Chapter 5
Kant’s theory of understanding

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Chapter-5
Kant’s theory of understanding

5.1 Introduction:

In previous chapter the, status of transcendental aesthetics has been examined with particular reference to Kant’s theory of space and time. A possible implication of transcendental aesthetics for transcendental dialectic have also been examined. Before taking the main theme of this research work into critical consideration it is necessary to have a comprehensive interpretation and an overall reconstruction of Kantian position in transcendental analytic. This is going to be undertaken in the present chapter.

As sensibility is the main focus of transcendental aesthetics, understanding is the center theme of transcendental analytic. Theory of intuition has a counterpart of Kant’s theory of space and time and the concept of understanding has its counterpart in Kant’s view of logic. So before examining Kant’s theory of understanding and its possible field of employment, it is necessary to have a brief review of Kant’s view of logic and Kant’s division of logic.

5.2 Kant’s theory of transcendental logic:

According to Kant any systematic discipline must be a science and for Kant the concept of science is very much wide. According to Kant if a discipline of study is to be considered as a science, then it must have synthetic apriori propositions in it. This is not limited only for theoretical or abstracts subjects like mathematics and physics but its implication expands to ethics also.1 so for Kant if a subject is to be considered as an ideal science then it is logic. Kant makes this clear in the preface to the second edition of ‘critique of pure reason’.2

“That from earliest times logic has traveled this secure course can be seen from the fact that since the time of Aristotle it has not had to go a single step backwards, unless we count the abolition of a few dispensable subtleties or the more distinct determination of its presentation, which improvements belong more to the elegance than to the security of that science what is further remarkable about logic is that until now it has also been unable to take a single step forward, and therefore seems to all appearance to be finished and complete.”
In this passage Kant observes that logic has travelled the secure Path of science. For Kant if anything has acquired a status of science, then it must have reached to the state of perfection. And there is nothing which can be said as backward or forward movement from a perfect state. So, Kant says that, logic has not moved either a single step backward or forward since the time of Aristotle. This, somehow, seemingly over-estimation about the status of logic, is a serious drawback of entire modern western philosophy. It is an astonishing fact that no philosopher has ever attempted in the direction of the modification of logic. So logic remained in status quo for almost 22 centuries. The real advance in logic is made by 19th and 20th century logicians like Frege and Russell. But for Kant, the only available source in the field of logic is Aristotelian classical logic together with his theory of syllogism. Kant wants to make an application of existing logic to his epistemology for finding out the basic components and content of the basic components and content of understanding. So, Kant wants to investigate a new branch of logic in the applied field which he calls transcendental logic. Before taking Kant’s concept of transcendental logic seriously, it is necessary to see that what are Kant’s views about general and pure logic Kant states his views about general and pure logic as follows.

“As general logic it abstract from all contents of the cognition of the understanding and of the difference of its objects and has to do with nothing but the mere term of thinking.

As pure logic it has no empirical principles, thus it draws nothing from psychology (as one has occasionally been persuaded), which therefore has no influence at all on the canon of the understanding. It is a proven doctrine, and everything in it must be completely a priori.”

Kant’s definition of general and pure logic indicates that according to him, logic is a purely formal subject. And it has nothing to do either with any empirical principles or any content of cognition. If logic is to be taken in this way, then there can be hardly any room of its use in Kantian epistemology because in this reference logic is a content independent or content natural discipline. So Kant logic. In Kantian reference, the term ‘transcendental’ generally does not refer to the existence of a para-empirical reality. This is an epistemology related term, and so, by transcendental logic Kant does not mean either meta-logic or any type of mystical logic. Kant explains his view on transcendental logic in the following words.
“In the expectation, therefore that there can perhaps be concepts that may be related to objects a priori, not as pure or sensible intuitions but rather merely as acts of pure thinking, that are thus concepts but of neither empirical nor aesthetic origin, we provisionally formulate the idea of a science of pure understanding and of the pure cognition of reason, by means of which we think objects completely a priori. Such a science, which would determine the origin, the domain, and the objective validity of such cognitions, would have to be called transcendental logic, since it has to do merely with the laws of the understanding and reason, but solely insofar as they are related to objects a priori and not, as in the case of general logic, to empirical as well as pure cognitions of reason without distinction.”

For Kant, transcendental logic differs in application from pure logic. Transcendental logic is also a science and the task of this science is to determine the origin, scope and objective validity of pure concepts of understanding. Here we have to focus on the analysis of the term pure. In transcendental aesthetics space and time are pure forms of intuition. But they are somehow supposed as immediately given. They are not to be investigated either by a mathematical or geometrical method. But here Kant wants to find out the pure form of understanding, and here Kant’s goal is to find out nature and number of these pure forms and their objective validity. This is in part similar to metaphysical exposition of space and time in transcendental aesthetics for the proof of their pure and intuitive character and transcendental exposition of space and time for the proof of their objective validity. But for the case of pure form of understanding the task is very much difficult. Because it is not a-priori clear that on what ground and by which method the pure forms of understanding are to be discovered. Through transcendental logic Kant want to discover the pure forms of understanding. How these forms are to be discovered? The answer of this question depends on another question that what is the function of understanding? For Kant, or for any modern western philosopher the function of understanding is to impart or construct a judgment. Now if this analysis is to be carried forward then what is judgment? Judgment is a statement which makes a connection between two concepts which are designated by its terms. And this connection is generally made by copula ‘is’. This is the classical position of Aristotelian logic where the judgment are classified as per quantity and quality.6

Now Kant does not want to modify this formal classical logic. Kant accepts all formal divisions of Aristotelian logic. For example he does not question that whether
a relational proposition, and particularly exploring asymmetrical relation, is a subject predicate type categorical proposition at all. So Kant wants to expand the field of applied logic which becomes clear from his definition of truth which he states as follows.

“The old and famous question with which the logicians were to be driven into a corner and brought to such a pass that they must either fall into a miserable circle or else confess their ignorance, hence the vanity of their entire art, is this’ what is truth? The nominal definition of truth, namely that it is the agreement of cognition with its object, is here granted and presupposed; but one demands to know what is the general and certain criterion of the truth of any cognition.”

Here Kant clearly indicates that he is accepting a form of corresponding theory of truth. But the determination of truth value only on formal ground does not solve the fundamental question of Kant’s transcendental philosophy. It is generally believed among scholars of Kant that by introducing transcendental logic Kant has not made any real advance in formal logic. Yet the epistemological conditions which Kant wants to investigate remains important for a comprehension of his discovery and validity of the pure form of understanding. So it is necessary to have a look into Kant’s view of formal and transcendental logic and their divisions into analytic and dialectic.

5.2.1 Kant on formal or general logic:

Classical logic is totally accepted by Kant and as we have seen, it is taken as an example of a systematic science. Here for Kant logic has two aims. And these aims are to be determined on the ground of the use of logic. So according to Kant; logic can be divided into two broad categories.

1.) Pure logic
2.) Applied logic

Kant differentiates these two logics in the following words.

“A general but pure logic therefore has to do with strictly a priori principles, and is a canon of the understanding and reason but only in regard to what is formal in their use, be the content what it may (empirical or transcendental). A general logic, however, is then called applied if it is directed to the rules of the use of the understanding under the subjective empirical conditions that psychology teaches us. It therefore has empirical principles, although it is to be sure general in so far as it
concerns the use of the understanding without regard to the difference of objects. On this account it is also neither a cannon of the understanding in general nor an organon of particular sciences, but merely a cathartic of the common understanding.”

This division between pure and applied logic seems somehow vague and arbitrary, because so far as logic is concerned its formal character is established since Aristotle and it has never become a subject of inquiry. Now what Kant says is somehow ambiguous. Because, according to Kant, a general logic can be called applied when rules of the understanding under the subjective empirical conditions that psychology teaches, becomes operative. This is somehow a strange position which is being taken by Kant here, because as a general conviction, it is quite true that the laws of logic is not to be identified with the laws of psychology. It is a stand psychologism in logic which is effectively refuted by Aristotle himself, or more recently, by Frege. So Kant’s division of pure and applied logic is somehow arbitrary and ambiguous.

It is even surprising that Kant makes a division of general logic into analytic and dialectic. Generally, so far as formal logic is concerned, no such divisions can be seen and here lies the route of Kantian considerations of self, universe and God as the objects of transcendental illusion. Leaving that portion temporarily aside, so far as this division is concerned it is not still becoming clear that what is the actual difference between analytic and dialectic. In contemporary reference, what Kant calls analytic is the syntactical object language of a given logical system. So it can be reasonably concluded that Kant’s division of general or formal logic into analytic and dialectic is artificial and does not amount to any substantial change, growth, development or refutation of formal logic. Formal logic remained where it was. Now it is important to see how the same procedure is to be applied to Kant’s transcendental logic and in which way this supposed division is fruitful in that realm.

5.2.2 Kant’s transcendental logic:

As it has been made clear in the previous sub sections, that transcendental logic is not a separate branch of formal logic. This branch appears when logic is to be connected with epistemology and this connection determines the scope, nature and formation of cognition. For Kant the word ‘transcendental’ has many uses in critique. But what is common in each use is the isolation and abstraction of any given faculty
from its empirical content. In the same way, while making the division of transcendental logic into transcendental analytic and transcendental dialectic, Kant makes this clear in following words:

“In a transcendental logic we isolate the understanding (as we did above with sensibility in the transcendental aesthetic), and elevate from our cognition merely the part of our thought that has its origin solely in the understanding. The use of this pure cognition, however, depends on this as its condition: that objects are given to us in intuition, to which it can be applied. For without intuition all of our cognition would lack objects, and therefore remain completely empty.”

