

The influence of Kant's critical philosophy on Logical Positivism

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Abstract

This paper attempts to show the influence of Kant's critical philosophy on Logical Positivism. In order to achieve this objective, we set out in the first half to examine Kant's analysis of the nature, limits and conditions of our knowing process. Having established Kant's position, the burden of the second half is precisely to explore and explicate the relationship between his system and the Logical Positivists. Most studies on the Positivists do not deal with the possibility of an influence exercised by Kant's transcendental strategy. The more general reason has to do with the mistaken belief that a philosophical theory can be separated from the intellectual culture in which it is articulated. It has become fashionable to evaluate a philosophical position without taking into account either the roots of the idea in the history of philosophy or the way in which the position emerges within a system of thought. This is one reason why the most intriguing part of the twentieth century philosophy has not been understood – not enough attention has been paid to the indebtedness of the Positivists to the Kantian tradition. This work tries to correct the inadequacy of these studies by demonstrating that Kant indeed leaves a lasting influence on the Logical Positivists' philosophy.

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Introduction

That a philosophical tradition influences culture and culture stimulates thought is consistent with the view that thought and culture are reciprocally causes and effects of each other. Such was David Hume's revolutionary view against reason and nature to which Immanuel Kant's critique was a response, which in turn became a great source of philosophical speculation for many other philosophers, notably the Logical Positivists. Their speculations were responding indirectly to the cultural factors that prevailed in Kant's days. The history of philosophy since Kant is to a great extent the history of his influence; interpretation, transformation, critique and re-assessment of his ideas. To give an adequate account of Kant's influence either positively, negatively or in the neutral sense (which only suggests his extra-ordinary importance) is to rewrite the history of post-Kantian philosophy. In him, as truly perhaps as in Descartes, philosophy made a new beginning such that most of those who came after him were influenced by one or more aspects of his teachings. It is remarkable that of all the historical figures in modern philosophical tradition, Kant has been the most influential in the West. A great number of the philosophical controversies of the late twentieth century can be greatly clarified only by a recognition and understanding of their Kantian origin. The Logical Positivists' paradigm of two types of judgements – analytic (*a priori*) and synthetic (*a posteriori*) and their rejection of synthetic *a priori* judgement as established by Kant in the eighteenth century is one example. The second consideration is based on the verification criterion and metaphysics. Here, it is important to view the Verificationists' epistemology in the light of this distinction that Kant had established. In advancing this, the Logical Positivists' principle of verification is supposed to constitute the yardstick for determining whether a proposition is literally meaningful or not. For them, a simple way to formulate it is that a proposition has literal meaning if what it expresses was either analytic or empirically verifiable. In this, the Positivists' problem against the metaphysician is not that they try unlike Kant to apply the categories of the understanding beyond the bounds of possible experience but because they produce sentences which do not conform to the test of being empirically verifiable. Kant equally rejects the metaphysicians for the same reason, accusing them of ignoring the conditions of knowledge in order to discover the limits of the human understanding, whereas the Logical Positivists accuse them of disobeying the rules that govern the limits of language in order to formulate a general criterion of its usage. The third historical thread that stands out especially significant connecting the Logical Positivists to the Kantian heritage that will be examined is the separation of science from religion. For them, there is an attempt to set up a world of value different from the world of possible experience. By so doing, the Positivists are seen as a continuation of the tendency that is characteristic of the philosophy of Kant. As we shall see, the reading that is to follow traces the very different ways in which Kant's thoughts affected the Positivists. But before giving these essential details, let us begin with an analysis of his critical philosophy.

Kant's critical philosophy

Kant, perhaps the greatest German philosopher of the modern period, was influenced by Martin Knutzen, a professor of logic and metaphysics at the University of Königsberg, from whom he developed an interest in the philosophy of Christian

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Wolff – a follower of Leibniz. During this period, Kant's interest irrespective of his lectures on logic, mathematics and metaphysics, was in the external world. That was why he devoted much time to the relationship between metaphysics and the natural sciences that culminated in the publication of his *Universal History of Nature and Theory of Heavens* in 1755 – a work in which he attempted to explain the structure of the universe using Newtonian physics. In 1760, Kant's interest started moving into the outer limits and innermost nature of the cosmos; that is, the moral nature and knowledge of human beings. He started moving away from the traditional metaphysics of Descartes and Leibniz, in terms of what people know, to how people know or what conditions make 'knowing' possible. This movement was occasioned by his acquaintance with Hume's work, which as it were awakened him from his rationalist 'dogmatic slumber' (Kant 1950:8). It must be emphasised that the seventeenth century rationalists had tried to formulate thoughts from their given stock of innate ideas where they attempted to deduce the knowledge of objects, while the eighteenth century empiricists had sought to present human knowledge as being derived solely from sense experience and induction. Hume, though an empiricist, stretches this process to its limits and shows that experience cannot provide any justification for the basic principle of causality. In his view, we psychologically assume that our impressions of contiguity, priority in time and space and constant conjunction do imply the existence of a necessary connection that supports the principle of causal necessity and its attendant negative consequences for objective scientific knowledge.

Being dissatisfied with rationalists' tradition and the skepticism of Hume's empiricism, Kant felt that both positions produced chaos and anarchy. His central project in the first *Critique* of 1781, therefore, is to bring order to human knowledge. In his view, there is no knowledge without reason and experience. Only in their synthesis do we make legitimate claims about the world. In order to formulate a novel conception of objectivity in knowledge which he calls transcendental or critical idealism, Kant agrees with the empiricists that all knowledge begins with experience. He raises an epistemic question which borders on metaphysics, namely: "Is there any knowledge that is independent of experience and even of all impressions of the senses? Such knowledge is entitled *a priori* and distinguished from empirical, which has its source *a posteriori*, that is in experience?" (1929:42-43). Kant is here asking whether there is something such as analytic or *a priori* judgement?

