

KANT'S THEORY OF THE SYNTHETIC APRIORI

The basic problem before Kant was the problem of knowledge. The rationalism which resulted in dogmatism and the Empiricism which resulted in scepticism and probabilism both failed to solve the problem of knowledge. Rationalism could very well explain the necessity and universality of knowledge but it failed to account for its novelty. Empiricism, likewise could explain the novelty of knowledge but it showed an utter inability to account for its necessity and universality. The critical philosophy of Kant combines the Baconian ideal of the extension of knowledge with the Cartesian ideal of certainty in knowledge. It is the synthetic judgment *apriori* which can account for the necessity and universality of knowledge, on the one hand, and also for its novelty on the other.

Now I would like to examine and clarify this problem of synthetic *apriori* knowledge in Kant. In all judgment there is a relation between subject and predicate. An analytic judgment merely analyses an idea—without, at all, adding any new thing to it whatsoever. It does not extend knowledge. Take 'Body is extended'; here 'extendedness' is already contained in the very definition of 'body' and the entire judgment says nothing but to repeat the same thing in another form. A synthetic judgment, on the other hand, enriches our knowledge—it tells us something new. 'Earth is a planet'—here a new idea is added to the concept of 'earth'. The idea 'planet' is not contained in the definition of 'earth'. While the analytic judgment is illustrating, the synthetic judgment is expanding. While in the former the predicate is contained in the subject, it lies outside the latter. The analytic judgement simply elucidates the meaning of the term and is consequently uninformative. A judgment whose denial would be a contradiction in terms and whose negation would be logically impossible, would be analytic. And a judgment which is not so is synthetic.

Apriori knowledge is that which is absolutely independent of all experience. And a *posteriori* knowledge is grounded in and is an outcome of experience. *Aposteriori* knowledge, because of its empirical origin, can never account for its necessity and universality whereas an *apriori* judgment is absolutely universal and

necessarily valid. The *aposteriori* judgment increases and extends our knowledge but lacks necessity and certainty. The *apriori* judgment accounts for the necessity and universality but it is unable to increase our knowledge. It is the judgment synthetic *apriori* which, according to Kant, can account simultaneously for universal certainty and increase of knowledge. The synthetic *apriori* is the 'hybrid proposition' which combines the merits of both the parental propositions—i.e. synthetic and analytic. Like a synthetic proposition, it says something about the world, meaning thereby it explains the novelty of knowledge. Like an analytic proposition, it explains the necessity and certainty of knowledge.¹

The fundamental problem of Kant's first critique is: How are judgments synthetic *apriori* possible? Almost the whole of mathematics consists of such judgments and they also constitute the indispensable precondition of the natural sciences. I would like to reproduce a few examples given by Kant. Kant² took it for granted that Arithmetic is a pure science—that arithmetical judgments are established *apriori* and not as empirical generalisations. Kant also believed these propositions to be synthetic. " $7 + 5 = 12$ ", he argued, does not just explicate the meaning of " $7 + 5$ " the way "All triangles have three angles" just explicates the meaning of 'triangle'. Indeed it could not be maintained that " $7 + 5$ " is synonymous with '12' the way 'triangle' is by definition synonymous with 'closed rectilinear figure with three angles'; nor would it be plausible to hold that anybody who understands the expression 'the sum of seven and five' there by already knows the equation to be true, for undoubtedly he first had to learn by counting that seven and five add upto twelve. Similarly 'every event has a cause' is both *apriori* and synthetic at once. It is synthetic because the idea of cause is not contained and implicit in the idea of something that happens—which is known as event. This judgment is not only universal but also necessary and consequently cannot be derived from experience. So it is *apriori*.

To sum up, Kant replaces the positivist dichotomy of judgments into empirical and logically necessary by the trichotomy of (i) analytic *apriori* (ii) synthetic *aposteriori* and (iii) synthetic *apriori* judgments. In so far as metaphysical judgments are meaningful—they must fall within this third class.³

Kant made the discovery that there are judgments which are both *apriori* and synthetic, and that they are the presuppositions of science. To ask what are the conditions which have made science possible, we have only to ask how *apriori* synthetic judgments are possible in pure mathematics and physics and, then, to ask whether such judgments are possible in metaphysics. In the first case, they are not only possible, but actual and even indispensable, as Kant has shown, for the growth of mathematics and physics. The divisions of the 'Critique of Pure Reason' are related to these three questions respectively :

- (i) The Aesthetic is an attempt to answer the question about the possibility of mathematics as a science.
- (ii) The Analytic is an answer to the question about the possibility of physics or a pure science of Nature.
- (iii) The dialectic is concerned with the possibility of metaphysics as a natural disposition.