In this observation Kant explicitly provides the basic clue for transcendental dialectic which states his theory of transcendental illusion. Even at the level of the functioning of understanding, despite all possible isolation of intuitionally furnished empirical content, remains empty in the complete absence of object of cognition. If this type of situation occurs, then transcendental logic becomes dialectic. In other words understanding in co-operation with intuition is genuinely functioning intellect and the discovery of this type of intellect falls in the realm of transcendental analytic. But if cognition becomes pure, not as the result of the isolated abstraction of empirical content but in the complete absence of object of cognition, then transcendental logic becomes dialectic. But as with the case of general logic, the division into analytic and dialectic, does not provide any real division in the realm of pure logic. So it can be said that this division amounts to a particular position of Kant’s epistemological commitment rather than a genuine division of even epistemologically applied logic.

With this brief consideration on Kant’s view of logic about this division into analytic and transcendental, it is necessary to inquire that what is the basic characteristic of understanding and this leads towards the most difficult and obscure subject of Kant’s theory of categories and its two fold deductions, which will be dealt in the next sub section.

5.3 Kant’s theory of categories:

Kant’s theory of categories is one of the most important and most difficult part of critique of pure reason. Some critiques like H. J. Paton has stated that it is even more difficult to understand the details of the transcendental deduction of categories than to cross the Gobi desert. Here the first thing which is necessary, is to make a clarification that what actually a category is? To which faculty does it belong? And
how does that faculty work with these categories. Kant makes a complete attempt for arriving at definite conclusions.

The discussion about the nature of category occurs on the sub section of section one. With the title ‘of the analytic of concepts’. The first chapter is entitled as ‘on the clue to the discovery of all pure concepts of understanding’ and after a preliminarily expository paragraph this subtitle is changed into ‘on the transcendental clue for the discovery of all pure concepts of the understanding’. This title suggests many things in a nut shell. There must be an inclusive search of pure concepts of understanding as an epistemological faculty. In the case of intuition, which is also an epistemological faculty, there are pure forms and number of these pure forms is two. In the same way the, constituents of understanding are concepts. And as this is transcendental logic and more specifically it is transcendental analytic, the task is to discover all pure concepts of understanding. Before that it is necessary to understand the function of understanding in Kant’s epistemology which Kant explains in the first section of the first chapter of the analytic of concepts with the title ‘on the logical use of the understanding in general.’ Kant wants to explain the exact function and meaning of the ‘understanding’. Certain points are generally clear. It is a power of mind and in mind it functions as a faculty which produces representations. But this representation is to be considered in transcendental analytic as a second order representation over representation of that which is provided by pure form of intuition. For this, it is necessary to define and analyze the positive function and structure of understanding.

Kant makes it clear that understanding is generally understood, and hither to so understood in critique also, as a negative concept. And this negative concept means that understanding is a faculty which is non-intuitive and non-sensuous. And so it is clear that from these negative views that understanding is not a faculty of intuition. That means it cannot present any object, or a direct representation of any object, before mind. But as an epistemological faculty it has to function somehow as the functioning ingredient or machinery of ingredient on those epistemological concept which are concepts. So understanding has to deal with concepts and how this dealing is related to logic is to be specified. This has been specified by Kant in the following way.

“Now the understanding can make no other use of these concepts than that of judging by means of them. Since no representation pertains to the object immediately except
intuition alone, a concept is thus never immediately related to an object, but it always related to some other representation of it (whether that be an intuition or itself already a concept). Judgment is therefore the mediate cognition of an object, hence the representation of a representation of it. In every judgment there is a concept that holds of many, and that among this many also comprehends a given representation, which is then related immediately to the object. So in the judgment, e.g. “all bodies are divisible.” The concept of the divisible is related to various other concepts; among these, however it is here particularly related to the concept of body and this in turn is related to certain appearances that come before us. These objects are therefore immediately represented by the concept of divisibility. All judgments are accordingly functions of unity among our representations, since instead of an immediate representations a higher one, which comprehends this and other representations under itself, is used for the cognition of the object, and many possible cognitions are thereby drawn together into one. We can, however, trance all actions of the understanding back to judgments, so that the understanding in general can be represented as a faculty for judging. For according to what has been said above it is a faculty for thinking."

In this observation, the example which is taken by Kant is ‘All bodies are divisible.’ Here it is also important to note that Kant has not taken, the example: ‘All bodies are extended.’ Because this proposition is an example of an analytic proposition. According to Kant but ‘All bodies are divisible’ is not an analytic proposition. So first thing is this that here Kant is dealing with synthetic judgments. Now a point which is to be considered is this that, for the function of understading, why judgments are necessary and why alone representation of concepts are not sufficient. These are important points and their clarification can be given as follows.

According to Kant, understanding is a separate faculty which functions on the representations of intuition. Now any intuitional representation is to be converted in the form of a concept. But here this conversion is not sufficient because it cannot produce any knowledge at all. For the articulation of the intuitional representation in the form of knowledge, it is necessary that a cognition is to be generated. But if there are only concepts as the ingredient of understanding and there is no function of judgments, then mere reorganization of a concept will not produce a judgment. For example, if the concept of a single body or ‘All bodies’ is to be taken in isolation then, there is no cognition about bodies. This has been made clear by Paul Guyer in his article ‘the deduction of categories’ very much explicitly, and Guyer uses the
phrase ‘They must be subsumed under higher ordered representations or functions in order to yield any cognition and this higher order functions are concepts.’ Now mere presence of any concept in understanding does not produce any cognition. Here a question may be arise that what is this cognition and whether it is a representation of third order or something else. For Kant, any epistemological content can be classified only in representations. But for the generation of knowledge, there must be a transcendental apperception with accompanying consciousness of ‘I’. So cognition means act of judgment and therefore in analytic judgments there are no cognitions at all. Therefore they can furnish their function without the presence of first order intuitional representation. The example again may be taken from Kant either, ‘All bodies are extended’ or ‘a + b > a.’ In synthetic judgments there is a generation of cognition and faculty of understanding functions through judgments or more correctly through the synthetic judgments. So the discovery of pure concepts of the understanding is depended on the different logically possible forms of judgments. If these forms are to be shown and corresponding pure concepts are to be designated, then the discovery of pure concepts will be complete. This is Kant’s metaphysical deduction of pure categories which will be taken in the next sub section.

5.3.1 Metaphysical deduction of categories:

Metaphysical deduction of categories is articulated by Kant in second section of chapter-1 of book-1 of transcendental analytic. This metaphysical deduction amounts to investigate the pure form of human understanding as we have mentioned it in the previous sub section, that categories are second ordered representations which exhibite the function of understanding. As understanding reveals its function in judgments, the number of categories is to be determined by the possible number of judgments. According to Kant this classification is to be made with reference to his transcendental logic where, together with the internal validity of judgment, its cognition is also to be taken into account. With this assumption Kant wants to survey all possible types of judgment and in correspondence with each judgment, there is a type of pure form of category. These judgments are to be classified under four types that is, quantity, quality, relation and modality. Under each type Kant makes a further division of three types of judgments. Under the section of quantity there are three types of judgments.

1.) Universal
2.) Particular
3.) Singular

Kant provides the justification of the addition of singular judgments in this list with reference to his transcendental logic.

In classical Aristotelian logic judgments or propositions are classified in universal and particular with reference to their quantity. It is a general characteristic of Aristotelian logic that singular propositions are taken as identical with Universal propositions. For example ‘Socrates is a man’ is a Universal affirmative proposition because the predication of mortality on the subject Socrates is being predicated on the whole of the subject term. So far as formal logic is concern this classification is sufficient but in Kant’s transcendental logic a separate division for singular proposition is required. Kant gives his justification in the following word.19

“The logicians rightly say that in the use of judgments in syllogisms singular judgments can be treated like universal ones. For just because they have no domain at all, their predicate is not merely related to some of what is contained under the concept of the subject while being excluded from another part of it. The predicate therefore holds of that concept without exception, just as if the latter were a generally valid concept with a domain with the predicate applying to the whole of what is signified. If, on the contrary, we compare a singular judgment with a generally valid one, merely as cognition, with respect to quantity, then the former relates to the latter as unity relates to infinity, and is therefore in itself essentially different from the latter. Therefore, if I consider a singular judgment (judicium singular) not only with respect to its internal validity, but also, as cognition in general, with respect to the quantity it has in comparison with other cognitions, then it is surely different from generally valid judgments (judicia communia), and deserves a special place in a complete table of the moments of thinking in general (though obviously not in that logic that is limited only to the use of judgments with respect to each other.”

This position of classical logic is effectively criticized in modern symbolic logic. The point of argument is this that when a Universal or a Particular judgment is asserted the word ‘is’ or copula is indicating the relation of class inclusion. For the case of universal propositions this class inclusion relation is defined and understood as follow.
For universal affirmative proposition this class inclusion is expressed in the form of the relation of subset. For uniformity and by applying Venn diagram techniques it is symbolized as follow.

All S are P.

It means that \( S \supset P \) which is mathematically equivalent to \( S \cap P' = \emptyset \).

In the same way, the class inclusion relationship of a particular affirmative proposition that is some s’ are p’s can be represented as \( S \cap P \neq \emptyset \). But the case of singular proposition is different. According to modern interpretation it does not express any class inclusion relation. So the proposition like ‘Socrates is a man’ can be symbolized as \( x \in M \). These two propositions are logically different but this difference has not been anticipated by Kant. Yet for the explanation of cognition Kant has rightly pointed out that there is a difference between universal and singular proposition.

Second type of classification is made under the title of quality. Here there are three types of qualities in Kant’s transcendental logic.

