetic *a priori* propositions in metaphysics**

Having shown that principles of natural sciences contain judgements which are synthetic as well as *a priori*, Kant attempted to show that even metaphysics also contain 'at least in intention' propositions which are *a priori* besides being synthetic. In the 'Preface to the First Edition' (of the *Critique of Pure Reason*) he in detail analysed the cause of current dismal state of metaphysics which was once regarded as 'the Queen of all the sciences'. Now it has become the battle-field of endless controversies. Kant claims to have identified the cause of this and writes that it "finds itself compelled to resort to principles which overstep all possible empirical employment, and which yet seem so unobjectionable that even ordinary consciousness readily accepts them. But by this procedure human reason

precipitates itself into darkness and contradictions...”<sup>23</sup> This has caused it to fall from the grace and time has earned her only scorn, ‘a matron outcast and forsaken’. Kant’s *Critique* is an attempt to free her from dogmatist and despotic administrators. In his words it is “a call to reason to undertake anew the most difficult of all its tasks, namely, that of self-knowledge, and to institute a tribunal which will assure to reason its lawful claims, and dismiss all groundless pretensions, not by despotic decrees, but in accordance with its own eternal and unalterable laws. This tribunal is no other than the *Critique of Pure Reason*.”<sup>24</sup>

In the ‘Introduction’ of the 1<sup>st</sup> *Critique* Kant calls metaphysics an ‘indispensable science’. This crucial science ‘ought to contain’ judgements which possess characteristics of both syntheticity and *a prioricity*. Kant makes it clear that the task of ‘the Queen of all the sciences’ is not only to anatomize concepts ‘which we make for ourselves *a priori* of things’ which has the overtone of analytical examination or investigation. Rather our aim in this branch of knowledge should be to expand arena of our *a priori* knowledge. It is with this aim we need to “employ principles which add to the given concept something that was not contained in it...”<sup>25</sup>

Kant discerned that one key reason for current state of metaphysics (i. e. its uncertainty and contradictory opinions) was that thinkers before him failed to make clear distinction between analytic and synthetic judgements. He cites the instance of Hume who though came closer to foreseeing the problem could not achieve success as he also could not envision the aforesaid distinction and remained preoccupied with synthetic judgements only. It led him to hold the view “When we run over libraries ... what havoc we must make? If we take in our hand any volume; of divinity or school metaphysics, for instance; let us ask, Does it contain any abstract reasoning concerning quantity or number? No. Does it contain any experimental reasoning concerning matter of fact and existence? No. Commit it then to the flames: for it can contain nothing but sophistry and illusion.”<sup>26</sup> This statement of Hume makes it amply clear that for him only worthy propositions were synthetic propositions and *a priori* propositions. Hence to

him metaphysics was a matter of mere delusion. On account of this way of thinking, writes Kant, “we fancy ourselves to have rational insights into what, in actual fact, is borrowed solely from experience, and under the influence of custom has taken the illusory semblance of necessity.”<sup>27</sup>

The nature of enquiry of synthetic *a priori* principles in pure mathematics and natural sciences on the one hand and metaphysics on the other are diametrically different. As the former group does actually exist the question that needs to be addressed is *how* they are possible. Their existence and progress are proven fact. However, this is not the case with our ‘Queen’. It is so on account of its poor progress which prompted to doubt its feasibility.

But our German philosopher says emphatically that metaphysics actually exist and reign supreme. Its nature is not similar to science, but nonetheless it exists as natural disposition of human being. Whether we like it or not, we want it or not, it will continue to be there. The adventure of human mind cannot remain content only within a realm which is present in front of our sense-experience. It is its inherent nature that drives us beyond this. Writes Kant: “For human reason, without being moved merely by the ideal desire for extent and variety of knowledge, proceeds impetuously, driven on by an inward need, to questions such as cannot be answered by any empirical employment of reason, or by principles thence derived.”<sup>28</sup> Hence Kant formulates his first question

How is metaphysics, as natural disposition, possible?