The expression '*a priori*' does not however indicate with sufficient precision the full meaning of our question. For it has been customary to say even of such knowledge that it is derived from empirical sources, that we have it or are capable of having it *a priori*, meaning that we do not derive it immediately from experience but from a universal rule, a rule which is itself borrowed from experience (1929:43).

In doing this, Kant is pre-empting a viable condition for a meaningful discussion of a non-experiential being. Simply put, he is implying that metaphysics without epistemology is impossible. In the course of elaborating his theory, Kant introduces his dictum of dichotomy. According to him "... though all our knowledge begins with experience, it does not follow that it all arises out of experience" (1929:41). This statement can be explained from two logical concepts, namely necessary and sufficient conditions. A necessary condition is one without which a thing would not occur or exist, while a sufficient condition is one which when given, something else automatically exists or occurs. Kant's dictum can be re-phrased in the light of the above logical explanation to mean that even if sense experience is a necessary condition of knowledge, it is not a sufficient condition.

Against the contingency of empirical knowledge, Kant is of the opinion that there must be another kind of knowledge which is both necessary and absolutely universal. Such knowledge is necessary because it does not owe its validity to empirical verification. Its negation will always introduce a contradiction while it is universal because it holds for every place and every time. This kind of knowledge Kant calls analytic judgements. An analytic judgement is one in whose truth is guaranteed by the meaning that is discoverable through the analysis of the terms used. In Kant's view, "... the connection of the predicate with the subject is thought through identity" (1929:48). Far from telling us anything new, analytic judgements logically entail what we already know. The "predicate B belongs to the subject A, as something which is (covertly) contained in this concept A" (1929:48). Here too, some analysis of the above statement is necessary, otherwise one may through misunderstanding commit Kant to a logical error. It is on the level of 'predicacy' that he makes such an assertion. He is not saying that the predicate is contained in the subject as any object relates to its container. This would run him to a logical misappropriation because predicates are larger in extension than their subjects. His examples of analytic propositions include (i) "All bodies are extended"; "The whole is equal to itself"; "The whole is greater than its parts"; "A triangle has three angles"; "God is omnipotent" (1929:48, 54, 502); "Gold is a yellow metal"; "No bodies are unextended" (1950:14). When we say 'Rose is a flower', the concept of 'flower' is larger than the concept of 'rose'. There is no logical method through which we can fit a larger entity into a smaller container. It is in this sense that Kant uses the word 'covertly contained' in a distributive way. In the example 'a bachelor is an unmarried man', the predicate 'unmarried man' is distributed in the subject 'bachelor', while the subject 'bachelor' is related to the predicate 'unmarried man', in the same way. This is how the predicates in analytic judgements are 'covertly contained' in

their subjects or vice versa. Kant contrasts analytic judgements with synthetic judgements. In the latter type, the connection of the predicate with the subject “is thought without identity” (1929:48). Here, the predicate “B lies outside the concept A, although it does indeed stand in connection with it” (1929:48). “All leaves are green” or “All bodies are heavy” (1929:49) is Kant’s example of a synthetic judgement. This means that the predicate ‘green’ does not necessarily characterise ‘all leaves’. It is quite unlike the relationship that exists between the subject and predicate in analytic judgement – ‘a bachelor is an unmarried man’. In the second case, the concept of ‘bachelor’ is necessarily connected to the concept of ‘unmarriedness’ and adds nothing to the content of knowledge. But in the first case we are considering a predicate ‘green’ which is not necessarily connected to the subject ‘all leaves’. In synthetic judgements, therefore, the predicate is accidental to the subject and this extends our knowledge of the world (1950:14).

At this stage, Kant’s arguments rest on the general doctrine that the only meaningful propositions are essentially *a priori*, necessary or analytic truths or they are *a posteriori*, contingent or synthetic truths. On this dichotomy, Hume drew the conclusion that any metaphysical proposition must be meaningless since it would be either analytic or synthetic. Thus, from Hume it was already becoming apparent to Kant that empiricism denies the possibility of metaphysics while upholding the truths of mathematics and natural science (physics). Kant thought that the problem of the status of mathematics, natural science and metaphysics is central to his whole philosophical enterprise. In contrasting our knowledge of mathematics and natural science with metaphysics, Kant argues that the general claims of these disciplines are synthetic *a priori* judgements. He tells us that “in all theoretical sciences of pure reason, synthetic *a priori* judgements are contained as principles” (1929:52). It should be noted, however, that Kant uses ‘judgement’, ‘knowledge’ and ‘proposition’ interchangeably. His reason is that all knowledge is a product of judgement and all judgements are expressed in propositions or statements. He offers the most conspicuous examples in mathematics, namely the proposition “ $7+5=12$ ” (1929:52) while the propositions “in all changes of the material world, the quantity of matter remains unchanged” (1929:54) and “the world must have a first beginning” (1929:55) are examples of synthetic *a priori* principles in natural science and metaphysics respectively. In all these examples, Kant shows that the truths of these propositions are presupposed in the interpretation of experience. For each claim to be true, it would not refer to a particular time and place, but must be strictly universal and necessary. Thus, when Kant in the opening sections of the *Critique* asks the question “How are synthetic *a priori* judgements possible in mathematics, natural science and metaphysics?” he is in effect asking the question about the status of the general truths of these disciplines as synthetic *a priori* knowledge. For him, it is such truths as these that are required for the proof or defense of objectivity. In the ‘Aesthetic’ and ‘Analytic’, Kant is concerned to discover how this can be established in mathematics and natural science, while in the ‘Dialectic’ he shows the impossibility of its demonstration in metaphysics.

