Kant Lecture 3

THERE can be no doubt that all our knowledge begins with experience. For how should our faculty of knowledge be awakened into action did not objects affecting our senses partly of themselves produce representations, partly arouse the activity of our understanding to compare these representations, and, by combining or separating them, work up the raw material of the sensible impressions into that knowledge of objects which is entitled experience? In the order of time, therefore, we have no knowledge antecedent to experience, and with experience all our knowledge begins. But though all our knowledge begins with experience, it does not follow that it all arises out of experience.

.... For it may well be that even our empirical knowledge is made up of what we receive through impressions and of what our own faculty of knowledge (sensible impressions serving merely as the occasion) supplies from itself. If our faculty of knowledge makes any such addition, it may be that we are not in a position to distinguish it from the raw material, until with long practice of attention we have become skilled in separating it. This, then, is a question which at least calls for closer examination, and does not allow of any off-hand answer: -- whether there is any knowledge that is thus independent of experience and even of all impressions of the senses. Such knowledge is entitled a priori, and distinguished from the empirical, which has its sources a posteriori, that is, in experience. [p. 208 A1/B1]

Thus begins the “Introduction” to Kant’s Critique of Pure Reason. It begins with a “nod” to empiricism: there is no knowledge before experience. But though all knowledge “begins” with experience, it does not all “arise out” of experience. And herein lies the crux of Kant’s entire claim position: “empirical knowledge,” i.e., the knowledge we gain of things through sense experience, consists of more than what we “receive” from sense impressions, but contains also something that “our own faculty of knowledge” contributes from itself.

So, Kant is claiming that knowledge of objects requires sense experience. And with this, he breaks with all the Rationalist philosophers before him. Knowledge of objects requires sense experience. But this sense experience contains more than just the raw “impact” of the world upon our senses. It contains as well something that we “contribute.” This is the core of Kant’s claim (using my words here): our consciousness of the world is not “transparent” to its object. The conscious state that I have when I perceive an object is, of course, due, in part, to the nature of the object I perceive. But, and this is what is new with Kant, it is also due, in part, to the
nature of consciousness itself (to “Reason”). Contrary to what Berkeley believed, there is a world that exists independently of consciousness, a world that exists whether or not it is perceived. But the conscious state that I have when I perceive things in that world is only partially determined by the way that world is in itself. It is also partially determined by the way I am, by the necessary structure of consciousness itself. Examining the “contribution” the mind makes to how things appear to us will be the primary task of the Critique.

It is this “contribution” the mind makes to how things appear to us that explains how it is possible for us to have what Kant calls synthetic a priori knowledge. Let us look at how Kant defines these terms.

Kant tells us that, “Experience teaches us that a thing is so and so, but not that it cannot be otherwise.” This is a direct acknowledgement of Hume. By sense experience, I see that the pen falls when I release it. But sense experience does not “teach” me that it had to fall, that its falling was “necessitated” by my releasing, or that all unsupported objects will fall. Again, following Hume, Kant is recognizing that experience can never justify claims that one thing (or event) necessitates another, or that certain things (or events) always accompany one another.

Knowledge that can be justified by appeal to sense experience Kant calls a posteriori. (He also calls this empirical knowledge. “Empirical” and “a posteriori” are used as synonyms by Kant: knowledge that depends upon sense experience.) Kant has just acknowledge that we have no a posteriori knowledge of claims involving necessity or strict universality. So, any such claims, if we know them at all, must involve a priori knowledge. (Kant speaks here as though we have already established that we have lots of such knowledge. But that is not necessary for understanding his point. Sense experience cannot justify certain kinds of claims. So, if these claims can be justified, they must be justified in some other manner. If we know them at all, we could only know them a priori.) Necessity and strict universality, Kant claims, are certain indicators of a priori knowledge. (Again, assuming that we know any such claims at all.)

The distinction between a priori and a posteriori knowledge was commonplace prior to Kant. People disagreed about the extent and relative importance of each, but the terminology itself is nothing new. Hume used it as well. Hume claimed that a priori knowledge was limited to “relations of ideas.”
But Kant introduces a second pair of contrasting terms, that between “analytic” and “synthetic” statements. (Kant uses the word “judgments” for what we will call “statements.”) In an analytic statement, Kant tells us, “the predicate is contained in the subject,” while in a synthetic statement, this is not the case.

Now, there is a lot of discussion over time about this distinction between “analytic” and “synthetic” statements. It is no longer accepted that statements all have a “subject/predicate” structure. Logic has changed since Kant’s day, and so the terminology he uses needs to be “translated” if it is to be understood in a way that can be applied to all statements.

Consider an example of a statement where the predicate is contained in the subject: All bachelors are male. The predicate is contained in the subject in the sense that the word “bachelor” simply means “unmarried male.” So the statement really says that “All unmarried males are males.” And this is true, of course, because all males are males.

Now, consider the negation of this statement: It is false that all bachelors are male. This implies that some bachelor is not male, which it turn implies that there is something which is male and which is also not male. And that is a contradiction. This is true in every statement where the predicate is contained in the subject: the negation of such statements are logically contradictory. So, this is how I propose to understand what Kant means by “analytic”: a statement is analytic when its negation is logically contradictory. If its negation is not a logical contradiction, then the statement is synthetic.