Kant is really concerned to show that analytic judgments, as the rationalists described them, give no increase in knowledge and synthetic *aposteriori* judgments, as the empiricists described them, give no universality and necessity; while he has discovered certain judgments which give both, i.e. the synthetic *apriori*. But he has accidentally discovered something of much more importance, i.e. the new type of judgment is the pattern of all judging. In all experience there is an *apriori* element. Judgment involves analysis as well as synthesis.⁴

To be more specific, the distinction between the empirical and the *apriori* is not a distinction between two kinds of synthesis or judgment, but between two elements inseparably involved in every judgment. Experience is transcendently conditioned. Judgment is in all cases the expression of a relation which implies an organised system of supporting propositions; and for the articulation of this system *apriori* factors are indispensably necessary.⁵ The *apriori* is not that which is absolutely independent of all experience but that which is independent of any particular experience.

In order to understand the merits of Kant's contribution to the solution of the prevalent controversy and thereby to the solution of the problem of knowledge, it is necessary to discuss briefly the views of those thinkers who differ from Kant on this issue. Let

us start with the analysis of J. S. Mill. Mill may safely be described as representing the extreme type of empiricism. Mill maintains that there is only one type of knowledge. And here he is opposed to those who believe in a dichotomy of necessary and empirical knowledge. In his opinion, no such dichotomy is tenable. Even the judgments of mathematics and logic are, according to Mill, only products of 'inductive generalizations based on an extremely large number of instances.'⁶ Mill holds that even the so-called necessary and certain truths are only factual in nature. The impossibility is only factual impossibility. The evidence in favour of necessary truths was so strong that it seemed incredible to us that a contrary instance should ever arise. We have always observed the same thing occurring repeatedly, nay, even our ancestors have experienced the same course of events. Thus the continuous repetition of the same facts generates the feeling of certainty. But the ground of our belief in necessity is, according to Mill, only inductive generalization which always leaves room for the possibility that events may take a different course from the one we have always experienced. That is to say, it is always possible in principle to meet the cases that go contrary to the established order of experience. It is possible in principle for such generalizations to be confuted. They were highly probable, but being inductive generalizations, they were not certain. According to Mill, the difference between the so-called necessary truths and contingent truths of natural sciences is a difference in degree and not in kind. The truths of mathematics and logic appear to be necessary because they have worked well in the past but workability is not the criterion of truth.

If Mill's view is correct, Kant's distinction of analytic and synthetic knowledge crumbles down. But it is to be noted that even contemporary empiricists are not prepared to follow Mill's approach. Professor A. J. Ayer in his book '*Language Truth and Logic*' has taken Kant's side on this issue and has attempted to refute Mill's views. In his opinion, Kant's doctrine that though all our knowledge begins with experience, it does not follow that it all arises out of experience, is fundamentally correct. Professor Ayer accuses Mill of confusing the question of validity with the question of genesis and development of the necessary truths of logic and mathematics. He maintains "that they are independent

of experience in the sense that they do not owe their validity to empirical verification."⁷ We may come to know the necessary truths of logic and mathematics through experience but once we have grasped them we know that they are true independently of the process of knowing. This point is sufficient to compel us, according to Professor Ayer, to make a distinction between judgments of facts and judgments of mathematics and logic. Not only the knowledge but even the validity of empirical truths is necessarily tied to sense-experience, while the validity of the necessary truths is independent of experience. Thus Professor Ayer accepts the necessity of distinguishing analytic propositions from synthetic ones.

But Professor Ayer accuses Kant for not giving a clearcut criterion for distinguishing between the analytic and synthetic propositions. He says that Kant has given two criteria instead of one. They are logical and psychological. When Kant says that the judgment "All bodies are extended", is analytic, he applies the logical criterion. This judgment is analytic because its denial amounts to a self-contradictory statement. But when he says that the judgment " $7 + 5$ " is equal to twelve, is a synthetic proposition, he applies the psychological and not the logical criterion. The judgment is synthetic in the opinion of Kant because the concept of twelve is not included in the concept of 'seven plus five'. But in the opinion of Professor Ayer, this judgment is analytic when the logical criterion is applied to it. That is to say, the judgment ' $7 + 5 = 12$ ' cannot be denied without involving us in a self-contradiction. If so it means any judgment can be proved to be both analytic and synthetic by applying different criteria. Kant's mistake, according to Professor Ayer, consists in the supposed identity of the logical and the psychological criteria. They are actually entirely different in nature and their identity should not be taken for granted. According to Professor Ayer, two terms can be synonymous even though the subjective intension of one is not comprised in the subjective intension of the other. The fact that the subjective intension of twelve is not comprised in the subjective intension of ' $7 + 5$ ' does not warrant us in saying that ' $7 + 5$ ' and ' 12 ' are not synonymous terms. Actually

speaking ' $7 + 5 = 12$ ' is true by virtue of the principle of contradiction alone. Professor Ayer recommends that we should adopt the logical criterion given by Kant and dispense with the psychological one.⁸