It is an enquiry into the nature of human reason. The peculiarity of human reason is that it gives rise to such questions which it cannot adequately answer. Previous record of metaphysical discourse amply proved that. And this failure or non-substantial progress of previous attempts makes us self-reflect. It forces us not to remain smug and limit our enquiry into metaphysical knowledge merely as natural disposition. It is exactly here that Kant pins his ultimate question of the 1<sup>st</sup> *Critique* down. He goes ahead and formulates his final question by way of saying: “ It must be possible for reason to attain to certainty whether we know or do not know the objects of

metaphysics, that is, to come to a decision either in regard to the objects of its enquiries or in regard to the capacity or incapacity of reason to pass any judgement upon them, so that we may either with confidence extend our pure reason or set to it sure and determine limits.”<sup>29</sup> Having said this he states the question of enquiry in the following way

How is metaphysics, as science, possible?

We now find that Kant is in search of metaphysical knowledge which will have scientific certainty. It does not delve with objects of reason rather with itself, i. e. to know the capacity and limit of it. When we can fathom the power of reason “in respect of objects which can be presented to it in experience, it should easily be able to determine, with completeness and certainty, the extent and limits of its attempted employment beyond the bounds of all experience.”<sup>30</sup> Kant is confident that a successful investigation of this will put metaphysics into a pedestal equal to science. He calls it ‘metaphysics proper’. This metaphysics proper is the expansion of synthetic *a priori* knowledge. The paramount difference between two types of metaphysics, i. e. metaphysics priori to him and metaphysics that he intend to give, is that the former one attempted to pointless analysis of concepts (it is ineffectual because it took recourse to futile analysis of concepts and did not pay attention to discovery to the track ‘how we arrive at them *a priori*’) whereas the latter one strived to answer the question how do we arrive at them *a priori*. This is an uphill task that our master set to accomplish. This finding will have far reaching implication as valid employment of these newfound concepts will determine the validity claim of other many branches of knowledge too. He now discovers these concepts under two heads: intuition and understanding.

Space and time, or forms of intuition, are sine qua non for any perception. But this is not enough for our knowledge. Knowledge, however, is an intricate process. Hence knowledge process requires that in addition to sensation, thought is also required for completion of the process. Sensations gathered through space and time need to be arranged and organized. Otherwise there will only be a chaos of sensory images. This prompted Kant

to say that sensations without concept are blind. Kant thus has begun his hunt for searching out these principles which perform this ordering and organizing task. This search for synthetic unity (that unites sensory diversities) was an arduous task for Kant. He was confident that a subject, i. e. a knower, has the inherent capacity to execute this task of systematization by unearthing the links amongst perceived impressions (to use a Humean term). Kant’s theory of transcendental unity of apperception shows how this function is accomplished. The fact that we obtain knowledge entails that there is some rhythm in what is known and also there is knower in whose knowledge geography this can be presented.

As Kant was preoccupied to respond to Hume or Hume’s view — that we gain only impressions of individual images having no necessary links between them — Kant painstakingly found that connections between them can be mapped only by knowing the structure of the subject. These connections are the principles of linkage that dovetail perfectly. Instances of synthetic *a priori* judgement discussed before from mathematics and natural sciences have been derived from the make-up or very constitution of the understanding itself.

In his search for the aforesaid principles Kant takes clue from logicians. He showed how our judgements contain in some way or other forms of quantity, quality, relation or modality. Now he says that any comprehensible experience can be and as we have no choice other than these and hence must be expressed in these forms of thought. These are inevitable patterns of any possible experience.

In the ‘Transcendental Logic’ Kant systematized the table of the aforesaid patterns and he call them categories of understanding.<sup>31</sup>

**Table of Categories**

<b>Of Quantity</b>	<b>Of Quality</b>
Unity	Reality
Plurality	Negation
Totality	Limitation
Axioms of Intuition	Anticipations of

	Perception
<b>Of Relation</b>	<b>Of Modality</b>
Substance	Possibility
Cause	Existence
Community	Necessity
Analogies of Experience	Postulates of Empirical Thought

Having schematized our forms of thought now Kant says that our convictions about the natural world are obtained from these concepts and hence they contain elements of necessity that Hume was unable to uncover. Kant emphatically declares that principles of natural sciences are not derivation from empirical generalization, rather they are synthetic *a priori* understanding and in this awareness we find crucial connective concepts.

