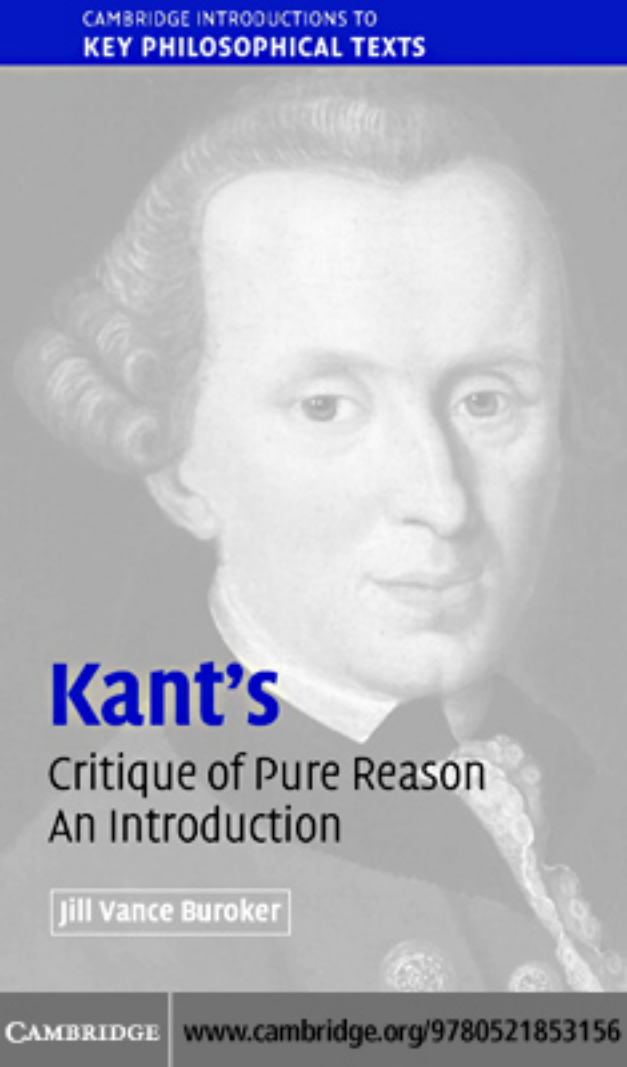


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A faded, grayscale portrait of Immanuel Kant serves as the background for the cover. He is shown from the chest up, wearing a dark coat and a white cravat. His hair is styled in a powdered wig with large, curled sideburns. He has a serious expression and is looking slightly to the right of the viewer.

Kant's

Critique of Pure Reason An Introduction

Jill Vance Buroker

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KANT'S *CRITIQUE OF* *PURE REASON*

In this new introduction to Kant's *Critique of Pure Reason*, Jill Vance Buroker explains the role of this first *Critique* in Kant's critical project and offers a line-by-line reading of the major arguments in the text. She situates Kant's views in relation both to his predecessors and to contemporary debates, and she explains his critical philosophy as a response to the failure of rationalism and the challenge of skepticism. Paying special attention to Kant's notoriously difficult vocabulary, she explains the strengths and weaknesses of his arguments, while leaving the final assessment up to the reader. Intended to be read alongside the *Critique*, this guide is accessible to readers with little background in the history of philosophy, but should also be a valuable resource for more advanced students.

JILL VANCE BUROKER is Professor of Philosophy at California State University. Her publications include *Antoine Arnauld and Pierre Nicole: Logic or the Art of Thinking* (1996).

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KANT'S *CRITIQUE OF PURE REASON*

An Introduction

JILL VANCE BUROKER

California State University, San Bernardino



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For Sophie

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Abbreviations

<i>CPR</i>	Kant, <i>Critique of Pure Reason</i>
<i>MFNS</i>	Kant, <i>Metaphysical Foundations of Natural Science</i>
NST	non-spatial and non-temporal (non-spatiotemporality thesis)
PD	Principle of Determinability
<i>Prolegomena</i>	Kant, <i>Prolegomena to Any Future Metaphysics</i>
PTD	Principle of Thoroughgoing Determinability
t.u.a.	transcendental unity of apperception
UT	unknowability thesis

CHAPTER I

Introduction to the critical project

I. KANT'S LIFE AND WORKS

Immanuel Kant was one of the greatest thinkers in the history of philosophy. Unfortunately, he was not a good writer, and his works are very difficult to read. Not only did Kant write on most major philosophical problems – concerning knowledge, metaphysics, ethics, aesthetics, religion, law, and government – he also developed views of extreme depth and subtlety. Especially impressive is the way Kant unified his theories into a larger system, called an “architectonic.” Although he sometimes appears to stretch his ideas to fit them into his system, generally the unity in his views is not forced, and rests on philosophical principles.

Kant lived from 1724 to 1804, during a period of enormous change in science, philosophy, and mathematics. Kant himself was neither a scientist nor a mathematician (although he did make a contribution to cosmology). Nonetheless he shared the hopes of predecessors such as Descartes and Locke to provide a philosophical foundation for the new physics. The scientific revolution, initiated by Copernicus's *On the Revolutions of the Heavenly Spheres* in 1543, put an end to the Aristotelian worldview that had reigned for almost 2000 years. The French philosopher René Descartes (1596–1650), a contemporary of Galileo (1564–1642), was the first to attempt a systematic theory of knowledge to support the Copernican astronomy. Descartes not only invented analytic geometry, he also developed his own physics and made important discoveries in optics, among them the sine law of refraction. The power of mechanistic science became undeniable with Isaac Newton's formulation of the three laws of motion and the law of gravitation, published in his *Principia Mathematica* of

1686. In providing a general explanation for Kepler's laws of planetary motion, Newton's achievement brought to the fore questions about the foundations of science. The new physics also depended on the calculus, invented independently by Newton and Leibniz.