To investigate the possibility of synthetic *a priori* knowledge in mathematics and natural science, Kant aims to show that these judgements define the necessary conditions of experience and by extension how objective knowledge of the world is possible. He argues that experience has a structure namely space and time which are intuited *a priori*. As the base for the formation of mathematical concepts, they are the representation of the form or necessary conditions of viewing appearances of objects as sensible intuitions in the mind. In this way, Kant’s problem is: Given a universe, how can we know it? In his view, when we make judgements about the world, the understanding (apart from space and time which are forms of sensible intuitions) brings the *a priori* categories of unity, causality, substance, necessity, existence, etc. to bear on our experience using these concepts in judgements. He contends that without the condition of sensible intuition that interplays with concepts or categories, the possibility of any object is incomprehensible. In a famous remark Kant says: “Thoughts without content are empty, intuition concepts are blind” (1929:93). He holds that because of the role of space and time and the categories (as *a priori* intuitions and concepts of pure understanding) which justifies them as valid laws that describe the workings of nature, our knowledge of objects within this formulation is synthesised as phenomenal (that is objects as they appear to us) to differentiate them from noumenal (objects as they are in themselves). Thus, when Kant says that objective judgement refer to objects to be true, he does not mean that they must refer to objects existing independently of the perceiver but of phenomenal ‘objects’ which “are nothing but mere representations of our sensibility” (1929:74). This is the idea that is compared to the Copernican revolution which reversed the traditional scientific belief of the sun orbiting the earth. In the same way, Kant (contrary to the claims of his predecessors) argues that the human mind acquires knowledge by imposing the *a priori* laws of the understanding upon experience. He gives the name ‘transcendental ideas’ to the concepts of pure reason just as he gives the name ‘categories’ to the concepts of pure understanding. The pure concepts of reason then, Kant contends, are necessary in so far as they set us the task of extending understanding as far as the unconditioned. It is important to note, however, that because such concepts arise from the very nature of reason, they have no corresponding empirical employment and so can have “... no other utility than that of ... directing the understanding” (1929:316). Kant therefore calls the objective employment of pure concepts of reason ‘transcendent’, by which he means an employment extending or overlapping the limits of experience while the

employment of the pure concepts of understanding (the categories) he calls immanent, that is applying only to possible experience.

In determining the scope and limits of knowledge, Kant speaks of metaphysics as “the battle-field of ... endless controversies” (1929:7) and of his own aims as those of its “reform and restoration” (1929:8) by instituting “a tribunal which will assure to reason its lawful claims and dismiss all groundless pretensions” (1929:9). In exposing its lack of credentials in areas where it has no legitimacy, Kant tells us that the “... unavoidable dialectic of pure reason” (1929:300) occurs when the *a priori* categories of human understanding which are not meant to be used outside experience are objectively employed to apply to things in themselves. By so doing, the metaphysician is led to overstep the limits of possible experience to produce transcendental ideas as demonstrated in the illusion of speculative psychology (paralogism – fallacious syllogism about the self erroneously taken as object of knowledge). Similarly, when the metaphysician attempts to transcendently investigate the world as he does in speculative cosmology, he is inevitably led to a ‘conflict’ of reason consisting of the antinomies (contradictory positions with theses and antitheses about the world on issues bordering on space and time, substance, causality and the idea of an absolute, necessary being as the cause of the world or its parts) and when he tries to inquire about the knowledge of God (speculative theology), the idea of pure reason is unavoidably involved in an illusory proof of God’s existence as if it is an object of experience. Kant believes that these illusions can be resolved once we realise that the legitimate theoretical function of reason is not to give us knowledge of the self, cosmos and God (because such transcendental entities or ideas which are not given to us in experience are beyond the power of minds to shape) but to serve as regulative guidelines of the way we think in providing a unity and coherent whole to human knowledge in our attempt to ask many unresolved metaphysical questions.

It is significant to note that Kant’s limitation of knowledge to the spatio-temporal realm was to understand our experience not only in the defense of scientific knowledge but also in the defense of moral and aesthetic values. In proposing a moral departure for religious beliefs, Kant claims that religion arises from our moral obligation as duty, as a rational necessity. For religion is nothing else than “the recognition of all duties as divine commands” (1996:156). In the absence of the moral law, Kant insists that man would never know himself to be free and without freedom morality is impossible. For man to be ethical, he has to be free. From this, Kant thus formulates the fundamental law of pure practical reason as (i) let your action be a universal law (ii) let men be treated as ends not as means. These laws are not man-made. They are categorical imperatives. Categorical because they are unconditioned, universal, objective and independent of human feelings; they are imperatives in the sense that they are experienced with a sense of duty, as an inner necessity occasioned by reason. They presumed or presupposed something religious – that is there is a law giver (a God) who guarantees their success. Obeying them requires the idea of justice by rewarding people according to their adherence or otherwise.

Kant and the Logical Positivists’ philosophy

A philosophical idea can impact on subsequent thought in the following ways, namely the positive sense in which case an idea may be fully assimilated in its entirety. One may also be wholly influenced by an idea in the negative sense but at the same time use the idea in different ways with different applications, while in the neutral sense one may be influenced by an idea but in the long run takes a completely radical departure by constantly reviewing the original position in order to reach an equilibrium. Peter Bodunrin once argued:

It is often not realised that the influence of one philosopher over another is attested not only by the similarity of their thoughts but by their dissimilarity. The works of one philosopher may lead another to follow a different path, when we say he reacts against the former (1987:8).

It is in the above senses that the influence of Kant’s critical philosophy by the close of the eighteenth century gave an extra-ordinary impetus to the study of problems concerning the scope and limitations of human certitude. This influence was felt among the exponents of the traditional ‘philosophy of the schools’ such that the agenda for practically every philosophical movement during the nineteenth and late twentieth centuries were significantly refined, shaped and impacted by Kant. W. T. Jones lent credence to this when he observes that:

Kant’s influence was too powerful ... For a long time to come everyone (including the Logical Positivists) thought not only in his terms, but largely in his vocabulary ... and ... found reasons for developing his thoughts in a different direction ... (1952: 101).