After a long arduous journey now Kant establishes that synthetic *a priori* proposition indeed exist in different realm of our knowledge. Thus his exercise shattered the myth that this combination of judgements, i. e. synthetic and at the same time *a priori*, is impossible.

However, Kant did not rest quite with his discovery of new sort of knowledge. He was quite confident that such knowledge existed in other fields of human enquiry. Hence he set his task to unfold that and present to his readers. He could trace its existence in the field of morality and in the field of aesthetic experience. Though their nature may have slight variation still they are synthetic *a priori* knowledge.

We shall discuss these two types of synthetic *a priori* comprehension in a greater detail in next two successive chapters. However, what is important to mention here that Kant's view given in the *Critique of Pure Reason* brought a revolution, and Kant himself, claimed it in the world of philosophical thinking. He called this Copernican revolution on account of its similitude with the revolution in astronomy brought about by the Polish astronomer Nicholas Copernicus. It is revolutionary as he placed human

capacity at the center stage and took away object of knowledge from the position that empiricists love to see.

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<sup>1</sup> Leibniz, G. *New Essays Concerning Human Understanding*, Book III., Chapter 3

<sup>2</sup> Kant, I. *Critique of Pure Reason*, (Norman Kemp Smith's translation), Palgrave Macmillan, 2007, p.41.

<sup>3</sup> Ibid., p.44

<sup>4</sup> Ibid., p. 44

<sup>5</sup> <http://www.oxfordscholarship.com/view/10.1093/0199241279.001.0001/acprof-9780199241279-chapter-2>

<sup>6</sup> Robinson, Richard: "Necessary Propositions" (available in *Mind*, Vol. 67, July 1958) (source: <http://www.jstor.org/stable/2251528>, accessed on 24-4-2018)

<sup>7</sup> Ibid., p. 290.

<sup>8</sup> Ibid. 293.

<sup>9</sup> Ibid. p. 48.

<sup>10</sup> In "Knowledge and Experience – An Examination of the Four Reflective 'Perspectives' in Kant's Critical Philosophy", *Kant-Studien* 78:2 (1987), pp.170-200.

<sup>11</sup> Palmquist, Stephen: "A Priori Knowledge in Perspective: Naming, Necessity and the Analytic a Posteriori" published in *The Review of Metaphysics*, Vol.41, No. 2 (Dec., 1987), p. 273. (Source: <https://www.jstor.org/stable/20128592>, accessed on 15<sup>th</sup> May, 2019).

<sup>12</sup> *Critique of Pure Reason* (Norman Kemp Smith's translation), Palgrave macmillan, 2007, p. 55.

<sup>13</sup> Ibid., p. 52.

<sup>14</sup> Loc cit.

<sup>15</sup> Loc cit.

<sup>16</sup> Ibid., p. 53.

<sup>17</sup> *Kant :Philosophical Correspondance1759-99*, (edited and translated by Arnulf Zweig), The University of Chicago Press, 1967, pp. 108-111.

<sup>18</sup> We come to know that correspondence between these two professors took place at least on 15 occasions.

<sup>19</sup> *Critique of Pure Reason* (Norman Kemp Smith's translation), Palgrave macmillan, 2007, p. 53.

<sup>20</sup> Ibid, p. 54

<sup>21</sup> Ibid., p. 54.

<sup>22</sup> Ibid., p. 590.

<sup>23</sup> Ibid., p. 7.

<sup>24</sup> Ibid. p. 9.

<sup>25</sup> Ibid., p. 54.

<sup>26</sup> Hume, David: *An Enquiry Concerning Human Understanding* (with an Introduction by Dr J. N. Mohanty), Progressive Publishers, Calcutta, 1982, p. 131.

<sup>27</sup> Ibid., p. 55.

<sup>28</sup> Ibid. p. 56.

<sup>29</sup> Ibid., p. 57.

<sup>30</sup> Loc. cit.

<sup>31</sup> Ibid., p. 113.

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