Immanuel Kant was born April 22, 1724, in Königsberg, the capital of East Prussia (now Kaliningrad in Russia).¹ He lived his entire life in or near Königsberg, a thriving commercial city. His father was a saddler, and Kant grew up in a working class family. Between the ages of eight and sixteen, Kant attended the Friedrichskollegium, whose principal was Albert Schultz (1692–1763). Schultz had been a student of the Enlightenment philosopher Christian Wolff (1679–1754), himself a student of the great philosopher and mathematician Gottfried Wilhelm Leibniz (1646–1716). The Friedrichskollegium was affiliated with Pietism, a seventeenth-century German Protestant movement. It emphasized the “scrutiny of the heart,” and valued the active devotion of the person. Kant rejected its more rigid practices, but evidently admired its general principles. The school's curriculum emphasized religious instruction in Hebrew and Greek; non-religious subjects were less important. In 1737, when Kant was thirteen, his mother died. He was very close to her, and credited her with nurturing both his spirit and his intellect. In 1740 Kant graduated second in his class from the Friedrichskollegium, and entered the University of Königsberg. There he was influenced by another student of Wolff, Martin Knutzen (1713–51), a professor of logic and metaphysics. Under Knutzen's tutelage from 1740 to 1746, Kant studied philosophy, mathematics, natural sciences, and classical Latin literature.

Following his father's death in 1746, Kant left the university to support himself as a private tutor. In 1747 he completed his first work, *Thoughts on the True Estimation of Living Forces* (published in 1749), in which he attempted to resolve a dispute between Leibnizians and Cartesians over the formula for calculating force from mass and velocity. Unfortunately Kant was ignorant of the correct solution, proposed by d'Alembert in 1743. Nevertheless, this work, written in German rather than the traditional Latin, marked the beginnings

¹ Two excellent biographies are available in Ernst Cassirer's *Kant's Life and Thought*, and Manfred Kuehn's recent *Kant: A Biography*.

of Kant's lifelong interest in the foundations of physics. During the 1750s he produced several scientific treatises, the most important his *Universal Natural History and Theory of the Heavens* (1755). His theory of the formation of galaxies, later dubbed the "Kant-Laplace hypothesis," had a significant influence on astronomy. In the same year Kant completed his doctoral dissertation *Meditations in which the Ether is Succinctly Delineated*, and his "habilitation" treatise *A New Elucidation of the First Principles of Metaphysical Cognition*. The latter work marks his earliest criticism of Leibnizian philosophy.

Although Kant began lecturing at the University of Königsberg in the fall of 1755, he was practically destitute, depending on fees from tutoring and lectures. After several unsuccessful applications for professorships in logic and metaphysics, he received his first salaried position in 1766 as assistant librarian at the palace library. Not until 1770, at the age of forty-six, was Kant awarded the professorship he desired. His workload was formidable: he taught logic, mathematics, metaphysics, physical geography, and foundations of natural science. Eventually he added ethics, mechanics, theoretical physics, geometry, and trigonometry. Despite the stereotype of Kant as rigidly intellectual (and punctual), he was a great favorite both in and out of the classroom. His lectures were renowned for erudition and wit. But he was also quite sociable, sharing long dinners with friends and frequenting the theater and casinos. He was highly prized for his sparkling conversation in the most fashionable salons. This passage from a student, the poet and philosopher Johann Gottfried Herder, should put to rest the misleading stereotype:

I have had the good fortune to know a philosopher. He was my teacher. In his prime he had the happy sprightliness of a youth; he continued to have it, I believe, even as a very old man. His broad forehead, built for thinking, was the seat of an imperturbable cheerfulness and joy. Speech, the richest in thought, flowed from his lips. Playfulness, wit, and humor were at his command. His lectures were the most entertaining talks. His mind, which examined Leibniz, Wolff, Baumgarten, Crusius, and Hume, and investigated the laws of nature of Newton, Kepler, and the physicists, comprehended equally the newest works of Rousseau . . . and the latest discoveries in science. He weighed them all, and always came back to the unbiased knowledge of nature and to the moral worth of man. . . . No

cabal, no sect, no prejudice, no desire for fame could ever tempt him in the slightest away from broadening and illuminating the truth. He incited and gently forced others to think for themselves; despotism was foreign to his mind. This man, whom I name with the greatest gratitude and respect, was Immanuel Kant.²

Until the 1760s Kant was a devotee of Leibniz through the teachings of Christian Wolff. In 1768 he published the short treatise *On the Differentiation of Directions in Space*, in which he used the argument from incongruent counterparts (objects like left and right hands) to support a Newtonian theory of absolute space against Leibniz's theory of relational space. I argue in my *Space and Incongruence: The Origin of Kant's Idealism* that after 1768 Kant developed the incongruent counterparts argument to reject Leibniz's theory of the relation between the sensibility and the intellect, and ultimately to support the transcendental ideality of space and time. His introduction to Hume's *Enquiry Concerning Human Understanding* (published in 1748), probably around 1769, crystallized his misgivings about rationalism and dogmatic metaphysics. Kant took his first step toward the critical philosophy, the theory presented in his three *Critiques*, in his Inaugural Dissertation of 1770, *On the Form and Principles of the Sensible and Intelligible World*. Here he radically distinguished the sensibility from the intellect, arguing that the former provides knowledge only of phenomenal appearances. Nevertheless, he retained Leibniz's view that the intellect has access to noumena, the reality behind the appearances.