The term ‘Positivism’ was first used by Henri de Saint-Simon (1760-1825) to describe the use of scientific method in sociology and philosophy. Through Auguste Comte (1778-1857), the school became a great philosophical movement in the Western world during the second half of the nineteenth and the first decade of the twentieth century. For them, science is the only valid knowledge and as such philosophy should not possess a method different from science’s.

Positivism abandons any alleged knowledge that goes beyond experience and any method of investigation other than the scientific method. In his conception of a positive science of society, Comte for example confines himself to the concept of experience and demands the removal of all metaphysical elements from science by being resolutely opposed to the *a priori* speculations of the German idealists like Kant and the neo-Kantians – G.W.F. Hegel (1770-1831), J.G. Fichte (1762-1814), F.W.J. Schelling (1775-1854), L. Feuerbach (1804-1872), etc. This tradition resulted in the anti-metaphysical posture of empirical positivists like J.S. Mill (1806-1875), R. Avenarius (1834-1896), Ernest Mach (1838-1916), etc. whose doctrines according to W.H. Walsh were that “science is fundamentally the description of experience” (1967:52). Thus, it is safe to say that Positivism as it may be is rigidly ‘empiricist’ in the eyes of its exponents. As a radical projection of the British empirical tradition, its most direct influence could be traced to Hume’s and particularly Kant’s rejection of speculative metaphysics. With such a powerful influence, the Positivists developing Kant’s ideas along different lines began to see in Wittgenstein’s *Tractatus* and the writings and teachings of G.E. Moore and Bertrand Russell the bedrock for building their philosophical enterprise. In that work, Wittgenstein had said, “what can be said at all can be said clearly; and whereof one cannot speak thereof one must be silent” (1999:27) and hence to the effect that “philosophy is not a body of doctrines but an activity” (1999:4.112). This remark of Wittgenstein coupled with Moore and Russell’s insistence that the task of philosophy is merely to make clear what it is that we know and how we know it when we assert propositions to be true that greatly influenced the spread of the Positivists’ philosophy.

Consequently, in the first quarter of the twentieth century, a group of eminent scientists and intellectuals – A. J. Ayer, Rudolf Carnap, Phillip Frank, Frederick Waismann, Otto Neurath, Hans Hahn, Herbert Freigl, Kurt Godel, Victor Kraft and Felix Kaufmann under the leadership of Moritz Schlick, a physicist, converged in Vienna to reconstruct philosophical thinking and proposed a consistently methodological perspective. Although the intellectual background of these great minds varied, their strongest common interest was not only on how to confront and resolve the hitherto philosophical problem of traditional speculative philosophy as a description of ultimate reality but also a continuous radical reaction against speculative German metaphysics and system building. The philosophy of this group which later came to be known as the ‘Vienna Circle’ was also referred to as ‘Logical Positivism’, ‘Logical Neo-positivism’, ‘Logical Empiricism’, ‘Consistent Empiricism’ and ‘Scientific Empiricism’.

... the members of the Vienna circle moved away from Kant owing to their professed empiricism, they did nonetheless adopt the Kantian project of founding science on an unshakable basis in another form that drew them nearer to Hume and in particular, to a more modern current of thought ... (Delacampagne 1999:96).

In brief, this Kantian and Modern perspectives could be found in the unification of science attainable through the unity of language (precisely the language of physics), the conspiracy against metaphysics in all its disguised forms and the total indifference to ethical concepts. According to Robert Martin, the Positivists “discard all the overblown woolly pretentious nonsense that had passed as philosophy for centuries” (2001:7). Thus, like Kant, their aspiration to rebuild the foundations of philosophy were committed to a scientific conception of the world that could find meaningful expression in all areas of life. In Ayer’s own words, he says:

One of the principle aims of the Vienna Circle was to rebuild the bridge between philosophy and science which had been largely broken by the romantic movement and the accompanying rise of idealist metaphysics at the beginning of the nineteenth century. Indeed, its members saw the future of philosophy as consisting, once the fight against metaphysics had been won, in the development of what they called the logic of science (1977:129).

In the Logical Positivists’ conception of the logic of science, the use of the syntax of scientific language was to play a fundamental role in this venture only if it meets the requirements of clarification of concepts by means of logical analysis. It is in this recourse to the systematic pursuit of clearness, logical precision and the rigorous intellectual commitment to grapple with the problem of meaning that Gustav Bergmann tells us how a clever Englishman once proposed the equation that “Logical Positivism is Hume plus mathematical logic” (1954:33).

Analytic and synthetic dichotomy

Kant’s influence on the Logical Positivists’ philosophy presents itself first in two main ideas which form the heart of his system. These are (i) the recognition that all forms of logical and deductive reasoning as a whole are analytic, in which case they elucidate the meaning of words such that their predicates are contained in their subject terms, but yield no new knowledge about the world, while (ii) all empirical propositions are synthetic, in which case their predicates are not parts of the subject terms, but add new information that expands our knowledge of the world. As we have seen in our analysis of the critical philosophy, Kant’s classification of judgement into analytic and synthetic propositions has a long history from antiquity. While some notions of the *a priori* and *a posteriori* were contained in Aristotle’s philosophy in the Ancient period, St. Thomas Aquinas, Boethius and others in the medieval period defined ‘self-evident’ (analytic) propositions as

those in which the predicate terms are contained in the subject terms. This agrees with the claims of the rationalists that all truths are analytic in contrast to the claims of the empiricists who think all truths are synthetic. Leibniz and Hume for example took over the distinctions between 'truths of reason' and 'truths of fact' and relations of ideas' and 'matters of fact' respectively. By Kant's time, the term analytic had come to mean propositions which are found in the analysis of their subject concepts. They are therefore *a priori* knowledge, independent of experience, while synthetic propositions are *a posteriori* because their truths cannot be established by the analysis of their subject concepts but have to be learnt from observation and experience.

