

as the necessary ground of possibility, Kant then proceeds to derive traditional predicates of God such as uniqueness, simplicity, immutability, and indeed even the claim that the necessary being is a mind.⁴¹

The introduction of God as the ground of all possibility must have seemed to Kant logically sounder than the ontological argument and theologically more orthodox than the Leibnizian conception, on which the power of God in the creation of the universe is constrained by the antecedent existence of determinate possible worlds. But in the *Critique of Pure Reason* Kant was ultimately to reject this argument as well as the three traditional ones, and to argue that both the existence and predicates of God could only be demonstrated on moral grounds, as practical beliefs rather than theoretical dogmas (A810–16/B838–44; A828–9/B856–7). Nevertheless, the underlying idea of Kant's argument, that a genuine or "real possibility" is not established just by demonstrating that a concept is free from contradiction but must have some sort of affirmative ground in actual existence, was remarkably deep-seated in Kant's thought, and would manifest itself again not just in the structure of Kant's theoretical philosophy but at crucial points in his practical philosophy as well.

The second main section of the *Only Possible Basis* shows Kant's early concern to find a proper characterization of scientific laws of nature, and reveals that Kant's complex view of teleology, or final causes, which seems to be a late accretion to the *Critique of Pure Reason*, touched on only in the appendix to the "Transcendental Dialectic" (A642–704/B670–732) and fully developed only in the *Critique of Judgment*, was actually a longstanding part of his thought. Against the background of the debate between occasionalism and preestablished harmony, Kant argues that God's purposes for the world would be expressed through unchanging natural laws valid throughout its entire history, and not through any miraculous episodic interventions: "Where nature operates in accordance with necessary laws, there will be no need for God to correct the course of events by direct intervention; for, in virtue of the necessity of the effects that occur in accordance with the order of nature, that which is displeasing to God cannot occur."⁴² Thus Kant argues "That in the procedure of purified philosophy there prevails a rule which, even if it is not formally stated, is nonetheless always observed in practice . . . that in investigating the causes of certain effects one must pay careful attention to maintaining the unity of nature as far as possible."⁴³

Here Kant defined an ideal of human knowledge that was to be central to the *Critique of Pure Reason* and all of his subsequent works, even as its theological foundation in a conception of God became ever more attenuated. To have knowledge of the events of an objective world beyond one's own consciousness is to subsume those events under causal laws, and to have knowledge of causal laws is to conceive of those laws

as themselves part of a system of laws that, if not actually created by God, can nevertheless only be conceived by us as if they had been created by an intelligence like but more powerful than ours.⁴⁴ Though Kant did not yet see how much effort this would involve, his task in the *Critique of Pure Reason* and subsequent works would be precisely to show that knowledge of the “unity of nature” or of constant laws of nature is the necessary condition of the unity of our own experience, and to explain how knowledge of such laws of nature itself is possible.

Kant’s thought about the problem of causal laws would be advanced further in the last of the four key works of 1762–63, the essay on *Negative Magnitudes*. But before we turn to that, we will consider the different steps in the direction of the *Critique* that Kant took in the third of these works, the *Inquiry concerning the Distinctness of the Principles of Natural Theology and Morality*. Kant wrote this work in the late fall of 1762 and submitted it to the Academy of Sciences in Berlin by 1 January 1763, the deadline for the Academy’s competition on the question of whether metaphysics, conceived to include natural theology and ethics, had the same prospects for certitude as mathematics and could use the same method. The Academy, still dominated by Wolffians, preferred Moses Mendelssohn’s elegant restatement of the fundamental tenets of Wolffianism for the first prize, but recognized the merits of Kant’s essay with an honorable mention and publication along with Mendelssohn’s essay (which did not take place until 1764).