In his February 21, 1772 letter to Marcus Herz, a former student and friend, Kant lays out the questions haunting him since the dissertation, which define the critical project:

In my dissertation I was content to explain the nature of intellectual representations in a merely negative way, namely, to state that they were not modifications of the soul brought about by the object. However, I silently passed over the further question of how a representation that refers to an object without being in any way affected by it can be possible.³

Kant had come to see that he needed a more systematic treatment of the intellect, in both its theoretical and practical activities. In the letter Kant outlines a plan for his work, remarking optimistically that he expects to complete the first part, on metaphysics, in three months.

² Quoted in Cassirer, *Kant's Life and Thought*, 84.

³ *Correspondence*, 133.

In fact he did not produce the first edition of the *Critique of Pure Reason* until 1781, almost twelve years after conceiving the project. Unfortunately the work initially drew negative responses, both for its obscurity and its conclusions. Eventually opinion shifted, and the *Critique* began to exert its influence in Germany and elsewhere. In 1786 Kant was made a member of the Berlin Academy of Sciences; in 1794 he was inducted into the Petersburg Academy, and in 1798 into the Siena Academy.

Once engrossed in developing his critical philosophy, Kant became a recluse. This is the only explanation for his enormous output from 1781 to his death in 1804. These are the major works in that period:

- 1781 *The Critique of Pure Reason*, first edition (referred to as A)
- 1783 *The Prolegomena to Any Future Metaphysics* (an obscure summary of the *Critique*)
- 1785 *The Groundwork of the Metaphysics of Morals*
- 1786 *The Metaphysical Foundations of Natural Science*
- 1787 *The Critique of Pure Reason*, second edition (referred to as B)
- 1788 *The Critique of Practical Reason*
- 1790 *The Critique of the Power of Judgment*
- 1797 *The Metaphysics of Morals*
- 1798 *Anthropology from a Pragmatic Point of View*

During this period Kant also wrote many shorter essays, among them “The Idea for a Universal History with Cosmopolitan Intent” and “What is Enlightenment?” (both 1784), *Religion Within the Bounds of Reason Alone* (1793), *On Eternal Peace* (1795), and *The Conflict of the Faculties* (1798).

His publication of the 1793 treatise on religion brought him into conflict with a religious edict issued in 1788 by Frederick William II (1786–97). Under Frederick William I (1713–40) and Frederick II, the Great (1740–86), Prussia had been transformed from an authoritarian state to a constitutional monarchy. Also known for religious tolerance, it welcomed refugees from other countries, including Huguenots from France, Catholics from Eastern Europe, and Jews. Despite these progressive developments, the edict of 1788 put an end to religious liberalism. Although the theology faculty of the University of Königsberg declared that Kant’s treatise was not an essay in theology, the king opposed its publication. During this affair, in June of 1794, Kant

published his second treatise on religion, the ironic *The End of All Things*. In October of 1794 Frederick William II ordered Kant to desist from such writing. Although Kant defended himself against the charges, he agreed to renounce further essays on religion as long as the king lived.

Kant's last project, published as the *Opus Postumum*, was intended as a bridge between the critical philosophy and empirical science. Although he began the work in 1796, he was not to complete it. On October 8, 1803, he became seriously ill for the first time. He died four months later, on February 12, 1804. Thousands of mourners attended his funeral procession on February 28. They took Kant's body to the professors' crypt in the cathedral and university chapel of Königsberg. A plaque later installed over the grave contains the famous quotation from the *Critique of Practical Reason*: "Two things fill the mind with ever new and increasing admiration and awe, the more often and more steadily we reflect on them: *the starry heavens above me and the moral law within me.*"⁴

2. THE CRITICAL PROJECT

Kant's critical philosophy attempts to show that human reason can attain objective truths about the nature of reality as well as morality. Both types of knowledge are based on laws that are necessary but known *a priori*, that is, independent of experience. Theoretical knowledge is based on laws of nature, and moral knowledge on the moral law. Neither rationalism nor empiricism explains how we have such knowledge because both schools give mistaken analyses of the human mind. Empiricists favor sense perception over the intellect, and effectively deny the possibility of *a priori* knowledge. Rationalists recognize *a priori* knowledge, but have no coherent account of its relation to experience. Kant originally intended the first *Critique* to provide a philosophical justification for both theoretical and moral knowledge. Recognizing after 1781 that morality required a distinct foundation, Kant published the *Groundwork of the Metaphysics of Morals* in 1785 and the *Critique of Practical Reason* in 1788. In the *Critique of the Power of Judgment* of 1790 Kant broadens his project to

⁴ *Practical Philosophy*, 269.

include an analysis of teleological judgment at the basis of aesthetics and empirical science. Although the three *Critiques* are the foundation of Kant's critical philosophy, the other works listed above on morality and science expand his analysis of theoretical and practical reason. In this section I will focus on the problems defining Kant's critical theory of knowledge in the first *Critique*.