By drawing a similar distinction between these two concepts, the Positivists "preserve(d) the logical import of Kant's distinction between analytic and synthetic propositions" (Ayer 1952:78). According to them:

... we say that a proposition is analytic when its validity depends solely on the definitions of the symbols it contains and synthetic when its validity is determined by the facts of experience. Thus, the proposition 'There are ants which have established a system of slavery' is a synthetic proposition. For we cannot tell whether it is true or false merely by considering the definitions of the symbols which constitute it. We have to resort to actual observation of the behaviour of ants. On the other hand, the proposition 'Either some ants are parasitic or none are' is an analytic proposition. For one need not resort to observation to discover that there either are or are not ants which are parasitic. If one knows what is the function of the words 'either' 'or' and 'not' then one can see that any proposition of the form 'Either P is true or P is not true' is valid, independently of experience. Accordingly, all such propositions are analytic. It is to be noticed that the proposition 'Either some ants are parasitic or none are' provides no information whatsoever about the behaviour of ants or any matter of fact. And this applies to all analytic propositions. None of them provide any information about any matter of fact. In other words, they are entirely devoid of factual content ... It is for this reason that no experience can confute them (Ayer 1952:78-79).

In the same way, Carnap also argues that:

(Meaningful) statements are divided into the following kinds. First there are statements, which are true solely by virtue of their form ('tautologies' according to Wittgenstein; they correspond approximately to Kant's 'analytic judgements'). They say nothing about reality. The formulae of logic and mathematics are of this kind. They are not themselves factual statements but serve for the transformation of such statements. Secondly, there are the negations of such statements ('contradictions'). They are self-contradictory, hence false by virtue of their form. With respect to all other statements, the decision about truth or falsehood lies in the protocol sentences. They are therefore (true or false) empirical statements and belong to the domain of empirical science (1978:76).

Following the above position, the Logical Positivists openly declare their derivation from Kant of the view that every significant or meaningful proposition must be either analytic (*a priori*) or synthetic (*a posteriori* or empirical) whose usefulness or significance is to provide us with a clarifying picture of our knowledge. Yet, while Kant introduced the distinction between analytic and synthetic statements as a way of establishing the limits of knowledge, the Positivists on the other hand subscribe to the view that linguistic expression could be exhausted by a similar distinction. This implies for the Logical Positivists a rejection of Kant's third classes of judgement, the synthetic *a priori* propositions. According to Kant, it is the demonstration of such truths as these that are required for the proof of objective empirical science. Thus, the problems of objectivity and synthetic *a priori* knowledge in Kant are ultimately connected. This view is discussed extensively in one of the most famous sections of the *Prolegomena* titled "Second Part of the Main Transcendental Problem" (1929:28ff) where he tries to show the possibility of a pure science of nature consisting of propositions that are synthetic *a priori* in the sense that objects of experience must of necessity conform to certain *a priori* conditions. For the Logical Positivists, there is no such a thing as synthetic *a priori* truths as demonstrated by Kant in the foundations of mathematics and natural science. In fact, it is precisely in the rejection of the possibility of (Kant's) synthetic knowledge *a priori* that the basic thesis of modern empiricism lies" (Sarkar (ed.) 1996:330).

The verification criterion and metaphysics

With the classification of meaningful propositions into an analytic-synthetic distinction and the rejection of the synthetic *a priori* type stemming from the Kantian tradition (that we cannot make sense of the claim to understand the world beyond our experience), the Logical Positivists were led to the formulation of a criterion for determining the meaningfulness of propositions. This criterion which was henceforth and collectively referred to as the 'verifiability principle' (VP) saw the declaration of war "not only on classical metaphysics – with strict reference to the systems of the scholastics and German idealism – but also the veiled metaphysics of Kantian and modern *a priorism*" (Carnap *et al.* 1966:485). (Though, unlike the Positivists', Kant in the dialectic never rejected all forms of metaphysics. What he rejected was the rationalist

dogmatic metaphysics of the traditional type). The main impetus in the formulation of this fundamental principle was the search for meaning. According to Ayer, “the principle of verification is supposed to furnish a criterion by which it can be determined whether or not a sentence is literally meaningful” (1952:5). As was originally conceived by members of the Vienna Circle, the Verifiability Principle was expressed as saying that “the meaning of a proposition is its method of verification” (Schick 1968:443). Ayer contends that:

A sentence is factually significant to any given person, if and only if he knows how to verify the proposition, which it purports to express – that is if he knows what observations would lead him under certain conditions to accept the proposition as being true or reject it as being false (1952:35).

The underlying import of the verification criterion was that there are no abstract universal or *a priori* principles, no presumptions of a general kind whether these are philosophical or theoretical. For them, everything must be reduced to the ‘given’ of experience by being inter-subjectively testable. By formulating this precise criterion of verification, the Logical Positivists hope to make possible a strict scientific discussion of all philosophical questions.

Among the Positivists there was no agreement as to the nature of the verifiability principle itself. While some insist that it should be completely verified, ‘practical verifiability’ (‘direct’ or the ‘strong sense’), others accept that it is enough to be verifiable in principle (‘indirect’ or the ‘weak sense’). A proposition is said to have a direct method of verification when it asserts something about an experience which can be effectively tested or verified by immediate perception. For example, if we say ‘it is raining’. This is verified by our present experience. Whereas an indirect method of verification is employed when the proposition cannot be verified directly through one’s immediate perception. For example, the proposition that ‘the earth revolves round the sun in 365 days’ is not directly or immediately verifiable (practical verifiability) but it is indirectly verifiable (verifiable in principle) because we can find some means of going out of our planet to verify the movements of bodies. But this statement is at least verifiable in principle. This means that even if we cannot at the present time verify the proposition, we can at least describe the conditions under which this verification is possible. Carnap argues that the direct and indirect methods of verification are very crucial in scientific investigation because they assert something either about our present or future experiences. Against this backdrop, speculative metaphysics according to the Logical Positivists fails to meet their criterion of meaning and therefore all writings purporting to deal with supra-sensible and transcendental realities were regarded as the production of nonsense. In Ayer’s words,

We may accordingly define a metaphysical sentence as a sentence, which purports to express a genuine proposition but does, in fact, express neither a tautology nor empirical hypothesis. And as tautologies and empirical hypothesis form the entire class of significant propositions, we are justified in concluding that all metaphysical assertions are nonsensical (1952:41).