1.) Affirmative
2.) Negative
3.) Infinite

This third quality of infinite has been added by Kant. Classically quality of infinite is taken as similar to the quality of affirmation. The justification of this distinction has been given by Kant in the following words:

“Likewise, in a transcendental logic, infinite judgments must also be distinguished from affirmative ones, even though in general logic they are rightly included with the latter and do not constitute a special member of classification. General logic abstracts from all content of the predicate (even if it is negative), and considers only whether it is attributed to the subject or opposed to it. Transcendental logic, however, also considers the value or content of the logical affirmation made in a judgment by means of a merely negative predicate, and what sort of gain this yields for the whole of cognition. If I had said of the soul that it is not mortal, then I would at least have avoided an error by means of a negative judgment. Now by means of the proposition “The soul is not mortal” I have certainly made an actual affirmation as far as logical form is concerned, for I have placed the soul within the unlimited domain of undying beings.”
In classical logic, or also in current logic, this distinction is little bit surprising. The three propositions with reference to these three divisions are:

- \( S \) is \( P \)
- \( S \) is not \( P \)
- \( S \) is non \( P \)

Now classical logic includes the proposition ‘\( S \) is non \( P \)’ in the category of affirmative propositions. It definitely differs from ‘\( S \) is not \( P \)’. But in Kant’s transcendental logic, where apart from internal validity, the cognition corresponding to a proposition is also to be taken into account, the affirmative and infinite propositions are also to be taken as belonging to different categories.

From the view point of relations there are three types of propositions according to Kant. Here no edition in the classical list of the division of proposition is made. These three types are.

1.) Categorical
2.) Hypothetical
3.) Disjunctive

Kant makes the analysis of relational propositions, and provides justification in these words:

“All relations of thinking in judgments are those a) of the predicate to the subject, b) on the ground to the consequence, and c) between the cognition that is to be divided and all of the members of the division. In the first kind of judgment only two concepts are considered to be in relation to each other, in the second two judgments and in the third several judgments.”

This classification of judgments with reference to relations seems artificial in preliminary considerations. Moreover the ground of this division which has been given by Kant in above cited observation is quite obscure because in categorical proposition the relation is to be stated between concepts. In hypothetical proposition it is between judgments and in disjunctive propositions it is also between or among judgments. The example which is given by Kant of hypothetical proposition is ‘If there is perfect justice then obstinate evil will be punished.’ According to Kant this proposition contains two propositions

‘There is a perfect justice’ and ‘obstinate evil is punished.’

So as this hypothetical or conditional proposition expresses the relation between two propositions yet as an act of judgment it generates a unique singular cognition. What
is surprising is this that for disjunctive proposition Kant allows the possibility of more than two disjunctive propositions. Here Kant gives the example, ‘The world exists either through blind chance or through inner necessity or through an external cause.” Kant claims that this single disjunctive proposition contains three, or may contain even more than three propositions as its component but it generates a unique singular cognition.

As there are two distinct forms of judgments, corresponding cognition must be different. But it is surprising that a certain type of logical equivalence has not been noticed by Kant. This equivalence may be expressed as follows.

If we take Kant’s example of disjunctive proposition then it can be symbolized in the form of the following proposition.

\[(A \lor B) \lor C\]

By the application of the rule of implication on this proposition we can easily get a logically equivalent proposition as follows.

\[\sim [(\sim A \Rightarrow B)] \Rightarrow C\]

Now this is a hypothetical proposition or more correctly the negation of a hypothetical proposition. Yet according to modern logic, and according to classical logic up to a certain extent, it is logically equivalent to the proposition \(A \lor B \lor C\). Yet in Kant’s transcendental logic, they amount to different cognitions.

The last classification of Kant is that of modal propositions. It may seems surprising that Kant does not limit this discourse of his transcendental logic to classical two-valued logic but includes modal propositions in his framework which may be taken as a sign of modal propositional logic. The classification according to modality has been made by Kant as:

1.) Problematic
2.) Assertoric
3.) Apodictic

These propositions are explained by Kant as:

1.) “Problematic judgments are those in which are regards the assertion or denial as merely possible (arbitrary).

   And

2.) Assertoric judgments are those in which it is considered actual (true)
3.) Apodictic judgments are those in which it is seen as necessary."
These modal judgments can be explained and justified in the following way.

In this classification, when we come to the further explication of this type of judgments, the situation does not become very much clear in Kant’s explanation. First of all, this classification falls in the category of modality for judgments. If we look this situation from the point of view which modern modal logic holds, Kant’s classification seems entirely artificial. In modern modal logic the concept of modality is closely related with the concept of possible world. Here the contingency any necessity is defined by

◊ and □

modal operators. They may correspond to Kant’s problematic and apodictic propositions but this comparison will be far stretching.

When we come to the further examples for the clarification of this classification we find the example in the form

“The world exists through blind chance”

With reference to the central theme of the present research work this example is creating a surprisingly strange anomaly in Kant’s position of critique of pure reason. In transcendental analytic and transcendental dialectic. As we shall see later in this work, Kant himself describes the system of cosmological ideas as an effective example of his theory of transcendental illusion. But here the problematic propositions under the category of modality represents a genuine epistemological proposition which corresponds to the category of ‘possibility-impossibility’ of understanding. So for a consistent interpretation of Kant’s text, the cosmological propositions do not fall in the category of modality. Now leaving this matter temporary aside, we see Kant’s metaphysical deduction of categories on the ground of the classification of propositions in his transcendental logic.

From these classifications of propositions in Kant’s transcendental logic, his list of categories is deduced on the ground of logic and in a particular metaphysical reference. When understanding functions as a power of mind in a particular epistemological reference then, according to Kant’s claim, there must be some pure concepts which can apply to objects of intuition, in general, apriori. What is claimed by Kant further in this direction is the discovery of the totality of these concepts Kant states his view in the following words:
“...as there were logical functions of all possible judgments in the previous table: for the understanding is completely exhausted and its capacity entirely measured by these functions. Following Aristotle we will call these concepts categories, for our aim is basically identical with his although very distant from it in execution.”

As Kant makes it clear, no pure concept of understanding is left in this enlistment. Moreover, Kant clearly states that the term ‘category’ is use somehow in a weaker sense, following the example of Aristotle. Now Aristotle has used this word in his well known work ‘Metaphysics’ on ontological grounds. Aristotelian categories apply to all that which exist. In the same way, Kant claims that his twelve categories definitely apply to all that which can be known. And these categories are discovered by Kant on the ground of his transcendental logic.

Kant provides his list of categories in the following way.\(^\text{30}\)

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Table of categories

1
Of quantity
   Unity
   Plurality
   Totality

2
Of quality
   Reality
   Negation
   Limitation

3
Of relation
   Of inherence and subsistence
   (substantia et accidens)
   Of causality and dependence
   (cause and effect)
   Of community (reciprocity between agent and patient)

4
Of modality
   Possibility-impossibility
   Existence-non-existence
   Necessity-contingency”
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With this list Kant supposes that his metaphysical deduction of categories is complete. The logic is simple. Understanding functions in the form of judgments. So
if we can have a completely exhaustive list of judgments then we can invariably derive the pure form of understanding which are named as Categories according to Kant. Understandably in Kantian terminology this is metaphysical deduction of categories. But if this is to be evaluated from a modern point of view then this entire enterprise is a subject of apparent short comings.

Formal logic does not provide a complete list of all possible judgments. So far as Kant’s consideration in this reference is concerned his logic deals primarily with propositional logic and at the most first order predicate logic.31 There is no provision for the inclusion of the propositions of higher order logic in which predicate variables are also to be quantified.32 So it can be said, with reference to the present research work, that Kant’s theory of transcendental illusion is based on the concepts of syllogisms and the constituents of syllogism are propositions or judgments, the entire concept of judgment is not significantly clear. Yet with reference to the status of pure logic in the age of Kant it is necessary to look in the way in which these categories are obtaining their factual counterpart. This is the main topic of Kant’s critique of pure reason which is entitled as ‘the transcendental deduction of categories’ which is dealt in the next sub section.

5.3.2 Transcendental deduction of categories:

The transcendental deduction of categories is the most important and at the same time most obscure portion of ‘critique of pure reason.’ This has been acknowledged by Kant himself. In the preface of his book ‘The metaphysical foundation of natural sciences’ which was published in 1786 i.e., between the publication of first and second edition of critique which were published in 1781 and 1787 respectively. There Kant says that the portion of Critique which should be most clear has remain most obscure.33 Therefore in the second edition of critique Kant rewrote the entire section of the transcendental deduction of categories. Yet, even after the publication of the second edition, the portion remained as difficult as it was before. The scholars and critiques of Kant are in agreement with this assertion that the transcendental deduction is the most difficult portion of critique. For example, H. J. Paton observes that it is easier to cross the great desert of Gobi then to get a control over the details of Kant’s transcendental deduction of categories.34

In the light of these observation, if we have to proceed further, a simple concentration on Kant’s own work reveals the seriousness of the problem of
interpretation of his deduction. In the both editions of the ‘critique’ the details of the treatment of this transcendental deduction are entirely different and yet there is no clue regarding the achievement of this deduction. The apparent goal is clear. How to apply a pure form of category to the content of experience which can provide the required apodictic certainty to certain general principles of experience, or, general laws of nature. In other words, in this deduction there is something which can be called as a part of the solution of Kant’s central problem. ‘How are synthetic judgment apriori possible”? In this direction Kant proceeds further in the section of the transcendental analytic chapter-2. In both editions, there is different type of terminology and the procedure of deduction is also different. Therefore it is necessary to have a closer look into the actual composition of text in ‘transcendental deduction’. We start with the first edition.

In the first edition, the entire deduction has been provided from A84-A130. This chapter contains three sections among which first section deals with the principles of a transcendental deduction in general. In second section apriori grounds for the possibility of experience are discussed. And in third section the relation of understanding to objects is considered. Naturally the last two sections are actually dealing with transcendental deduction.