Professor Ayer's analysis is really enlightening but it should not prevent us from noticing the marked difference between Kant's conception of the principle of contradiction and that of contemporary logicians. While contemporary logicians including Professor Ayer base the principle of contradiction on the concept of synonymity, Kant explained it with some psychological elements. Professor Ayer's merit consists in making it explicit that Kant's logical criterion is tinged with some psychological elements. The principle of contradiction, as used by Kant, is narrower and restricted, because it involves the conception of subjective intension. The denial of the judgment ' $7 + 5 = 12$ ' is not self-contradictory in the same sense in which the denial of the judgment 'All bodies are extended' is, since the concept of body includes the concept of extension, but the concept of ' $7 + 5$ ' does not include the concept of ' 12 '. Moreover, the crux of the problem lies in the nature of mathematical judgments. Kant's firm belief was that mathematical judgments are intuitional in nature. This has been challenged by most of contemporary mathematicians. But it will be wrong to say that the controversy has been finally settled. The intuitionist school of mathematics represented by Brouwer still continues to favour the Kantian doctrine that mathematical judgments are not analytic.⁹ Thus Kant's opinion about the mathematical judgments represents an alternative which cannot be hastily set aside. Our conclusion is that Kant has given only one criterion and not two as Professor Ayer thinks. But his criterion is not strictly logical and is coloured by psychological considerations.

We maintain with Kant that there are synthetic *apriori* propositions. Let us see now what is their nature and in what sense they are necessary. Kant says that a synthetic *apriori* proposition is one which is both about the nature of reality and necessary. For example, the proposition 'every event has a cause' informs us about the behaviour of events and at the same time it is universally valid. In order to understand Kant's real meaning it is necessary to examine briefly Professor Ayer's views regarding necessary propositions. He maintains that only analytic

propositions can be necessary, while all synthetic propositions are *aposteriori*. That is to say, any proposition whose truth conditions are determined by empirical facts can only be probable and not certain. Since all synthetic propositions are tied to empirical facts, they cannot be necessary. Hence in his opinion, there is no possibility of synthetic *apriori* propositions. But he makes room for necessary propositions within the empiricist frame-work of knowledge as opposed to J. S. Mill who reduces all the propositions to the status of empirical generalizations. In the opinion of Professor Ayer, all analytic propositions are necessary and their validity is independent of experience. But they are true, says Professor Ayer, simply because they give us no information about the world of facts. They record simply our use of terms. They have nothing to do with experience. Thus only logical propositions are *apriori*. They express only formal truths. To quote his exact words, "It is to be noted that the propositions "Either ants are parasitic or none are" provides no information whatsoever about the behaviour of ants, or, indeed, about any matter of fact. And this applies to all analytic propositions. None of them provides any information about any matter of fact. In other words, they are entirely devoid of factual content. And it is for this reason that no experience can confute them."¹⁰ This account may suggest that analytic propositions, because they are devoid of any factual content, are senseless. Professor Ayer is aware of this objection and hastens to refute this charge by saying that, "when we say that analytic propositions are devoid of factual content, and consequently that they say nothing, we are not suggesting that they are senseless in the way that metaphysical utterances are senseless, for, although they give us no information about any empirical situation, they do enlighten us by illustrating the way in which we use certain symbols. We see that there is a sense in which analytic propositions do give us new knowledge. They call attention to linguistic usages, of which we might otherwise not be conscious, and they reveal unsuspected implications in our assertions and beliefs. But we can see also that there is a sense in which they may be said to add nothing to our knowledge. For they tell us only what we may be said to know already."¹¹

The aforementioned view of Professor Ayer has been shared by most of the contemporary logicians and philosophers. According

8. "I think that we can preserve the logical import of Kant's distinction between analytic and synthetic propositions, while avoiding the confusions which mar his actual account of it, if 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 facts of experience". A. J. Ayer, in Edwards Paul and Pap. Arthur : A Modern Introduction to Philosophy : Readings from classics and contemporary sources, P. 67. A similar view is also held by Mr. Arthur Pap. in his "An Introduction to the Philosophy of Science", P. 80.

9. S. Korner, Kant, Pp. 40, 41.

10. Edwards, Paul and Pap. Arthur : "A Modern Introduction to Philosophy" : Readings from classics and contemporary sources, P. 67.

11. *Ibid.*, Pp. 67, 68.

12. See Norman Malcolm : "Are necessary propositions really verbal?" *Mind*, 1940, Pp. 189-203 and also see "The Linguistic Theory of 'Apriori Proposition'" by A. C. Ewing; Pp. 147-169 of 'Clarity is not Enough' (Essays in Criticism of Linguistic Philosophy), Edited by H. D. Lewis, George Allen & Unwin, Ltd., London.

13. Reason and Experience—Oxford, 1947, P. 48.

14. Included in his book 'From a Logical Point of View', Cambridge: Harvard University Press, 1953.

15. Included in his 'Philosophical Papers' Edited by J. O. Urmson and G. J. Warnock, Oxford University Press, 1961.