It is not misleading to view Kant's critical philosophy as responding to the defects of rationalism and empiricism. The rationalists of the modern period include Descartes, Baruch Spinoza (1632–77), and Leibniz. In general they argue that knowledge derives from the intellect, which may be aided or hindered by sense perception. Although these philosophers differ on how the senses relate to the intellect, they agree that the intellect alone can grasp truths about reality, through innate ideas, prior to all sense experience. Descartes undoubtedly provides the most famous arguments along these lines in his *cogito* argument for his existence and his proofs for the existence of God. Although the senses can contribute to physical science, Descartes thinks sense perceptions are more likely to interfere with intellectual intuition. Leibniz conceives the relation between the senses and the intellect differently, taking sensory experience as a confused form of thinking. Although he agrees that knowledge of noumena, or things in themselves, is innate, depending entirely on the intellect, he holds that there is a correspondence between noumenal reality and phenomenal appearances. His *Monadology* (1714) is a paradigmatic rationalist attempt to base metaphysics on logical principles of identity and non-contradiction.

In contrast to the rationalists' optimism about the power of reason, the British empiricists of the modern period – John Locke (1632–1704), George Berkeley (1685–1753), and David Hume (1711–76) – emphasize the role of the senses. "Empiricism" is derived from the Greek word for experience; on their view all ideas originate in sense perception and reflection on our own minds. The intellect alone cannot know reality; at best it can operate on ideas given through the senses by such processes as association, comparison, abstraction, and deduction. In his *Essay Concerning Human Understanding* (1689), Locke argues, like Aristotle, that the mind is a *tabula rasa* or blank slate at birth; all mental processes begin with sensory stimulation, and the mind contains no innate ideas. Despite his empiricism, Locke accepts

many of Descartes's metaphysical beliefs, such as the existence of God, bodies, and causal connections. Although he thinks knowledge of reality can never be certain, Locke does not question our capacity to acquire scientific knowledge, however fallible.

It is a paradox of empiricism that a commonsense theory of knowledge leads ultimately to a profound skepticism. Berkeley takes the first steps by arguing that belief in a mind-independent material world is not only unjustifiable but incoherent. Thus he rejects Descartes's substance dualism in favor of metaphysical idealism – the view that all reality consists of minds and their mental states. In his *Principles of Human Knowledge* (1710) and *Three Dialogues Between Hylas and Philonous* (1713), Berkeley rejects the existence of matter. Nevertheless, he retains Descartes's beliefs in the existence of God and minds as mental substances.

Hume, of course, argues for the most sweeping skepticism. In his *Treatise of Human Nature* (1739), Hume argues against knowledge of reality outside one's perceptions, including minds, bodies, and God. Against the rationalists, Hume makes devastating criticisms of the capacity of "reason" as a purely intellectual faculty. In place of a philosophical justification of metaphysics, he offers a psychological account of its origins. Appealing to "reason" in a broad sense, including the functions of the imagination, Hume claims that metaphysical beliefs are "natural," even if not strictly justified. Although his contemporaries failed to appreciate Hume's brilliance, he effectively put an end to rationalist metaphysics.

As we saw above, Kant was raised a Leibnizian, taught by students of Wolff. Nevertheless, in the 1760s he recognized the power of Hume's attack on metaphysics. As he explains in the *Prolegomena to Any Future Metaphysics*: "I openly confess that my remembering David Hume was the very thing which many years ago first interrupted my dogmatic slumber and gave my investigations in the field of speculative philosophy a quite new direction."⁵ Kant was less impressed, however, by Hume's psychological account of metaphysical belief. So by 1769, Kant embarked on the first steps of his critical project.

Kant intends to defend metaphysics and scientific knowledge by providing an accurate analysis of human reason. His theory is based

⁵ *Theoretical Philosophy after 1781*, 57.

on his discovery of synthetic *a priori* knowledge, judgments that are both informative and necessary. The problem is to explain how such judgments arise, as well as to give an account of their truth. Agreeing with Hume that experience cannot be their source, Kant takes the “critical turn,” locating such knowledge in the subject. But equally unhappy with rationalism’s appeal to innate principles, Kant must offer a new theory of the mental faculties. The key is his view that human reason, both theoretical and practical, produces synthetic *a priori* principles in the course of its natural activities. The *Critique of Pure Reason* argues that the necessary mathematical and metaphysical principles underlying all theoretical knowledge originate in the pure forms of sensibility and the intellect.

From Kant’s point of view, all thought before him is pre-critical: he was the first to offer a systematic, functional justification of pure concepts and principles. To do this, Kant invents a new type of argument, which he calls a “transcendental deduction.” His strategy is to show that a certain type of experience has particular necessary conditions. Thus anyone who accepts the “fact of experience” must agree that its transcendental conditions or presuppositions are true. All previous philosophers assumed that there were only two alternatives: either accept some substantive beliefs dogmatically as self-evident, or fall into an infinite regress of justification. One hallmark of Kant’s brilliance is the way his critical method sidesteps this dilemma, by exploiting assumptions necessary to frame the skeptical challenge.

Kant’s view that synthetic *a priori* knowledge originates in the subjective capacities of the knower results in transcendental idealism. This is the position that all theoretical knowledge is only of appearances, and that things in themselves are unknowable. Despite its radical nature, Kant’s idealism offers solutions to two skeptical challenges. First, while it sets clear limits to metaphysics and empirical science, it explains how humans can attain knowledge of the spatial-temporal world. Second, it provides the basis for claiming that knowledge of a world governed by causal necessities is compatible with the practical freedom required by the moral law. These interwoven strands of the critical philosophy – the analysis of human reason, the justification of synthetic *a priori* knowledge, and transcendental idealism – will serve as main themes in this guide.