In the rationalist tradition, Mendelssohn argued for the similarity of the methods of mathematics and philosophy – although with a twist, the suggestion that the certitude of metaphysics is even greater than that of mathematics. In an account of the epistemology of mathematics that would still be acceptable to many philosophers, he argued that the *proof* of mathematical theorems from their premises depends solely on the application of logical principles to mathematical concepts, but that the *truth* of mathematical propositions is an empirical matter, depending upon the incontestable but still observational fact that the basic concepts of our mathematics fit our experience. Mendelssohn then held that metaphysical argumentation proceeds for the most part along the same lines as mathematical proof, with the one difference that in two key cases the connection of the formal system of proof to reality does not have to be made empirically but is also secured on purely conceptual grounds. These two cases are the metaphysics of the soul (what Kant would later label “rational psychology”) where the Cartesian *cogito* proves the existence of the soul in a non-empirical way, and the metaphysics of God (or “rational theology”), where Mendelssohn accepted the ontological argument as proving the existence of God from the mere concept of God. Since in these two paradigmatic parts of philosophy existence claims could be proved without recourse even to the

most secure observation, Mendelssohn judged philosophy to have the potential for even greater certainty than mathematics.⁴⁵

Although he wrote without prior knowledge of Mendelssohn's essay, Kant was of course familiar with the Wolffian background on which Mendelssohn was drawing, and in criticizing the methodological assumptions of Wolffianism more firmly than he had ever done before, Kant wrote an essay diametrically opposed to that of his competitor. This essay takes major steps toward the position of the *Critique of Pure Reason*, although crucial differences still remain. Kant's most radical departure from prevailing orthodoxy and his biggest step toward the *Critique* comes in his account of mathematical certainty. Instead of holding that mathematics proceeds by the two-front process of analyzing concepts on the one hand and confirming the results of those analyses by comparison with our experience on the other hand, Kant argues that in mathematics definitions of concepts, no matter how similar they may seem to those current in ordinary use, are artificially constructed by a process which he for the first time calls "synthesis," and that mathematical thinking gives itself objects "*in concreto*" for these definitions, or *constructs* objects for its own concepts from their definitions. Thus, whatever exactly the concept of a cone might signify in ordinary discourse, in mathematics the concept of a cone "is the product of the arbitrary representation of a right-angled triangle which is rotated on one of its sides."⁴⁶ Thus, we can have certain knowledge of the definition because we ourselves construct it; and we can have certain knowledge that the definition correctly applies to its objects because the true objects of mathematics are nothing but objects constructed, however that may be, in accordance with the definitions that we ourselves have constructed.

In philosophy, however, things are quite different. Philosophy does not begin from self-constructed and well-defined definitions, but from concepts, which are already given but are also given in a confused manner. Complete definitions of philosophical concepts come, if they come at all, at the end of philosophical inquiry. In fact, Kant insists, the goal of defining concepts – so central to the academic philosophy of the time – is not the goal of philosophy at all. Instead, Kant compares the proper method for philosophy to what he takes to be the method "introduced by Newton into natural science": obtaining certainty not about complete definitions but about "those characteristic marks that are certainly to be found in the concept of any general property" and can lead to "judgments about the object that are true and completely certain." The certainty of such judgments has to be grounded in something other than definitions, in the case of metaphysics in "an immediate and self-evident inner consciousness."⁴⁷ Such sources of evidence then have to be carefully analyzed for their implications, so while

“geometers acquire their concepts by means of *synthesis* . . . Philosophers can acquire their concepts only by means of *analysis* – and that completely changes the method of thought.”⁴⁸ Further, while from the definitions introduced into mathematics determinate objects can be constructed, this is not the case in philosophy, where the objects of knowledge are not our own constructs, and where our concepts give us only abstract and indeterminate knowledge of objects rather than determinate and concrete objects themselves. Thus “in mathematics, the object is considered under sensible signs *in concreto*, whereas in philosophy the object is only ever considered in universal abstracted concepts.”⁴⁹ So mathematical knowledge is certain because it is grounded on definitions of our own construction and fully determinate because concrete objects can be constructed from those definitions, whereas philosophical knowledge is less certain because it is dependent on the analysis of given concepts and less determinate because it yields only general judgments about objects.