In the second edition, this portion is completely rewritten. The transcendental deduction is stated from B129 to B169. This section contains two further sections in which the preliminary section deals with the possibility of a combination in general while in second section, the actual deduction of the pure concepts of understanding has been done. First we shall see the transcendental deduction of categories as it is given in the first edition.

It is necessary to make it clear that what is the actual meaning of the term ‘deduction”? and what is to be meant by the term ‘transcendental”? in the explanation of the first question it will be quite appropriate to have a closer look into Kant’s own explanation which he states in his following oft-quoted observation. “Jurists, when they speak of entitlements and claims, distinguish in a legal matter between the questions about what is lawful (quid juris) and that which concerns the fact (quid facti), and since they demand proof of both, they call the first, that which is to establish the entitlement or the legal claim, the deduction. We make use of a multitude of empirical concepts without objection from any one, and take ourselves to be justified in granting them a sense and a supposed signification even without any
deduction, because we always have experience ready at hand to prove their objective reality. But there are also concepts that have been usurped, such as fortune and fate, which circulate with almost universal indulgence, but that are occasionally called upon to establish their claim by the question quid juris, and the there is not a little embarrassment about their deduction because one can adduce no clear legal ground for an entitlement to their use either from experience or from reason.”

Kant is here distinguishing between two types of questions. One is regarding what is lawful? And second is regarding what is about fact? In the practice of law a proof of both is demanded. When such proof is provided, the legal claim has been ascertained as deduced or deduction has been completed. It is also true that if only the questions of quid juris is justified only on that ground, no legal judgment can be passed because the questions concerning quid facti have remained open. Here Kant is making a very much important and significant claim. The question is here about the relationship between formal consistency and factual correspondce. If there is a structure of knowledge, either in the form of concepts or principles, which is formally consistent, it cannot be a subject of Kant’s deduction. Such type of formal consistency is possible only for that structure which contains only analytic judgments. But for Kant, the chief discourse is epistemology, and in accordance with that he is quite sure that there is no structural knowledge which can be justified only in the realm of quid facti for Kant’s transcendental deduction of categories in any justifiable manner. It is also remarkable to know that this view of Kant is not adhered in contemporary analytic philosophy or philosophy of mathematics. There are many structures which are formally consistent and so, in this terminology of Kant, the questions regarding them are of the nature of quid juris but so far as pure analytic knowledge is concerned the questions about quid facti generally do not arise about them. The example may be taken of any non-Euclidian geometry or any formal algebraic structure whose questions are entirely legitimate in the realm of quid juris and does not demand a correspondence with quid facti. But according to Kant without a combination of both no actual cognitive knowledge can be generated.38

For Kant any cognitive knowledge must have to do something with transcendental aesthetics. That means that if there is a judgment which is cognitive in nature and if it contains certain concepts, then these concepts must have some factual counterpart whose deduction or justification can be supplied through experience. But
if certain concepts are apriori then no such empirical employment of concept is possible. Kant explains this difference in the following words.39 “Among the many concepts, however, that constitute the very mixed fabric of human cognition, there are some that are also destined for pure use a priori (completely independently of all experience), and these always require a deduction of their entitlement, since proofs from experience are not sufficient for the lawfulness of such a use, and yet one must know how these concepts can be related to objects that they do not derive from any experience. I therefore call the explanation of the way in which concepts can relate to objects a priori their transcendental deduction, and distinguish this from the empirical deduction which shows how a concept is acquired through experience and reflection on it, and therefore concerns not the lawfulness but the fact from which the possession has arisen.”

So according to Kant, there are two types of concepts which constitutes the fabric of human understanding. In the first type of concept there are empirical concept which are infinite in number, and only finite of them can actually enter the human understanding. The examples of ‘man’ and ‘table’ may be given. These concepts are formed by the process of abstraction and if the process of formation together with the indication of the corresponding object have been stated, then these concepts have been justified or explained empirically. This can be said the empirical deduction in the language of Kant. This type of deduction is straightforward according to Kant and does not require much philosophical attention. Actually this belongs to natural sciences rather than to philosophy. On the other hand, according to Kant there are certain concepts which are pure that means apriori, and they are not derived or acquired through experience. In this situation the central question, which is before Kant, is this that how such concepts can be related or applied to the objects of experience. The way in which this can be done is called transcendental deduction by Kant.

For a comprehensive and satisfactory solution to this problem, Kant introduces his Copernican revolution in the field of epistemology. We have seen in this work that the most generic term in Kantian epistemology is ‘Representation.’ Representation is a power of mind and due to this power the mind can acquire any cognitive knowledge. But for cognition there must be an object for a particular representation. At this stage Kant asks a fundamental question about the relationship between Representation and
its object. In the section of transcendental deduction of categories Kant re-establishes his epistemological postulate of Copernican revolution in the following words.\textsuperscript{40} “There are only two possible cases in which synthetic representation and its objects can come together, necessarily relate to each other, and, as it were, meet each other: Either if the object alone makes the representation possible, or if the representation alone makes the object possible. If it is the first, then this relation is only empirical, and the representation is never possible a priori. And this is the case with appearance in respect of that in it which belongs to sensation. But if it is the second, then since representation in itself (for we are not here talking about its causality by means of the will) does not produce its object as far as its existence is concerned, the representation is still determinant of the object apriori if it is possible through it alone to cognize something as an object.”

In this observation Kant has effectively re-established his Copernican revolution. The question is about the possibility of either a representation or an object. Here it should be made clear that Kant is not pursuing the ontological issues about the nature of mind as a knower or any external object as known. The discourse is completely limited to epistemology and the term ‘possibility’ solely applies either to representation or to object as epistemological possibility. If the possibility of representation is to be taken as dependent on object or if it is the object which makes representation possible then this is the sole thesis of empiricism and with the acceptance of this thesis there is no provision for the possibility of any apriori ground in faculty of understanding. But if it is representation which alone can make the object possible then the basic limitations of empiricism can be avoided. But here is a serious point of consideration that if objects are being made or produced by representation then will it not be a simple version of Berkeley’s subjective idealism? Where the objects of knowledge do not have their separate existence apart from there cognitive state of some minds. Here also Kant provides a further explanation in which he states that when, according to his Copernican revolution, it is claimed that they are representations which make objects possible; then, here the possibility of such objects does not mean the possibility of their existence as such. Representation does not bring its object into existence either out of nothing or something. The only epistemological role of a representation is to construction the object in the form of a cognizable object. It is also to be made clear at this point that what these objects or minds which are cognizing this objects, are actually are, are ontological questions which are irrelevant
to Kantian position in this particular reference. Here Kant wants to save his system from the charge of subjective idealism and so he states clearly that when representation makes an object is possible? Then possibility means only that of cognition and not of existence.

With this Copernican revolution Kant thinks that it is not only possible but necessary to have some apriori formal conditions without which there is no possibility of empirical knowledge also. In the first edition of critique Kant outlines three basic sources of the faculty of knowledge which any cognitive mind must have for the generation of knowledge. These sources are,

1. Sense
2. Imagination
3. Apperception

These three are origin a sources of the soul and these three faculties have three subsequent functions which are grounded in them. These functions are

1. Synopsis
2. Synthesis
3. Unity

In this paragraph Kant mentions that all these three faculties and their functions do have some type of apriori grounding in human mind so far as the faculty of sense is concerned Kant mentions that it has been taken and discussed in the first part of transcendental aesthetics. The point is this that Kant wants to established a type of singular unity in the cognitive activities of human mind. At the same time he does not want to accept the basic postulate of rationalism according to which human mind inherently possesses the capacity of knowledge which can function without any help of experience. But here Kant does not also accept the entire philosophical framework of empiricism. So in the second edition of ‘critique of pure reason’ where the previously quoted paragraph was omitted and replaced by three subsequent paragraphs. In these three paragraphs first paragraph, contains some important observation of Kant on empiricism. Kant particularly discusses the position of Locke and Hume in the first paragraph. The empiricistic position of Locke starts with the belief that there are no inherently given innate ideas and yet mind has a power of reflection through which it can go beyond all possible experiences. And this transcendence of experience is the acknowledgment of primary qualities and unknown
substance in the objectively stated outer world. Kant brings out the inconsistency of Locke in the following words.43

“The famous Locke, from neglect of this consideration, and because he encountered pure concepts of the understanding in experience, also derived them from this experience, and thus proceeded. So inconsistently that he thereby dared to make attempts at cognitions that go far beyond the boundary of all experience.”

Kant brings out the element of inconsistency in Locke as it is clear from his above mentioned observation. If some concepts are pure then they cannot be derived from experience. So the derivation from experience and purity of concepts are contradictory assertions and so they amount to certain type of inconsistency. No apriori concept can be derived from experience and this is recognized by David Hume in the subsequent development of empiricistic tradition. Kant points out the position of Hume together with its epistemological limitations in the following words.44

“David Hume recognized that in order to be able to do the latter it is necessary that these concepts would have to have their origin a priori. But since he could not explain at all how it is possible for the understanding to think of concepts that in themselves are not combined in the understanding as still necessarily combined in the object, and it never occurred to him that perhaps the understanding itself, by means of these concepts, could be the originator of the experience in which its objects are encountered, he thus, driven by necessity, derived them from experience (namely from a subjective necessity arisen from frequent association in experience, which is subsequently falsely held to be objective, i.e. custom), however he subsequently proceeded quite consistently in declaring it to be impossible to go beyond the boundary of experience with these concepts and the principles that they occasion.”