3. THE STRUCTURE OF THE *CRITIQUE OF PURE REASON*

As mentioned above, Kant's philosophy is noteworthy for its systematic nature. The *Critique of Pure Reason* is organized around several fundamental distinctions. After the two Prefaces (the A edition Preface of 1781 and the B edition Preface of 1787) and the Introduction, the text is divided into the Doctrine of Elements and the Doctrine of Method. The first part explains the *a priori* contributions of the mind to experience, and the legitimate and illegitimate use of these representations. Kant further divides the Doctrine of Elements into the Transcendental Aesthetic and the Transcendental Logic, reflecting his basic distinction between the sensibility and the intellect. In the Transcendental Aesthetic he argues that space and time are pure forms of intuition inherent in our sensory capacities, accounting for the *a priori* principles of mathematics. The Transcendental Logic is divided into the Transcendental Analytic and the Transcendental Dialectic. The former defends the legitimate uses of the *a priori* concepts, the categories, and their correlative principles of the understanding, in attaining metaphysical knowledge. The section titled the Metaphysical Deduction explains the origin of the categories; in the Transcendental Deduction, Kant makes the central argument justifying their application to experience. Following this, the Analytic of Principles contains detailed arguments for the metaphysical principles correlated with the categories. This section begins with the Schematism, which explains how the imagination functions in applying pure concepts to the sensible data given in intuition. Then follow the detailed arguments for the *a priori* principles correlated with the schematized categories. The last part of the Doctrine of Elements, the Transcendental Dialectic, explains the transcendental illusion that motivates the misuse of these principles beyond experience. Kant's most significant arguments are the Paralogisms of Pure Reason, the Antinomy of Pure Reason, and the Ideal of Pure Reason, aimed against, respectively, traditional theories of the soul, the universe as a whole, and the existence of God. In the Appendix to the Critique of Speculative Theology Kant explains the positive role of the transcendental ideas of reason. The Doctrine of Method, which takes up no more than a sixth of the text, contains four sections, of

which the first two are most significant. The Discipline of Pure Reason contrasts mathematical and philosophical methods of proof, and the Canon of Pure Reason outlines the relation between theoretical and practical reason, in preparation for the critical moral philosophy. Here is an outline of the text, listing the main discussions:

1. First and second Prefaces
2. Introduction
3. Doctrine of Elements
 - A. Transcendental Aesthetic
 - B. Transcendental Logic
 - (1) Transcendental Analytic
 - a. Analytic of Concepts
 - i. Metaphysical Deduction
 - ii. Transcendental Deduction
 - b. Analytic of Principles
 - i. Schematism (bridging chapter)
 - ii. System of Principles of Pure Understanding
 - a. Axioms of Intuition
 - b. Anticipations of Perception
 - c. Analogies of Experience
 - d. Postulates of Empirical Thought (Refutation of Idealism)
 - iii. Ground of Distinction of Objects into *Phenomena* and *Noumena*
 - iv. Appendix on the Amphiboly of the Concepts of Reflection
 - (2) Transcendental Dialectic: Transcendental Illusion
 - a. Paralogisms of Pure Reason
 - b. Antinomy of Pure Reason
 - c. Ideal of Pure Reason
 - d. Appendix to Critique of Speculative Theology
 4. Transcendental Doctrine of Method
 - A. Discipline of Pure Reason
 - B. Canon of Pure Reason
 - C. Architectonic of Pure Reason
 - D. History of Pure Reason

4. THE SECOND (B) EDITION VERSION

The first important review of the *Critique* appeared in the January 19, 1782, edition of the *Göttingischen Anzeigen von gelehrten Sachen*. The review was originally based on a sympathetic exposition of Kant's arguments by Christian Garve (1742–98), a moral philosopher. The published version, however, rewritten by J. G. H. Feder (1740–1820), omitted most of Garve's interpretation, and emphasized three objections. First, it mistakenly assimilated Kant's idealism to Berkeley's idealism, which analyzes spatial objects as collections of sense data. Second, based on this reading, it charged that Kant's theory could not distinguish between the real and the imaginary. And finally, it attacked the distinction between theoretical and practical philosophy, on the grounds that morality is based on common sense. This misreading and Kant's own dissatisfaction with the Transcendental Deduction prompted him to publish a revision in 1787.

In his revised (or B) edition Kant separates his transcendental idealism from Berkeley's "empirical" idealism, and reworks several key arguments. The second edition Preface presents Kant's critical approach through the startling metaphor of the Copernican revolution. Kant also expands his arguments in the Introduction and the Transcendental Aesthetic. The two major changes in the Analytic are a completely revised Transcendental Deduction of the categories, and a new section, the Refutation of Idealism, added to the Analytic of Principles. Kant reworks the Transcendental Deduction to address two defects of the earlier edition: a failure to make the unity of self-consciousness the foundation of the argument, and a lack of connection to the theory of judgment. In the Refutation of Idealism Kant clarifies his idealism. Although the proof is aimed at Descartes's view that knowledge of the external world is less certain than self-knowledge, Kant elucidates the difference between his and Berkeley's idealism as well. Because of this addition, Kant also revised the Paralogisms section of the Dialectic.