Kant illustrates the differences between mathematical and philosophical method with three examples. First, following Crusius, he argues that metaphysics depends not only on two distinct formal or logical principles (as Kant had already argued in 1755), but also on many “first material principles of human reason” that are “indemonstrable,” such as “*a body is compound*.”⁵⁰ Second, he reiterates his argument of the *Only Possible Basis* that from the argument for the existence of God as the ground of all possibility other predicates of God can be derived – this is supposed to show how from a certain though incomplete consciousness of some of a thing’s characteristics other certain judgments can be derived – but also adds that in further judgments, about God’s justice and goodness, only an “approximation to certainty” is possible.⁵¹ Finally, about morality Kant argues that although we may easily be able to identify some *formal* principles of obligation, such as “I ought to advance the total greatest perfection,” such principles are useless without *material* principles of obligation, which tell us what the extension of an abstract concept like perfection actually is – what courses of action actually contribute to perfection – and such material principles are themselves indemonstrable.⁵²

Kant is here clearly working his way toward several of the central ideas of the *Critique of Pure Reason*. Although he does not yet speak of analytic or synthetic *judgments*, his distinction between analytic and synthetic *methods* is leading in that direction: whereas traditionally this contrast between methods was merely a contrast between direction in causal or syllogistic inference,⁵³ for Kant the difference has become one between constructing concepts or their definitions (the synthetic method) and unpacking concepts to get to definitions (the analytical method). This will lead to the distinction between judgments that con-

struct fuller concepts by amplifying what is given (synthetic judgments) and those that merely explicate given concepts by showing what predicates they already contain (analytic judgments) (see A 6–7/B 10–11). Further, Kant's argument that both metaphysics and morality depend upon indemonstrable material principles, and not just formal or logical principles, is clearly preparing the way for the fundamental tenet of his mature theoretical and practical philosophy that the basic propositions of both are synthetic yet *a priori* judgments. But Kant's conception of philosophical method in the *Inquiry* has not yet caught up to this recognition: he is at a loss to explain how we know these "indemonstrable" principles when the method of philosophy is still considered to be analytic, rather than synthetic like the method of mathematics. Before Kant's mature work could be written, he would have to discover a philosophical method that could yield "material" or synthetic judgments. This would be the philosophical work of the 1770s that would finally pave the way for the *Critique of Pure Reason*.

Once Kant takes this further step, however, the contrast between mathematics and philosophy provided in the *Inquiry* will have to be revised. The difference between mathematics and philosophy will no longer simply be that the former uses the synthetic method and the latter the analytical method. On Kant's mature account, both mathematics and philosophy must use a synthetic method. This does not mean that the account of the *Inquiry* will be completely surrendered, but rather that the difference between the concrete constructions of mathematics and the abstract results of philosophy will have to be recast as a difference *within* the synthetic method: The use of the synthetic method in mathematics will yield synthetic yet certain results about *determinate objects*, whereas the use of the synthetic method in philosophy will yield synthetic yet certain *principles for the experience of objects*, or what Kant will call "schemata" of the pure concepts of the understanding, "the true and sole conditions for providing [these concepts] with a relation to objects" (A 146/B 185). Thus the *Inquiry* already contains key aspects of Kant's mature theory of mathematics, but does not yet see that both mathematics and philosophy must use synthetic methods. Once Kant sees this, however, then the *Inquiry's* distinction between the concrete results of mathematics and the abstract results of philosophy can be retained as the difference between the construction of determinate mathematical objects and the construction of philosophical principles for the possibility of the experience of objects in general.⁵⁴

The last of the essays of 1762–63, the *Attempt to Introduce the Concept of Negative Magnitudes into Philosophy*, focuses on a substantive rather than a methodological issue. Kant considers a variety of relationships that must be construed as real opposition rather than logical contradiction: positive and negative numbers, motion in opposite directions,