Kant justifies Hume’s position that for any transcendence of all possible experience it is necessary that the grounding conditions of this transcendence must be taken a completely different stand regarding the employment or correspondence of this apriori conditions. According to Hume, what is given apriori in mind is a piece of analytic knowledge and it does not created any cognition in mind. Here Kant differs from Hume completely. Any knowledge must have a corresponding representative state of mind. If certain concepts are apriori and they do not rely and cannot be derived from experience, then it does not mean that they cannot be applied to any experience at all. So what is “relation of ideas” according to Hume is not simply a group of analytic concepts or proposition according to Kant the example which is
given by Kant for this type of knowledge is that of mathematics and general natural science.\textsuperscript{45} And so Kant says that Hume’s position ‘Is therefore refuted by fact’. This according to Kant is an inconsistent position. For the position of Locke Kant uses the world ‘enthusiasm’ and for Hume the generally accepted word ‘skepticism’ is there.\textsuperscript{46}

Kant’s criticism of Hume has always remained a subject of further criticism. If something is a priori there in the mind and if its presence is somehow an epistemological constituent of mind then it is very much difficult to accept that for this type of knowledge there are no representations at all. But the matter is not also simple for Kant. Whatever has been discussed hither to from Kant deals mainly with synthetic propositions. But what can be the case of the knowledge of analytic propositions? Suppose one knows apriori that, taking Kant’s own examples, ‘all bodies are extended.’ Or ‘a + b > a’ are analytic propositions. For the comprehension of these propositions, it is not necessary to have any help from senses, but is it not true that these propositions or judgments must have some type of epistemologically oriented cognitive operations in mind? Or in Kant’s own terminology, is there not any corresponding representation of mind corresponding to this type of judgments? If the answers to such questions are negative, then it is very much difficult to see how the role and function of the transcendental unity of apperception, which is always accompanied with the consciousness of ‘I’. This will be seen later in the present section. But at present it can be said that the ultimate line of demarcation between apriori and aposteriori creates some difficulties for the final establishment of Kant’s epistemology. At present it can be said that for the transcendental deduction of categories it is necessary that these categories must have an apriori origin and yet universally applicable empiricistic employment in the field of epistemology.

For the articulation of this aim Kant once again refutes another inconsistency of empiricist philosophy. Kant’s main thesis is this that intuition always supplies and manifold and the ingredients of this manifold must be synthesized in a cognitive or synthetic unity. Kant states his position in the following words.\textsuperscript{47}

“If every individual representation were entirely foreign to the other, as it were isolated and separated from its then there would never arise anything like cognition. Which is a whole compared and connected representations. If therefore I ascribe a synopsis to sense, because it contains a manifold in its intuition, a synthesis must always correspond to this, and receptivity can make cognitions possible only if combined with spontaneity.”

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In this observation Kant wants to answer Hume together with entire empirisistic tradition. If there is no transcendental unity in consciousness and if every representation, cognition, or sensation is totally unrelated with other sensations and cognitions of that manifold then how it is possible that they all are to be counted as the subject of the same consciousness. An example may be given for the further explanation of this fact.

Suppose we have a sentence which contains twelve different words. Suppose each word is separately written on different peace of papers and these papers along with these different twelve words are distributed among twelve different people. Now in this case, whatever may be the form of that sentence, its corresponding judgment cannot create any representation or cognition in any consciousness. So if the ingredient of a manifold are unrelated and not submitted to a synthetic unity of consciousness no cognition or representation can be produced. In this way two fundamental postulates of Kant’s deduction have been arrived.

1.) All representations can be classified in a twofold nature i.e. sensation and understanding.
2.) There is a fundamental and transcendental synthetic unity of apperception in the content of consciousness.

These two postulates go in the direct contradistinction to both epistemological traditions before Kant. It is a remarkable thinks that in neither tradition the first postulate is accepted. According to Hume there is only one epistemic category which belongs to knower and that is sensations. There is no fundamental categorical difference between sensation and thought according to Hume. On the other side according to rationalistic tradition and particularly according to Leibnitz and Wolff, only thinking process or thought is the fundamental characteristic of knower and there is no separate and distinct existence of sensations. So according to rationalism sensations are dim thoughts and according to empiricism thoughts are dim sensations. But here Kant makes a fundamental change and states that there are two types of categorically different representations and with this postulates a priori formal condition of knowledge can acquire objective validity.

The second postulate goes in the direct contradiction to Hume. According to Hume there is no underline fundamental synthetic unity which can play the role of synthesis. There are only perceptions and what appears as an apperception is also an another type of perception. According to Kant this is a fundamental mistake and so he
empathetically states that without apperception, there is no epistemic value of any percept in the framework of cognitive knowledge.

With these postulates, in the first edition of critique, Kant empathetically proceed by the process of subjective synthesis. This process is often sated as subjective transcendental deduction of pure understanding. These three types of fundamental synthesis can be stated as follows.

2. Synthesis of reproduction in the imagination.

These three types of fundamental synthesis are taken by Kant as apriori epistemic conditions from the side of knowledge. For the explanation of their role in subjective transcendental deduction, it is necessary to clarify each of them successively.

The process of the synthesis of apprehension in the intuition is stated by Kant as follows.39

“Wherever our representations may arise, whether through the influence of external things or as the effect of inner causes, whether they have originated apriori or empirically as appearances as modifications of the mind they nevertheless belong to inner sense, and as such all of our cognitions are in the end subjected to the formal condition of inner sense, namely time, as that in which they must all be ordered, connected, and brought into relations. This is a general remark on which one must ground everything that follows.”

In this observation Kant makes a difference between space and time as the form of pure intuition. The objects of knowledge with all their diversification are to be considered as being put before self through space but there must be a schema which can provide a bridge between understanding and sensation. Time is taken by Kant in the form of this schema. It is called inner sense and without any type of order and connection among different sensations there cannot be any corresponding representation before transcendental unity of apperception. Here Kant also makes further claim that a particular empirical representation, and they may be in the form of successive impressions must be thought as contained in one moment. Without this temporal unity of moment there can be no distinguished representation.50

From a superficial point of view it appears that what is being represented by Kant in this reference is nothing but a psycho epistemic process of imparting a judgment with particular cognition. But this is a characteristic of Kant’s
transcendental deduction that he demands this synthesis of apprehension as an apriori character of mind. Kant goes up to that extent that without it even the representation of space and time are impossible. Kant state this in the following words.51

“Now this synthesis of apprehension must also be of apperception must also be exercised a priori, i.e., in regard to representations that are not empirical. For without it we could have apriori neither the representations of space nor of time, since these can be generated only through the synthesis of the manifold that sensibility in its original receptivity provides. We therefore have a pure synthesis of apprehension.”

So for Kant this synthesis of apprehension must also be exercised by mind in a apriori fashion. Because if the process of synthesis of apprehension in intuition is empirical then again this process itself becomes another additional empirical data and in that case it is impossible to have even apriori representations of space and time. Because every empirical intuition is to be brought before inner sense and without this synoptic function no knowledge is ever to be considered as generated. And so by the process of the synthesis of apprehension in the intuition Kant attempts to prove that the synopsis of manifold provided apriori through senses, is the fundamental formal condition for the generation of the subjective validity of any cognition.

With these, it may be thought from the side of empiricism that the task of the presentation of the subjective condition of knowledge is over. After all what is left in the process of the generation of knowledge? There are two fundamental sources. These sources are intuition and understanding. Understanding through inner sense exercises its power of synthesis of apprehension in the intuition apriori and this synthesized apprehension results in knowledge. But for Kant, the matter is not over. Because in this case the question remains open that whose knowledge is this? And so for acquiring the state of apperceptional knowledge it is necessary to have another type of synthesis and that is synthesis of reproduction in the imagination.

Here the term imagination is not to be understood as a psychological process of image formation. Whatever matter may be supplied as apprehended in the intuition, it must be brought before epistemological imagination which can play the role of the process which can generate a unity of apperception. This is stated by Kant in the following words.52

“There must therefore be something that itself makes possible this reproduction of the appearances by being the apriori ground of a necessary synthetic unity of them. One
soon comes upon this if one recalls that appearances are not things in themselves, but rather the mere play of our representations, which in mere play of our representations, which in the end come down to determinations of the inner sense. Now if we can demonstrate that even our purest apriori intuitions provide no cognition except insofar as they contain the sort of combination of the manifold that makes possible a thorough going synthesis of reproduction, then this synthesis of the imagination would be grounded even prior to all experience on a priori principles, and one must assume a pure transcendental synthesis of this power, which grounds even the possibility of all experience (as that which the reproducibility of the appearances necessarily presupposes).”

Before considering the significance of this second stage synthesis in the course of the subjective deduction of transcendental categories it is necessary to have some general remarks regarding Kant’s view on cognitive mind and self.

Historically speaking Kant had three modal of self before him for the nature of science. First modal was in the form of Cartesian substantial self whose characteristic or essence lies in thoughts. Second modal comes from Locke’s view of self whose essence is ideas. And third view is Hume’s bundle theory of self which states that there is no permanent substantial self. Among these three none could have been accepted by Kant. Yet Kant has to state a view of self which can provide the required synthetic unity to the all contents of consciousness. Yet Kant does not believe in a permanent substantial self nor does he accept any trance specio-temporal existence of self. His views regarding these matters are expressed in his recently published lectures on metaphysics where Kant states that

“But we can also infer from the state after death, which we will prove, to the state of soul before birth; for from the proofs that we will give for the survival of the soul after death, it appears to follow that before birth we were in a pure, spiritual life: and that through birth the soul, so to speak, came into a dungeon, into a cave, which hinders it in its spiritual life. But here the question is whether the soul in its spiritual life before birth had a full use of its powers and faculties; whether it possessed all the cognitions, the experiences of the world, or whether it acquired them for the first time through the body? We answer: from the fact that the soul was in a pure, spiritual life before birth, it still does not at all follow that it had in it such a full use of its powers and faculties, and just the same cognitions of the world (which it acquired only after birth): but rather it follows that the soul was in a spiritual life, had a spiritual power of
life, already possessed all abilities and faculties; but such that these abilities
developed only through the body, and that it acquired all the cognitions that it has of
the world only through the body, and thus had to prepare itself through the body for
future survival. The state of the soul before birth was thus without consciousness of
the world and itself.”