In this text my main purpose is to explain Kant's arguments intelligibly to the student who has some familiarity with the history of philosophy. In keeping with the principle of charity, I attempt to give Kant's views the most plausible interpretation consistent with the texts. At the same time I indicate the main strengths and weaknesses

in his views. While it is impossible to evaluate the many criticisms leveled against Kant, I point out both some clear misunderstandings and many reasonable questions raised by commentators. And since I believe it is impossible to understand a philosophy without knowing the issues engaging the philosopher, as well as the legacy, in general the discussion situates Kant's arguments in the context of his times.

CHAPTER 2

The Prefaces and the Introduction

I. THE A EDITION PREFACE: THE PROBLEM OF HUMAN REASON

In the first edition Preface Kant explains why a critique of human reason – the power to know – is necessary. At Avii he says it is the nature of reason to ask questions it cannot answer. Although he gives no examples, these questions are the basis of traditional metaphysical disputes Kant examines in the Transcendental Dialectic: is the universe finite or infinite in space and time? Is matter infinitely divisible or composed of simple parts? Do humans have free will or are we determined by causes outside our control? And does the existence of the universe presuppose a necessarily existent being? We can see how these questions arise in our everyday thinking. Consider the principle underlying scientific investigation: “Every event has a cause.” We “naturally” ask: what caused the earthquake? What causes the earth to revolve around the sun? What caused the universe? But if these questions arise naturally, then what is the problem?

In the Dialectic, Kant describes how, in trying to explain reality, reason ends up in a dilemma: either the explanatory chain continues forever, or it must end somewhere. The temptation is to find a stopping place, to invent an “absolute” to end the series. Examples of such “absolutes” are God as the cause of the universe, and freely acting souls as the causes of human actions. The problem with such answers is that they cannot be verified by experience. Humans cannot experience the entire history of the universe, or God, or an immaterial soul as they can experience everyday events in space and time. As Kant puts it, once we have conjectured about the existence of things that

are not possible objects of experience, then reason has overstepped its bounds, namely “all possible use in experience” (Aviii).

This is why the traditional metaphysical debates have never been resolved. Since the Greeks, philosophers have inquired about the ultimate nature of reality, but once they posited the existence of “absolutes,” their answers could not be tested by experience. So metaphysicians could only conjecture rather than make genuine claims to knowledge. Worse, different philosophers gave opposing solutions, and thus human reason “falls into obscurity and contradictions” (Aviii). Because Kant treats these questions at length in the Transcendental Dialectic, here he only points out that the unresolved debates of metaphysics show that philosophers have been using the wrong methods. In particular, he will argue that all cognitive claims must be decidable by reference to experience. (A version of this idea gains prominence as the “verifiability principle” of meaning espoused by twentieth-century positivists.)

From Aix to Ax Kant describes the battles between dogmatists – rationalists such as Plato, Descartes, and Leibniz – and skeptics – empiricists who questioned the ability to discover the nature of reality. Kant mentions that Locke attempted a “physiology” of the understanding, but this settled nothing, since Locke wrongly assumed that the answer lies in analyzing how experience arises historically. In fact, none of Kant’s predecessors identified the necessary conditions for knowledge. Until this is done, the traditional problems of metaphysics cannot be resolved.

Philosophy must start all over again by examining *reason itself* to discover what it is capable of knowing. Here as well as in the deduction of the categories, Kant uses the metaphor of judicial claims to describe his task, since he thinks of reason as having to establish its rightful claim to knowledge. As he explains at Axii, a critique *of* reason *by* reason would examine the sources, extent, and limits of our cognitive capacities. More specifically, the critique would answer these questions:

1. What can reason know independently of experience?
2. Is metaphysical knowledge possible? Are metaphysical questions meaningful and decidable?

3. What are the limits of knowledge by reason alone? In particular, Kant is concerned about whether humans can attain knowledge of things in themselves, or things as they exist independently of human perceivers.

Like many of Kant's key terms, the term "reason" (*Vernunft*) has several meanings. Kant uses "reason" in three important senses. In its broadest use, "reason" refers to all subjective processes involved in knowing. The second sense is less inclusive, and refers to intellectual as opposed to sensory capacities. The third and narrowest sense of "reason" refers to the inferential operations involved in logical justifications and explanations; in this sense reason is distinguished from the understanding as the faculty of judging. Kant attributes the errors of traditional metaphysics to reason in the narrowest sense.

At Axiii Kant makes this extravagant claim: "In this business I have made comprehensiveness my chief aim in view, and I make bold to say that there cannot be a single metaphysical problem that has not been solved here, or at least to the solution of which the key has not been provided." Now since philosophers before Kant spent several thousand years wrangling over metaphysics, the immodesty of his statement cannot fail to strike the reader. But the next sentence explains Kant's optimism. Pure reason is "such a perfect unity" that its principle supplies the solutions to all metaphysical problems. This means that the solutions to the metaphysical debates depend on what the subject contributes to knowledge. Kant will argue that human reason is governed by a single principle, that it has one and only one function. Once we understand that function, we can decide which are the rightful claims to knowledge. (In brief, reason functions to provide the *forms* of knowledge.) In any case, an accurate analysis of reason will guarantee a correct, complete system of metaphysics. Kant will conclude that some traditional metaphysical claims (e.g., "Every event has a cause") are legitimate, whereas others (e.g., "God exists") are not.