Within the Vienna Circle itself, Schlick had earlier published an article entitled “Experience, Cognition and Metaphysics” in 1926 in which he argues that the pretensions of the metaphysicians to have knowledge in the transcendent sense is impossible because this involves a contradiction. In his view, the metaphysician could have knowledge of his experience by enriching life through poetry and the works of art. But once he attempts to absolutely experience the transcendent, he is confronted by contradictions that confuse the art of living with the notion of knowledge and truth; thereby chasing empty shadows (1979:110-111). In the Positivists’ view, “the traditional disputes of philosophers are for the most part unwarranted as they are unfruitful” (Ayer 1952:33). They advocate as a solution the determination of the purpose and method of a philosophical inquiry; and proceed along the Kantian intellectual legacy to reject the metaphysical thesis that “philosophy affords us knowledge of a reality transcending the world of science and common sense” (Ayer 1952:33). For Ayer, “it is possible for us to be ... metaphysician(s) without believing in a transcendental reality” (1952:33). Metaphysical assertions arise as a result of “the commission of logical errors (in our linguistic usage) rather than to a conscious desire on the part of their authors to go beyond the limits of experience” (Ayer, 1952:33). These logical errors are due to the fact of distinguishing a thing from its sensory properties such that when we ascribe properties to a thing, we invariably assert that it exists. In this way, we cannot according to the Positivists validly move from the evidence of the senses to arrive at the conception of a transcendental reality. In their submission, “... from the empirical premises nothing whatsoever concerning the properties or even the existence of anything super-empirical can legitimately be inferred” (1952:33). Interestingly, this implies that there is no logical warrant to transit from the empirical to the non-empirical and to venture into the world of transcendence is logically unjustified. In their views, metaphysicians “who raise questions about Being ... based on the assumption that existence is an attribute are guilty of following grammar beyond the boundaries of sense” (Ayer 1952:43).

Carnap also argues that the application of the verifiability principle to metaphysics proves that it is non-verifiable and that if any effort is expended on verification, the product or result is always negative. He posits that “many words of metaphysics ... (are) devoid of meaning” (Ayer (ed.), 1978:65). He goes on to illustrate this with the term principle (in the sense of principle of being, not principle of knowledge or axiom). Carnap observes that “various metaphysicians offer an

answer to the question which is the (highest) 'principle' of the world" (Ayer ed., 1978:65), in terms of water, number motion, etc. In showing the meaning of the term 'principle' in the above metaphysical question, he contends that:

We must ask the metaphysician under what conditions a statement of the form 'X' is the principle of 'Y' would be true and what conditions it would be false. In other words; we ask for the criteria of application or for the definition of the world 'principle' (Ayer ed., 1978:65).

Carnap posits that for this question the metaphysician would reply that " 'X' is the principle of 'Y' is to mean 'Y' arises out of 'X', the being of 'Y' rests on the being of 'X', 'Y' exists by virtue of 'X' and so forth" (Ayer ed., 65). Carnap believes that these words are imprecise and ambiguous. He says:

Frequently they have a clear meaning (when) for example, we say of a thing or process 'Y' that it 'arises out of 'X' frequently or invariably followed by things or processes of kind 'Y' (causal connection in the sense of a lawful successions). But the metaphysician tells us that he does not mean this empirically observable relationship (Ayer ed., 1978:65).

The metaphysicians, according to Carnap, cannot resist the attempt of making their propositions non-verifiable because if they do, then they would be merely empirical propositions belonging to the domain of empirical science whose truth or falsehood would be based on experience. Carnap equally observes that "the expression 'arising from' is not to mean here a relation of temporal and causal sequence which is what the word ordinarily means. Yet, no criterion is specified by the metaphysician for any other meaning" (Ayer ed., 1978:65). Carnap therefore contends that "the alleged 'metaphysical' meaning which the word is opposed to have here in contrast to the mentioned empirical meaning does not exist" (Ayer ed., 1978:65). In the same vein, Carnap gave instances of metaphysically meaningless expressions for which no empirical criterion can be given. These are "the idea", "the being of being", "non-infinite", "nothingness", "the cause of the word", "thing-in-itself", "absolute spirit", "objective spirit", "essence", "being-in-itself", "being-in-and-for-itself" "emanation", "manifestation", "articulation", "the Ego", "the non-Ego" and so on. By drawing an analysis, Carnap submits that "meaningful metaphysical statements are impossible. This follows from the task which metaphysics sets itself: to discover and formulate a kind of knowledge, which is not accessible to empirical science" (Ayer ed., 1978:76). At best, they contain ideas that are in part poetic and in part religious. In Carnap's words "metaphysics is the inadequate means for the expression of the basic attitudes ... towards life" (Ayer ed., 1978:79); yet they do not have the capacity to do so in an adequate way through the creation of works of art. He argues that "metaphysicians are musicians without musical ability" (Ayer ed., 1978:80) who "... have a strong inclination to work within the medium of the theoretical to connect concepts and thoughts" (Ayer ed., 1978:80). In doing this, they thus make use of the language of science in which they express inadequately their experience of the world (by producing a structure which achieves nothing for knowledge) as compared to the works of art and 'the attitude towards life'. On this ground, Carnap vehemently expresses the Logical Positivists' view this way:

Metaphysical propositions are neither true nor false because they assert nothing, they contain neither knowledge nor error, they lie completely outside the field of knowledge, of theory, outside the discussion of truth or falsehood. But they are, like laughing, lyrics and music expressive. They express not so much temporary feelings as permanent emotional or volitional disposition ... The danger lies in the deceptive character of metaphysics, it gives the illusion of knowledge without actually giving any knowledge. This is the reason why we reject it (1935:19).