This position of Kant appears as correct here to Patricia-Kitcher in her, ‘Kant
philosophy of the cognitive mind’ as she observes,\(^54\)

“It is interesting to note that if Kant’s position is correct here, then the situation that
Descartes is envisioned at the end of the Meditations, where the protagonist knows
nothing about the world around him, but only his own existence as a thinking self,
would be impossible.”

So it becomes sufficiently clear that, while discussing the status of self, Kant
does not adhere any type of substantiality to self. In this light, it is necessary to see
what does Kant actually mean by the third, stage of synthesis. And this synthesis is
the “synthesis of recognition in a concept.”

This stage of synthesis provides the need of the fundamental postulate of
Kant’s transcendental deduction. This unity in a manifold of intuition must be
imparted by consciousness as Kant points out,\(^55\)

“The manifold of the representation would never, therefore, form a whole since it
would lack the unity which only consciousness can impart to it. If in counting, I forget
that the units, which now never before me, have been added to one another in
succession I should never know that a total is being produced through this successive
addition of unit to unit, and so would remain ignorant of the member. For the concept
of number is nothing but the consciousness of this unity of synthesis.”

Here it becomes clear that the unity in the content of experience can be
imparted only through the synthesis which can be provided only by the synthetic unity
of apperception.\(^56\) But this does not mean that this unity is entirely subjective. Any
representation must be a representation of something. This objectivity is termed by,
Kant as objectivity in general = x and the concept of this unity, according to Kant is \(^57\)

\[
\text{Representation of object} = x
\]

This transcendental objectivity of transcendental object = x makes the
possibility of deduction of categories. It would be important to look the transcendental
deduction of categories, following Robert Paul Wolff in a formal manner.
The question is this that what is to be deduced from what? No doubt for Kant, the conclusion of the supposed deduction is the validity of the synthetic-apriori knowledge. For this, conclusion there must be some premises. According to Wolff these premises are:°

i. The unity of consciousness, and
ii. The double nature of representation.

These are two fundamental premises from which the possession of the valid synthetic a priori knowledge can be deduced. Wolff presents four different versions of this deduction. For the sake of simplicity and present reference it is sufficient to see the First version, which indicate the justifiability of a Transcendental object = x

For categories The formal deduction is presented by Wolff as

“To prove : I possess valid synthetic judgments a priori”

Proof:

1. All the contents of my consciousness are bound up in a unity (premise)
2. The content of my consciousness have the double nature of representations. (premise)
3. The only way to unify a diversity of mental contents is by referring them qua representation to an object as ground of their unity. [ premises 1,2 and analysis of unity of consciousness and concept of an object, above]
4. If all the contents of my consciousness are bound up in a unity. Then they must all be referred well representation to a single object = x as the ground of their unity. [3, and analysis of object =x, above]
   Or alternatively
5. If all the content of consciousness are bound up in a unity, then the concept of an object = x applies to all the content of my consciousness. [analysis of concept of transcendental object = x and 4].
6. Representations have objective reality, conferred upon them, and thereby yield knowledge by having applied to them the pure concept of an object in general = x which they are thought as representing[ analysis of knowledge, above]
   Or alternatively.
7. If the concept of an object = x applies to all the content of my consciousness, then they yield knowledge in the form of judgments asserting a necessary connection among representation [6, by conversion].
8. By 5, 7, 1 and the rules of logic, we get,

The content of my consciousness yield knowledge in the form of, judgments asserting a necessary connection among representations.

[“If P then Q, and if Q then R and P implies R”.

∴ “I possess valid synthetic judgment apriori” Q E D”

This transcendental deduction of categories, which ends in the form of the possibility of synthetic-apriori judgment, rests of two basic assumptions. The first assumption is the unity of consciousness. Now what is the nature of the unity of consciousness? Kant uses the word ‘transcendental apperception’ for this unity. It is also important to note that in the both editions of the critique, the role of this transcendental apperception is fundamental and clear. In the first edition, the nature of this representation supporting transcendental conditions is stated by Kant as 60 “On my principle it is easily explicable. All possible appearances, as representations, belong to the totality of a possible self consciousness. But as self-consciousness is a transcendental representation numerical identity is inseparable from it, and is a priori certain. For nothing can come to our knowledge save in terms of this original apperception.”

The role of transcendental apperception is clear and this can be seen in the treatment in the second edition of the critique as: 61 “All possible perception is thus dependent upon synthesis of apprehension and transcendental synthesis and therefore upon categories…To obtain any knowledge whatsoever of these special laws, we must resort to experience but it is the apriori laws that alone can instruct in regard to experience in general, and as it is that can be known as an object of experience.”

This ‘reference’ to the object of experience, though it may be ‘transcendental object = x’ in general has something to do with ‘the principles of analogy’ according to Wolffff. In fact, as he observes in the beginning of his article, in the stage I of his deduction, that ‘the final version…only appears in the second analogy”62 as a causal maxim. This is going to be evaluated in the next section.

5.4 Kant’s view on causality- a critical evaluation:

As it has already been noticed in the previous section of this chapter that according to critics like, Robert Paul Wolffff, the culmination of transcendental
deduction reaches in its final version in the section of second analogy. This view is also supported by many other scholars. For example Auther Melnik in his ‘Kant’s proofs of substance and causation’ makes an observation that there is close connection between transcendental deduction of categories and the proofs which are provided by Kant in the second analogy where he deals with the problem of causation. It is also important to note that the section of analogy is also an example of the so called patch work theory about the construction of the text of critique of pure reason according to N.K.Smith. Leaving the status of the ‘patch work’ theory aside in the reference of the present research work, it is important to note that this section which is closely connected to the transcendental deduction of categories, provides the Kant’s attempt of his answer to Hume. So it is necessary to examine Kant’s position in this section with reference to the main theme of present research work. Before taking the actual arguments of critique of pure reason in the second analogy of experience, it is necessity to observe certain general observations about the status of causal categories and the possible situation which occurs due to its violation. Suppose one states that the event A occurred without a cause. Or the fact B vanished without a trace then what is the logical status of these type of propositions? Are they false or nonsense? W. H. Walsh interestingly describes this situation in his article ‘categories’ in the following way.

“Let me begin by giving a couple of examples.

1. I am being driven by a friend in a motor-car, when without warning, the engine stops and the car comes to a standstill. I ask my friend what has happened. He replies that the car has stopped for no reason at all. I laugh politely at what I take to be his joke and what for an explanation or for some activity on my friend’s part to discover what has gone wrong; instead, he remains in his seat and neither says nor does anything more. Trying not to appear impolite, I presently ask my friend whether he knows much about motor-cars, the implication being that his failure to look for the cause of the breaks down must be explained by his just not knowledge how to set about the job. He takes my point at once and tells me that it is not a question of knowledge or ignorance; there just was no reason for the stoppage. Puzzled, I ask him whether he means he means that it was a miracle, brought about by the intervention of what 18th century writers called a ‘particular providence.’ Being philosophically sophisticated, he replies that to explain something as being due to an act of God is to give a reason, though not a natural reason, whereas what he said was that there was no
reason for what occurred. At this point I lose my temper and tell him not to talk nonsense, for (I say) “Things just don’t happen for no reason at all.”

The second example which is given by Wash is collarstud which is supposed to be vanish without trace. The point which has been emphasized by Walsh is this that ‘Occurring without a cause or passing cleanly out of existence is a situation which provides a particular type of nonsense. Which type of nonsense is this? Is this a formal nonsense? Walsh empathetically denied that it is. This type of expressions do not violate the accepted rules of the syntax of that given language in which they occur, neither they are nonsensical expressions according to the criterion of verification by logical positivists. It is also true that these propositions are not representing anything of a type of factually false propositions. In the view of Walsh they are representing the type of a category mistake and this category mistake is definitely different from the category mistakes of Ryle. So the problem of causation is a deep rooted problem and as we have observed in the philosophy of Kant it is one of the most significant portion where Kant provides his possible answer to Hume.

In ‘critique of pure reason’ the statement of second analogy is stated in both editions in the following way.

In the first edition,

‘Principle of production

Everything that happens, that is, begins to be, presupposes something upon which it follows according to a rule.’

In the second edition,

‘All alterations take place in conformity with the law of the connection of cause and effect’

This second analogy Kant provides a historically important proof for his possible refutation of Hume in the beginning of his commentary. On this analogy Kemp Smith meaningfully observes that “It is of special historical importance as being Kant’s answer to Hume’s denial of the validity of the causal principle. Hume had maintained that we can never be conscious of anything but mere succession. Kant in reply seeks to prove that consciousness of successions is only possible through consciousness of a necessity that determines the order of the successive events.”

N. K. Smith is perfectly right in his observation that according to Kant, there must be a fundamental difference between the perception of the successive state of
consciousness and a unifying ground which is perceived by it as the causal necessity which is behind that successive sequence. Kant himself clarifies his position regarding this distinction in the following word:

“I perceive that appearances follow one another, that is, that there is a state of things at one time the opposite of which was in the preceding time. Thus I am really connecting two perceptions in time. Now connection is not the work of mere sense and intuition, but is here the product of a synthetic faculty of imagination, which determines inner sense in respect of the time-relation.”