Finally, at Axvi–xvii Kant describes two sides to the deduction of the categories (*a priori* concepts), one *objective*, the other *subjective*. The aim of the former is to demonstrate the "objective validity" of the categories, that is, their applicability to objects of experience. The latter explains how *a priori* representations arise from subjective cognitive processes. Since the *Critique* first appeared, commentators

have debated whether Kant's subjective analysis contains a "faculty psychology," like Hume's theory of custom and association, which would beg questions at issue in the *Critique*. As we shall see in chapter 5, although the two sides are interdependent, Kant clearly intends his account to be epistemological rather than psychological.

2. THE B EDITION PREFACE: KANT'S COPERNICAN REVOLUTION

In the 1787 Preface Kant approaches the problem of reason from a different angle. He first asks whether metaphysics can attain the certainty of science, or must continue to grope for knowledge. The model used for comparison is logic, the science of the formal rules of thought. Kant believes this system – the elaborated Aristotelian system of syllogistic inference – is complete and certain. It owes its success to the fact that it abstracts completely from the content of thought, and merely codifies the forms of valid inference. For example, the argument form *modus ponens* consists of two premises, one a conditional "If P, then Q", the other the antecedent "P" of the conditional, and the conclusion, the consequent "Q". Any argument having this form is deductively valid: if the premises were true, then the conclusion would have to be true. So, for example, the following two arguments are both valid because they have the form *modus ponens*:

1. If the Sun does not revolve around the Earth, then the Earth revolves around the Sun.
2. The Sun does not revolve around the Earth.
3. Therefore, the Earth revolves around the Sun.

and:

- 1'. If the universe exists, then it must have been created by an infinite spirit, God.
- 2'. The universe exists.
- 3'. Therefore, it must have been created by an infinite spirit, God.

The two arguments differ not in validity or logical correctness, but in the actual truth value of the premises. The first argument is sound, since it is valid and the premises are in fact true. Whether the second argument is sound is controversial, because the first premise is clearly

debatable. In general, logic cannot decide on the soundness of an argument, since determining the truth value of claims about reality requires factual or empirical knowledge. Nevertheless, Kant thinks any discipline aspiring to be a science must aim for the completeness and certainty exemplified by logic. Now this strikes contemporary readers as ironic, since only a century later, the German philosopher Gottlob Frege inaugurated the development of modern logic by demonstrating the inadequacies of the logic in which Kant had so much confidence. Despite the limitations of his logic, Kant had a clear idea about what a formal science was supposed to do.

Although he does not complete the comparison here, Kant's point is that if metaphysical knowledge is possible, it will share some characteristics of logic but diverge in others. For Kant, any science must be based on necessary principles. If scientific principles were only contingent, one could never be certain that the theories were true. For this reason all scientific knowledge must be based on a unified system of formal rules of thought. But unlike logic, which is purely formal, metaphysics has a content because it is the science of reality. We shall see below what kinds of objects metaphysics studies.

At Bix-x Kant distinguishes theoretical from practical reason, a distinction at the foundation of his entire critical system. Kant borrows this distinction from Aristotle, although he expresses it rather differently. Essentially the difference is between representing existing states of affairs, and representing states of affairs that ought to exist. As Kant puts it, we may know objects in two ways. In the first, we apply a concept to an object that is given or exists independently of our awareness of it. In this case the object is not created in the process of knowing. When Kant says we "determine" an object and its concept, he means we predicate one of a set of mutually exclusive concepts to it. For example, in judging that a book is rectangular, I am classifying it; my representation of it is determinate with respect to its shape. We use theoretical reason when we make claims about the properties of things we take to exist independently of us. Claims of theoretical reason are "is" claims.

By contrast, practical reason concerns the thinking involved in acting, when we decide what we ought to do. In this process, we bring objective states of affairs into existence. Consider that in making a decision (say, whether to keep a promise), one first has to appeal to some rule concerning one's values or desired goals. Kant calls such

rules imperatives, because they express what one ought to do. (The highest principle of morality for Kant is the categorical imperative, but we also act according to non-moral or hypothetical imperatives.) Now practical reason consists in making value judgments – accepting imperatives – and applying them in making choices in concrete situations. For example, if I decide to brush my teeth after eating breakfast, it is because I accept a principle of the form “If you want to be healthy, you should brush your teeth after meals.” When we act, we change the objective situation by bringing about a new state of affairs. In this sense the “object” of the judgment does not exist prior to the judgment. For Kant, the state of affairs resulting from the action also includes the state of our own will.

Kant believes that both theoretical and practical knowledge have metaphysical parts. The metaphysics of each type of knowledge consists in the *a priori* or pure rules originating in reason alone. *The Critique of Pure Reason* is Kant’s account of the metaphysical foundations of theoretical reasoning. Kant presents his metaphysics of practical reason in *The Critique of Practical Reason*, where he argues for the validity of the categorical imperative.

From Bxi to Bxiii Kant characterizes his new critical method as his “Copernican revolution”: “reason has insight only into what it itself produces according to its own design” (Bxiii). Kant accepts Hume’s arguments that if theoretical knowledge depended solely on experience, we could never arrive at laws of nature: “accidental observations, made according to no previously designed plan, can never connect up into a necessary law, which is yet what reason seeks and requires.” Inductive generalizations take the form “All Fs observed so far are Gs” (e.g., “All crows observed so far are black”) rather than “All Fs are necessarily Gs” (“All crows are necessarily black”). If necessary knowledge cannot be derived *a posteriori*, from experience, then it must be known *a priori*. As we shall see in the Introduction, one criterion of *a priori* knowledge is its necessity.