Admittedly, the Positivists agree with Kant on the rejection of metaphysics as a science. Both accept the contention that the scientific status of metaphysics is not attainable because the statements made by the metaphysicians are not 'testable' by any experience. Yet, there is a decisive difference between them. For the Logical Positivists, metaphysical statements as 'a matter of logic' are literally insignificant. They simply do not pass the test of verification and as such they are meaningless or non-sensical. For Kant, metaphysical assertions as 'a matter of fact' lacked epistemological credentials in not being empirically verifiable. His argument is that though we have no right to assume the existence of metaphysical objects (as noumena or things in themselves) because they are not objects of possible experience, we equally, unlike the Logical Positivists, have no right to deny them. For Kant, the problem of metaphysics is the natural and unavoidable disposition in man to transcend the spheres of the phenomenon world to the things in themselves as noumena which are not objects of knowledge. In this way, Kant's philosophy stood at the dividing line between two worlds. His attempt to save metaphysics in the (i) limited sense of a system of metaphysical (synthetic *a priori*) propositions or foundation of the empirical sciences which he termed the principles of pure natural science and (ii) the human mind's natural disposition to it were completely rejected by the Positivists who had no problem in limiting knowledge to the 'given'. It is however worth reminding ourselves here that this view of the Logical Positivists had its origin in Kant.

Science and non-science

The distinction between science and non-science represents the third major influence of Kant on the Verificationists. In our analysis of the critical philosophy, we have seen how Kant argued that an objective science of nature is possible only within the realms of our experience. In Kant's articulation, our knowledge of the objective world is a joint product of the rational or conceptual through the forms of sensibility. This means that every object of knowledge is subject to the forms of space and time and must have a sensuous content that is determinable by the concepts or categories of the mind. On the contrary, when we try in the same way to know the ultimate reality as if they are objects of experience, we become involved in the dialectic of pure reason (i.e. the paralogisms, the antinomies and the ideals of reason in the defence of God's existence) which are illusions, taking the transcendental ideas as things in themselves. Kant is convinced that we can only grasp the ultimate nature of things through ethics and aesthetics (that is our experiences of moral obligation, the beautiful and purposefulness of nature). He is determined to defend the integrity of science and moral experience and hence the distinction between science (facts) and values (ethics, aesthetics and religion). Kant's earlier consideration shows that there are transcendental objects whose concepts as he says cannot be produced by our experience. They are distinct from phenomena (appearances) whose existence constitutes our experiences of objects. He tells us that even if we cannot know the noumena as they are in themselves, we can at least believe through the use of practical reason the necessity and reality of freedom, the immortality of the soul and the existence of God as products of pure reason that are useful for the moral life of man and society. His denial of knowledge in order to make room for faith in his system further reinforces this fact. Some scholars however think that Kant would have expressed his mind in a better way if he had said that he was limiting scientific knowledge so as to carve a place for the appreciation of values (Jones 1952:68, Lawhead 2002:345).

In Kantian terms, the same can be said of the Logical Positivist model of scientific knowledge. They acknowledge Kant's claims that there is no knowledge without the mental activity of the subject (the knower) to form concepts of our experience of the world. Both Kant and the Positivists agree that in asking questions about the real nature of things, science is not able to tell us anything about the nature of reality but proceeds to limit knowledge to the phenomenal world of our experience. In Kant, however, there is the realisation that the active constructive powers of the mind, as a set of cognitive activities governed by concepts or rules of the understanding which are logically presupposed by any experience in the act of making judgements about phenomenal objects external to it, has an essential role in shaping the content of our knowledge and the meaning of the world. The Positivist doctrine of concept formation on the contrary exhibits a reversal of Kant's epistemological revolution comparable to the famous Copernican turn such that we begin to have the idea of a world that conforms to the nature of our concepts. For them, concepts are the original atomic sense data (copies, 'images', 'sensations', 'impressions' or abstractions) of objects perceived through the senses and passively interpreted by the mind. They are the mental representations or 'possessions' of the individuals which correspond or conform to something in our experience of the external world. Given the Positivists' interpretation of the world, the crucial question becomes "how it is possible for example to show ... that one's person's experience is identical with another's ... an experience based science is fundamentally subjective; science is verified only at the cost of losing its objectivity" (Edward ed., 1967:55). This is clearly because two individuals can disagree on the colour of a thing due to differences in their physiological and psychological disposition and the relative position of the object of experience. Kant, however parts ways with the Positivists in this regard. His emphasis on the *a priori* categories of the human understanding as the universal, necessary conditions of knowledge seems to provide a resolution of the question of objectivity in science.

A further consequence of the verifiability principle for the Logical Positivists is that ethics, aesthetics, religion, etc. are not scientifically defensible. For them, assertions about values fall within the realm of metaphysics and were therefore regarded as meaningless. Ayer and Carnap argue that ethical assertions based on the principle of verification lacked factual content. They are not assertions at all. "The existence of ethical and aesthetics as branches of speculative knowledge presents an insuperable objection to our radical empiricist thesis" (Ayer, 1952:102). Values and morality are without reality and meaning. To make a judgement of ethical values about 'the wrongness of stealing' for example is not, they suggest, to convey empirical information about stealing which can be either true or false, but that such judgement expresses our feeling of disapproval. Ayer argues:

If I say to someone, 'You acted wrongly in stealing that money' I am not stating anything more than if I had simply said, 'You stole that money'. In adding that this action is wrong, I am not making any further statement about it. I am simply evincing my moral disapproval of it. It is as if I had said 'you stole that money' in a peculiar tone of horror, or written it with the addition of some special exclamation marks. The tone or the exclamation marks, adds nothing to the literal meaning of the sentence. It merely serves to show that the expression of it is attended by certain feeling (of moral disapproval) in the speaker (1952:107).