With this, we can more clearly compare Kant and Hume. Hume said that all knowledge was of Relations of Ideas or Matters of Fact. Relations of Ideas, according to Hume, are knowable by reason alone, and their negations are contradictory. Using Kant’s vocabulary, Relations of Ideas are analytic statements that we can know a priori. Matters of fact are synthetic statements that we can know only a posteriori. So, Hume claimed that all knowledge was a posteriori knowledge of synthetic statements, or a priori knowledge of analytic statements. More to the point, Hume claimed that we could have a priori knowledge only of analytic statements, and never of synthetic statements. That is the crux of Hume’s empiricism: what we can know by reason alone is limited to logic. Knowledge of substantive facts about the world can only be justified by appeal to sense experience.
But Hume considered our knowledge of arithmetic and geometry to fall into the first category: Relations of Ideas. Hume grants that we know the truths of arithmetic and geometry by reason alone. So, he grants that we have \textit{a priori} knowledge of them. Kant agrees. What Kant denies is that such statements are analytic. Kant argues that such statements are synthetic. If Kant is right, then it is possible to have \textit{a priori} knowledge of synthetic statements, which Hume denied. The choice is thus either to deny that we have \textit{a priori} knowledge of arithmetic and geometry, or to accept that synthetic \textit{a priori} knowledge is possible.

Kant’s argument for the view that arithmetic and geometry are synthetic gets bogged down in his precise definition of analytic in terms of the predicate being contained in the subject. I think his reasoning is much less controversial if we understand it instead in terms of whether or not the negation of the basic claims of each discipline involves a logical contradiction.

Let us consider geometry first. Consider: a straight line is the shortest distance between any two points. Kant claims, “For my concept of straight contains nothing of quantity, but only of quality. The concept of the shortest is wholly an addition, and cannot be derived, through any process of analysis, from the concept of the straight line.” Thus, the predicate is not contained in the subject. This seems right: what I am “predicating” of a line, is something about it \textit{quantity}: that it is the shortest. But in the subject, all I say is something about the \textit{quality} of the line: that it is straight. “Short” is a different concept than “straight,” and is not contained in the \textit{definition} of “straight” the way “male” is part of the definition of “bachelor.”

Geometry, we know, begins with “postulates.” Euclid formulated his geometry starting with a number of such postulates that we could see to be “obviously” true. (One of these postulate is that “parallel lines never intersect.”) But none of these statements is analytic in the sense that the predicate is contained in the subject. The negations of the postulates do not imply logical contradictions. It was recognizing this fact that first led mathematicians to formulate non-Euclidean geometries. By the time of Einstein, people began to think that Euclidean geometry was actually mistaken as a description of the space in which we live. So, not only did people come to question the \textit{certainty} of Euclidean geometry, then actually came to question its \textit{truth}.

The point I am making is that there is no contradiction in denying the postulates of
geometry. All other geometrical claims follow deductively from these postulates, but none can be proven without these postulates. That is, the negation of a geometrical claim is not a logical contradiction. So, these claims are synthetic. If we know them independently of experience, then we have *a priori* knowledge of a synthetic statement.

But the same considerations apply to arithmetic. Kant claims that the *meaning* of “=12” is not contained in the meaning of “7+5.” I won’t try to persuade you of his reasoning. But what I can tell you is that, just like geometry, the truths of all arithmetical claims follow by deductive reasoning from a set of statements (axioms) that are seen to be “obviously” true, but whose negations are not contradictions. Parallel to the “postulates” of geometry, we now recognize that there are “axioms” of arithmetic. The truths of arithmetic follow from these axioms, but cannot be proven without assuming the truth of these axioms. Consequently, the negation of any arithmetical statement is not a logical contradiction.

So, if Kant is correct in this, we have *a priori* knowledge in both arithmetic and geometry, but the basic statements in these fields are not, as Hume thought, analytic. Consequently, in spite of Hume’s insistence that we could know by reasoning alone only those claims whose negations were contradictory, Kant has argued that, in at least some cases, we have *a priori* knowledge of synthetic statements.

But Hume’s rejection of knowledge of causal relations in the world stems from his rejection of synthetic *a priori* knowledge. If Kant has shown that we have some such knowledge, then perhaps we can find a way around Hume’s challenges to our knowledge of causality.

So, Kant argues, knowledge of arithmetic and geometry proves the reality of synthetic *a priori* knowledge. But Hume’s basic criticism still seems sound. So, if we want to “save” arithmetic and geometry, we have to explain how such knowledge is possible after all. And once we have done that, we will be able to show “natural science” is possible as well (which consists in knowledge of the laws of nature). (But we will not, in the end, be able to bring back metaphysics as understood before Kant.)

So the next and final topic is Kant’s explanation of our knowledge of arithmetic and geometry. He argues that we can have *a priori* knowledge of these only because time is nothing
but the necessary “form” of inner sense, and space nothing but the “form” of outer sense. We can know arithmetic and geometry, that is, because time and space are not part of the world that exists independently of our experience, but are the result of the “working up” of the raw materials of sensations that takes place within experience. They are not independently real, but features that consciousness contributes to how things necessarily appear to us. In Kant’s vocabulary, time and space are *empirically real*, but nevertheless *transcendently ideal*. And that is the topic for our next and final discussion of Kant.