Kant’s observation regarding the inevitability of the necessary causal connection is quite apparent, but it is also to be noted that according to Kant causality or causal principle is not the characteristic of things-in-themselves or noumena. Actually it is a category of pure understanding which comes parallel to the classification of categories in the title of ‘quality’, and that quality is also negative. The relation between cause and effect, according to Kant is stated by hypothetical judgment. So in the opinion of Kant the proposition of the form \( p \Rightarrow q \) states the category of causality and dependence but that does not apply to thing-in-itself. Moreover if we look, at the normal linguistic use of if..then, then implication does not always functions as causal implication. So from hypothetical judgment, it is not appropriate to derive the relation of causality or interpret the propositions of implication merely as causal proposition. But here the question is the inevitable necessity of the application of the principle of causality for successive events of externally observed representation. If causal principle does not apply to thing-in-themselves, then why it is so that Kant is worried for the refutation of Hume? If space and time are not transcendentally real and causality is simply a category which is to be applied only to the field of experience then how does Kant’s system of epistemology will differ from the epistemological position of subjective idealism? In other words how Kant differ from Berkeley? According to Kant there must be some epistemological validity of the principle of causality that provided some justification of this thesis of the refutation of idealism. So it is necessary to have a closer look to Kant’s famous section of the refutation of idealism.

The refutation of idealism is a small section which follows the postulate of empirical thought in general. Where Kant differentiate the logical meaning of the term possible, actual and necessary in the following words.
The postulates of empirical thought in general

1. That which agrees with the formal conditions of experience, that is, with the conditions of intuition and of concepts, is possible.
2. That which is bound up with the material conditions of experience, that is, with sensation, is actual.
3. That which in its conception with the actual is determined in accordance with universal conditions of experience, is (that is, exists as) necessary.

The definition of actual and possible relies on the formal and material conditions of experience. It is interesting and important to note that apart from formal and material, which are the universal conditions of experience, according to which the actual is to be determined. Here the term actuality has to do something with non-subjective content of experience. That is a fundamental epistemological question is being raised by Kant for the subjective determination of an empirical self and the necessary objective content of that experience. But again the question is this can there be any proof of the objective content of external objects which can be obtained from the side of empirically determined consciousness. In other word, experience provides a proof of an empirical consciousness. But according to Kant this empirically determined consciousness also provides a proof of external objects which lies outside the self and in space. This is the central point of thought in Kant’s refutation of idealism. What actually Kant wants to prove is stated in the thesis of this refutations.

Thesis

The mere, but empirically determined, consciousness of my own existence proves the existence of objects in space outside me.

In this thesis Kant states that the empirical determination of a conscious self provides a proof of the existence of objects in space. So if objects are really there and their very external existence function as a subjective condition of the determination of empirical consciousness, then the empirical employment of pure categories in general and of the category of causality in particular must contain some ingredient of objectivity. Before analyzing and evaluating Kant’s position further in the light of causal principle, it is necessary to have a look in the details of proof which is given by Kant. Before that it is also necessary to understand that what Kant means by the term idealism. According to Kant there are two types of idealisms. First is material idealism and second is problematic idealism. Material idealism is theory which states that the existence of objects in space is either doubtful or, indemonstrable. While
problematic idealism is a position which states that the existence of external objects is false and impossible. Kant refutes both of these idealisms. And the weight of proof states the epistemological necessity for any object for the determination of subjective and empirically determined consciousness. The thesis is proved by Kant in the following words.74

“I am conscious of my own existence as determined in time. All determination of time presupposes something permanent in perception. This permanent cannot however be something in me, since it is only through this permanent that my existence in time can itself be determined. Thus perception of this permanent is possible only through a thing outside me and not through the mere representation of a thing outside me; and consequently the determination of my existence in time is possible only through the existence of actual things which I perceive outside me. Now consciousness (of my existence) in time is necessarily bound up with consciousness of the (condition of the) possibility of this time determination: and it is therefore necessarily bound up with the existence of things outside me, as the condition of time determination. In other words, the consciousness of my existence is at the same time an immediate consciousness of the existence of other things outside me.”

Here Kant’s proof states that the consciousness of one’s own experience is possible, if it is to be determined in time. So time functions as a formal condition of the determination of self. At this point it is also to be remembered that this flow of time also functions as a formal objective condition for the determination of the sequence of causality.75

Here in this proof Kant state that time-determination pre-supposes the perception of something permanent and so the consciousness of one’s existence must require a perception which is outside itself.76

From above mentioned consideration it is quite clear that according to Kant, any subjective consciousness which is to be determined in time provides the proof of that whose consciousness it is. Apart from these objective conditions, there is no subjectively abstracted meta-physical self, which can function in the absence of objectively given external objects in space. So here space and time are again coming together as the form of pure intuition. Space and time are mutually dependent epistemological devices which can function only through mutual correspondence. And so with this, Kant provides a proof of external world.
But again this external object which is proved by the empirical determination of self-consciousness does not state that this self-consciousness indicates the existence of an external object in the form of thing-in-itself. When Kant introduces the noumena or thing-in-itself, as a problematic concept, again he uses the concept of causality implicitly. Mere empirical determination of outer objects do not or cannot save Kant’s position from the charge of subjective idealism and solipsism. There must be something which can be stated as the ground of phenomena. It is very much difficult to make any demarcation line between ground and cause. So here Kant, partly unknowingly and partly unwisely, extends the employment of the category of causality to thing in itself. Another important point is this that according to Kant the relationship between knower and known or observer and observable system cannot be a one way relationship. To make it more explicit, it can be said that, according to this view, if any act of observation makes some impact on the agency which is observing or knowing then it is illogical, or rather unscientific to suppose that the observable or rather unscientific to suppose that the observable or known-system is to be considered as impactless in the entire process. It is useful to compare this position of Kant regarding causality with the position of causality in quantum mechanics. According to Heisenberg’s uncertainty principle the causality cannot be applied to microscopic quantum systems as we generally apply it to macroscopic physical bodies. Dirac states the position of quantum mechanics in the following words.77

“A consequence of the preceding discussion is that we must revise our ideas of causality. Causality applies only to a system which is left undisturbed. If a system is small, we cannot observe it without producing a serious disturbance and hence we cannot expect to find any causal connection between the results of our observations.”

From the observation of Dirac it is clear that the principle of causality cannot be maintained in the classical physics, but there are not only two mutually exclusive alternatives. That is either to accept firm determinism of Newtonian physics which is worked out by Lalplase or a complete abandonment of any principle of causality at any scale. Dirac himself, in the same reference state that causality still remains in quantum mechanics in another form.78 The concept of causality enters quantum mechanics again in the form of time dependent evolution of wave function. One of the currently debated application is the problem of information loss. According to quantum mechanics the information loss is totally impossible. While according to
classical general relativity the information which is inside the event horizon of a black
hole is to be considered as completely lost. This position is not maintainable and it is
accepted by Hawking himself. So the conclusion is this that in quantum mechanics the
principle of causality does not remain as it was in classical physics. Yet its total
abolishment is also not there. In the same way, in Kant’s concept of causality not it
does not apply to noumena or thing-in-itself. This was the case of the application of
the principle of causality in rationalistic tradition. There causality applies to
substance; it may be God or monad. On the other hand, a complete abolishment of
causality leaves only sheer skepticism as it is the case with the conclusion of the
philosophy of Hume. Kant’s concept of causality lies somewhere between rationalism
and empiricism or Leibnitz and Hume. So if causality cannot be applied to thing-in-
itself or noumena, it does not mean that there is no regulating law or principle which
is there in the empirical world. If this is not the case, then Kant’s second problem,
‘How natural science is possible?’ would have to be answered in negative. But Kant
did not answer in this way. At the level of empirical world for Kant, the natural
sciences are somehow exact. So it can be reasonably concluded that according to
Kant the principle of causality has a limited employment. It does not apply to reality
as such yet it is not limited to subjective state of the knower. Particularly with this
stand the transcendental deduction of categories finds its final establishment which
can according to Guyer acquire in the second analogy about causality.

5.5 Conclusion:

With this conclusion Kant’s positive content of the ‘critique of pure reason’
somehow finds its end either Kant’s metaphysics of experience or Kant’s claim
about the construction of knowledge ends with this discussion. The epistemological
picture which is being arised from this situation is that of agnosticism. As in
transcendental aesthetics it was remarked that space and time are empirically real and
transcendently ideal. So in transcendental analytic it can be said that the possible
field of experience or empirical world is empirically real yet transcendentally ideal.
But this position does not provide a full picture of Kant’s epistemology. Up to this
stage, Kant examines two faculties of knowledge which are mutually exclusive and
they are, sensibility and understanding. Their formal conditions are laid down by Kant
in the form of space and time and twelve pure categories of understanding. What is
called knowledge is somehow a combination of both. But up to this stage the faculty
of reason, if there is at all, is not taken into consideration. In other words, Kant has taken all the possible type of judgments as the functions of understanding but syllogisms are not considered in epistemological sense. Now in the time of Kant there were three types of syllogisms.

1. Disjunctive syllogisms
2. Hypothetical syllogisms
3. Categorical syllogisms

The objects which are epistemological counterparts of these syllogisms are generally self, universe, and ultimate reality. For Kant syllogisms are subjects of reason. And reason can appropriately function only in the case of legitimate employment of categories. But it is also an empirical fact that reason always does not function in this way. Now what happens if reason attempts to function independent of the empirical employment of categories. This is the main thesis of the present research and this also, justifies the title of Kant’s book ‘critique of pure reason.’ So what does Kant mean by reason? Which type of reason is called ‘pure reason’? And what is Kant’s objections or criticisms for this pure reason is his theory of transcendental illusion. Kant’s position of his ‘critique of pure reason’ and his theory of transcendental illusion is to be evaluated in the next chapter.
Note and reference

1. Kant thinks that if ethics is to be considered as science then it must possess its synthetic apriori judgments.


   With this work, the axiomatization in the field of pure logic was started but in the works of Frege and Bool there are some definite elements of modern symbolic logic. But in the time of Kant there was no real development in formal logic apart from Leibniz’ attempt for the construction of a universal language. cf. Russell Bertrand (1998) ‘ A critical exposition of the philosophy of Leibniz’ RKP London.