In this particular example, there is an attempt to dissuade others from stealing. The disposition is to evoke an emotional reaction. Thus, Ayer contends that “in every case in which one would commonly be said to be making an ethical judgement, the function of the relevant ethical word is purely ‘emotive’. It is used to express feeling about certain objects, but not to make any assertion about them” (Ayer, 1952:108).

Similarly, Ayer tells us that “aesthetic words such as ‘beautiful’ and ‘hideous’ are employed ... not to make statements of fact, but simply to express certain feelings and evoke a certain response” (1952:113). Like ethics, aesthetic judgements according to the Positivists have no ‘objective validity’. They do not say that a particular aesthetic object has value. What they communicate is that the person who makes the judgement has certain feelings (emotions). In distinguishing the Positivist moral concepts from that of the Kantian project, Ayer concludes that:

Any attempt to make our use of ethical and aesthetic concepts the basis of metaphysical theory concerning the existence of a world of values, as distinct from the world of facts, involves a false analysis of these concepts. Our own analysis has shown that the phenomena of moral experience cannot fairly be used to support any rationalist or metaphysical doctrine whatsoever. In particular, they cannot as Kant hoped be used to establish the existence of a transcendent god (1952:114).

In the same way, the Positivists reject religious truths on the grounds that the propositions which the theists use to communicate such ‘truths’ are not testable by any experience. ‘If God is a metaphysical term,’ says Ayer, ‘then he belongs to a reality which transcends the world of sense experience.’ Such terms cannot be true or false. They come under the blanket rejection of metaphysical assertions.

From the foregoing, it is clear that the Logical Positivists stress or derive the need for a clear or complete distinction between science (facts) and non-science (religious and moral values) as two distinct fields of inquiry.

There is (according to the Positivists) no logical ground for antagonism between religion and ... science. As far as the question of truth or falsehood is concerned, there is no opposition between the ... scientist and the theist who believes in a transcendent god ... since the religious utterances of the theist are not genuine propositions of science. Such antagonism as there is between religion and science appears to consist in the fact that science takes away one of the motives which make men religious. For it is acknowledge that one of the ultimate sources of religious feeling lies in the inability of men to determine their own destiny and science tends to destroy the feeling of awe with which men regard an alien world, by making them believe that they can understand and anticipate the course of natural phenomena and even to some extent control it (Ayer, 1952:117).

The resolution of the glaring distinction by the Positivists between science and non-science in conformity with the Kantian paradigm rules out the possibility of any conflict between them. Both schools of thought believe intensely in the separate spheres of these disciplines and the tireless concern to preserve their independence, characteristics and functions which stem from their objects of knowledge constitute and pervade Kant and the Positivists’ system. For them, the object of scientific knowledge is on the perceptible, physical world of concrete existence while religious beliefs are about our moral life which relates us to a transcendental God. For the Positivists such a Kantian belief in God is totally meaningless.

Conclusion

Our examination of the critical philosophy has shown Kant as the last modern practitioner of foundationalist epistemology in the Cartesian tradition – a tradition which he recognised and at the same time rejected – saw the major problem of the history of knowledge as one of providing a metaphysical account of the way in which the subjective contents of individual minds come to have indubitable objective reference. He is also the inaugurator of a very different approach to epistemology – one that sees methodology or rules of cognitive procedure as fundamental in determining the objectivity of knowledge. While the standard view shows no relationship between Kant’s system and the Positivists of the Vienna Circle, a careful study has shown that the same claim can no longer be made about them. In fact, the Positivists’ general characteristic was the replacement of previous philosophical speculation with the scientific ways of thinking that guarantee the role of reason and the constraints of experience as Kant did. As was to be expected, this work has established that Kant’s ideas fitted well (though with some disagreements) into the debate of the latter as evident in the epistemological and semantic context. The fact of Kant’s influence on the thoughts of the Positivists is uncontested. He has more in common with late twentieth century philosophers than with his traditionalist eighteenth century predecessors. The Logical Atomism of Bertrand Russell, the ‘Vienna Circle’ Logical Positivism, Williard Van Quine and Ordinary Language Philosophy for example could be viewed as extensions of Kant’s criticisms of dogmatic metaphysics.

In locating the nature of Kant’s influence specifically on the Logical Positivists, we have seen that they derived valuable and legitimate reference to Kant in their philosophical debate. These include the clear cut distinction between analytic

and synthetic statements and by implication the recognition of the rational (the purely conceptual) and the empirical (the existential) elements in creating the objects of knowledge. The others being the verification criterion which saw all forms of metaphysics as falling into the realm of nonsense because it could not be reconstructed on a strictly empirical basis and the subsequent division between science and non-science. A dominant theme of the entire work is the demonstration *a la* Kant that for anything to be objectively valid in the epistemic sense, it must have a corresponding reference in the world of experience. Even the Positivists accept this. The failure to see this connection often hidden in the background has resulted in the failure to appreciate the importance of Kant's doctrine for the Verificationists. Graham Bird acknowledges the relevance of Kant within the context of twentieth century philosophy when he says "... though any current lessons from Kant may seem relatively inexplicitly ..., still the influence of Kant's philosophy is considerable and undisputed" (1962:127). His general mode of thought and contributions to subsequent philosophical thinking has been immense, such that his work in anticipating the ideas of the Verificationists, particularly in the areas which we have delineated, cannot be easily underestimated.

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