6. Copy I. M. and Cohen (2010) ‘Introduction to logic’ P H I New Delhi. In classical logic categorical propositions are classified with reference to quality and quantity and according to this fourfold scheme of classifications of categorical propositions, there are four types of propositions A, E, I, O. But this classification is limited to categorical propositions. Here category means that class which is referred or designated by subject and predicate terms. As they are about class or category they are called categorical proposition. But for Kant the function of understanding is judgement and so other two types of classical propositions that is hypothetical and disjunctive propositions are also to be considered.

7. An asymmetrical relation is that relation which if exist between y and x. it cannot be said that it will exist between x and y formally
   (x) (y) [Rxy ⊃ ¬Ryx]
   Russell says that a proposition having assymetrical relation cannot be classified into subject-predicate proposition.


10. Frege in his work, ‘The nature of arithmetic’ makes it effectively clear that there is no element of psychologism which is to be left in logic. The actual process of human psychological thinking has nothing to do with the formal rules of logic. cf. Russell Bertrand (1936) ‘The principle of mathematics’ RKP London. It is a point which is much elaborated by Russell and subsequently by logical positivists that logicism clearly refutes psychologism and therefore the stand of Kant which he takes in the definition of applied logic is not even consistent with his own views of critique. For example in the introduction of critique he clearly says that there can be no final solution of epistemological problems through the study of human physiology and psychology as they have been done by celebrated Locke.


11. The concept of object language and metalanguage was first introduced in the field of philosophy by Rudolf Carnap. In the field of formalized languages these was done by Alfred Traski in his article ‘The semantic conception of truth in formalized languages’. cf. Traski Alfred (1956) ‘Logic semantics and meta-mathematics’ Oxford University press. Oxford.

Carnap together with the impact of Gödel construct two layers of artificial language with the distinction of syntax and semantics. cf. Carnap Rudolf (1937) ‘The logical syntax of language’ RKP London

12. Kant Immanuel (2000) op. cit. P.199 A_{65}/B_{88}

13. Paton H. J. (1961) ‘Kant’s metaphysics of experience’ vol.-I chap-19. Almost all commentators and scholars of Kant are in agreement with Paton on this point that it is very much difficult to find out the actual object of deduction of categories. Even what is the exact meaning of deduction is not also clear among scholars.


15. Kant Immanuel(2000) ibid p-p.204-206 A_{68^5}/A_{70}/B_{93}-B_{95}

16. Kant Immanuel(2000) ibid. p.205 A_{69}/B_{94}. Kant’s entire consideration rests again on the validity of Aristotelian logic. Generally here Kant is not dealing with a logical structure of a concept. Logically a concept is nothing but a set of all those necessary characteristics which are to be included in the definition of an abstract or a collective name. Kant’s approach is epistemological and he wants to deal with the concepts only
with the condition that its first representative raw material has been furnished by
intuition. Therefore it is necessary for Kant to undertake the analysis of classical
Aristotelian propositions in epistemological form.

17. Guyer Paul (2010) ‘The deduction of categories – the metaphysical and
transcendental deduction’ in the Cambridge companion to Kant’s critique of pure

18. Kant Immanuel(2000) op. cit. A\textsubscript{70}/B\textsubscript{95} P.206

20. This type of interpretation of classical proposition is become popular in the middle of
19\textsuperscript{th} century. When George Bool made an interpretation that in categorical
propositions subject and predicate terms designate two classes. cf. Copy I.M. and
Cohen E. (2011) ‘introduction to logic’ 13\textsuperscript{th} edition Mackimillan Company. TMH
New Delhi. In this line of interpretation the diagrammatic symbolism of universal
affirmative proposition is given as.

\begin{center}
\begin{tikzpicture}
\node[draw, circle] (P) at (0,0) {P};
\node[draw, circle, fill=gray!50] (S) at (-1,0) {S};
\end{tikzpicture}
\end{center}

For Kant, although, this type of class inclusion relationship is not a matter of
consideration in his transcendental logic the act of judgment is a second ordered
representative cognition which reveals a cognitive validity. Same applies to other
forms of judgments also.

21. Kant Immanuel(2000) op. cit. A\textsubscript{72}/B\textsubscript{98} P. 207
22. Kant Immanuel(2000) ibid A\textsubscript{74}/B\textsubscript{99} P.208

It is also to be noted that the division of Kant’s logic represents a very much narrow
range of modern logic. Particularly this discussion seems to imply that this discourse
is limited to a small part of propositional logic.

23. Kant Immanuel(2000) ibid A\textsubscript{74}/B\textsubscript{99} P.208
24. Kant Immanuel(2000) ibid A\textsubscript{74}/B\textsubscript{99} P.208
25. Kant Immanuel(2000) ibid A\textsubscript{70}/B\textsubscript{95} P.206
26. Kant Immanuel(2000) ibid A\textsubscript{75}/B\textsubscript{101} P.209

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Kant’s classification of propositions into problematic, assertoric and apodictic judgments seems artificial from a modern point of view. Whether a given proposition is problematic or apodictic cannot be determined on the ground of pure logic. Therefore from a cognitive or factual reference, this classification is to be understood in Kant’s transcendental logic.

29. Kant Immanuel (2000) ibid A80/B106 P.212

31. Particularly there is no provision or scope in Kant’s logic for the inclusion of those propositions which contain nested quantifiers. For example, ‘There are at least two stars.’

   This proposition can be symbolized as
   \((\exists x) (\exists y) (Sx \cdot Sy) \cdot (x=y) \cdot (z) Sz \supset (x = z) v (y = z)\)

   This type of proposition cannot be included in Kant’s formal or transcendental logic.


35. Kant Immanuel (2000) op. cit. A84- A130, p-p.219-244

38. Actually this is a deep question regarding the relationship between formalism and reality. Generally it cannot be supposed that there is a possible formal super structure which has the extra characteristic of its correspondence with reality. Currently in the interpretations of quantum mechanics the many world interpretation reconsiders the question about the relationship between formalism and reality and indicates that there is a possibility of one-one correspondence between them cf. ‘Bryse De. Witt and Greham E. (1973) ‘The many world interpretation of quantum mechanics’ Princeton
Cambridge University press, Cambridge.

40. Kant Immanuel(2000) ibid A_{93}-B_{115} P.224
41. Kant Immanuel(2000) ibid A_{95}.P.225. this paragraph was omitted from the second
edition of the critique and it was replaced by three subsequent paragraph
42. Kant Immanuel(2000) ibid A_{95} P.225
43. Kant Immanuel(2000) ibid B_{127} P.225
45. Kant Immanuel(2000) ibid B_{128} P.226
46. Kant Immanuel(2000) ibid B_{129} P.226
47. Kant Immanuel(2000) ibid A_{98} p-p 227-228
Ahmedabad
49. Kant Immanuel(2000) op. cit. A_{99} P.228
50. Kant Immanuel(2000) ibid A_{99} P.229
51. Kant Immanuel(2000) ibid A_{100} P.229
52. Kant Immanuel(2000) ibid A_{101} P.229
Steve Naragon, 28 " 284, P.93 Cambridge University press, Cambridge
Jendon. A_{103} P.134
56. Kant Immanuel(2000) ibid A_{114} P.134
57. Kant Immanuel(2000) ibid A_{106} P.135
58. Wolff Paul Robert (1968) ‘A reconstruction of the arguments of the subjective
Macmillian Jordon. P.90,94
59. Wolff Paul Robert(1968) ibid p-p.102-103
60. Kant Immanuel(2000) op. cit. A_{114} P.140
61. Kant Immanuel(2000) ibid B_{165} P.173
62. Wolff Paul Robert (1968) op. cit. P.96


Here Kemp Smith mention that the section of second analogy contains at Five distinct proofs of causation. The view is naturally supported by scholars like Aclickes and Vaihenger P.363


66. Walsh W.H.(1968) ibid P.56


69. Smith N.K.(1962) op. cit. P.364

70. Kant Immanuel(2000) op. cit. B233 P.218

71. Kant Immanuel(2000) ibid B266 P.239

72. Kant Immanuel(2000) ibid B276P.245

73. Kant Immanuel(2000) ibid B275 P.244

74. Kant Immanuel(2000) ibid B276 P.245

75. This formal condition of time for the determination of causal relationship can be better understood by the concept of an arrow or direction of time. Contemporary interpretations regarding this matter put heavy emphasis on the direction of time. And its relation with unchangeable priority of cause on effect. cf. Reichenbach Hans (2001) ‘The direction of time’ Dover publication, London

76. Smith N.K. (1962) op. cit. P.4


78. Dirac P. A. (1958) ibid P.4


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According to the singularity theorems no information or signal can come from event-horizon of a black hole since nothing can travel faster than light. So the scientific predictability completely breaks down inside the event horizon. Even the quantum version of this description does not provide a way out. According to Hawking’s later discovery, Heisenberg’s uncertainty principles states that even empty space is full by pairs of virtual particles. One of the particle or its empty particle can be emitted from the event-horizon. The other particle falls inside the singularity and so the information is to be thought as completely lost. But this is against the basic principles of quantum mechanics and so as some very recent discovery suggests, information is not lost even in this situation and therefore in a limited scale, the principle of causality remains in quantum mechanics cf. Succskind Leonard (2007) ‘The cosmic landscape’, Bantam book, New York.


81. Patton H.J. (1961) op. cit. ‘Kant’s metaphysics of experience