With this point established Kant makes his famous claim to do for philosophy what Copernicus did for astronomy. Kant effects his Copernican revolution by rejecting a traditional assumption about knowledge:

Up to now it has been assumed that all our cognition must conform to the objects; but all attempts to find out something about them *a priori* through concepts that would extend our cognition have, on this presupposition,

come to nothing. Hence let us once try whether we do not get farther with the problems of metaphysics by assuming that the objects must conform to our cognition. (Bxvi)

All previous philosophers, rationalist and empiricist, assumed that knowledge depends entirely on the world outside the perceiver. Accordingly, our knowledge is of things as they exist independently of us. Objective truth is independent of subjective conditions of knowledge. In Kant's terminology, this standpoint identifies the objects of knowledge with things in themselves, that is, the ultimate reality behind the appearances. Now although they disagreed about the roles of reason and perception, both rationalists and empiricists assumed that knowledge consists in discovering subject-independent truths.

Kant's reason for giving up the assumption is this: if all cognition conforms to objects (depends on subject-independent truth), then one could never establish the validity of *a priori* or necessary knowledge. As mentioned earlier, Hume proved that experience at best yields contingent truths. Now rationalists typically claimed that knowers possess innate knowledge, the intellectual capacity to intuit truths about existing things. But Kant rejects these claims. The problem with innate ideas is to account directly for their application to the world. Both Descartes and Leibniz justify innate knowledge by the goodness of God, thereby presupposing that reason can arrive at truths about reality. Moreover, Kant agrees with Hume that no knowledge of matters of fact can be obtained apart from a reliance on the senses. Knowledge through pure thought either is analytic (i.e., of relations of ideas), or concerns the general form of thought itself and does not inform us about actual existence. But a strict empiricism leads to skepticism, the view that there is no objective basis for claims to know necessary truths about existing things. Kant firmly rejects such skepticism.

The solution to proving the validity of *a priori* knowledge is to perform the same shift in perspective that the Polish astronomer Nicolaus Copernicus made in his revolutionary theory. Before Copernicus, astronomers assumed that the spectator on Earth is motionless, contributing nothing to the observed motions. Accordingly, the observed motions of heavenly bodies are in fact their true motions. On his deathbed in 1543, however, Copernicus published *On the Revolution of the Heavenly Spheres*, which replaced the Ptolemaic geocentric system with the heliocentric or sun-centered system. The Earth is not

motionless at the center of the universe, but rotates around the Sun along with other heavenly bodies. Thus the motions of planets and stars apparent to a spectator on Earth result from both their true motions and the motions of the spectator. Kant believes that only through a similar shift can we explain how we have *a priori* knowledge. He will argue that empirical knowledge depends jointly on what exists independently of us and on our nature as subjects. As this reasoning implies, the features of objects known to be necessary are those the subject contributes to experience. Contingent knowledge is still dependent on our actual experience of objects.

In fact, Kant believes that the history of geometry, physics, and chemistry lends support to this shift. At Bxi–xii he remarks that geometry became a science of necessary truths only when geometers stopped measuring objects to determine their properties, and instead considered what was required to construct geometrical figures in space. Similarly, experimental results in physics and chemistry achieved a firmer footing when scientists such as Galileo, Torricelli, and Stahl followed methods constrained by causal principles. In all these cases the revolutionary shift consisted in the idea that reason provides principles that govern the scientist's demonstrations or use of empirical evidence.

But this new critical perspective has some startling implications, namely that "we can never get beyond the boundaries of possible experience," and that *a priori* cognition "reaches appearances only, leaving the thing in itself as something actual for itself but unrecognized by us" (Bxix–xx). Recall that the "thing in itself" (*Ding an sich*) is whatever exists as it is independently of our cognitive access to it. Appearances, as we shall see, are these existing things *as they appear to us*. Once we no longer assume that empirical truth is independent of our subjective capacities, it follows that knowledge does not reach things in themselves. We must settle for knowledge of appearances.

The thesis that we cannot know things in themselves, called the "unknowability thesis" (UT), is the most radical aspect of Kant's transcendental idealism and is rejected by many philosophers. But it is a mistake to dismiss Kant's philosophy because of it, especially if one does not appreciate its role in his theory. First, UT is not an assumption of Kant's method, but rather a *conclusion* (I think a plausible one) from his theory of cognition. Here Kant neither assumes it nor argues for it; he merely alerts the reader that it in fact

follows from his critical theory of knowledge. So anyone persuaded by Kant's analysis of human sensibility and understanding must logically accept UT. But if these arguments are not convincing, then clearly it is not necessary to accept UT (although one might hold it on other grounds). It would be an error to dismiss Kant's system because one misunderstood the status of the thesis in his philosophy.

The real danger in reacting too strongly to Kant's radical conclusion is to close oneself off from the profound and subtle arguments he makes throughout the *Critique*. It is hard to emphasize strongly enough the care with which Kant considers his predecessors' views, the painstaking nature of his arguments, and the enormously rich and powerful theory that results. Whether or not one agrees with Kant's theory, it is worthy of serious consideration. (Not to mention its enormous influence on the history of philosophy.) The truly disinterested reader must go where the arguments lead. There are many grounds for rejecting Kant's arguments; throughout this guide I will pinpoint the areas of greatest controversy. But at this point, it is important to keep an open mind about what is to come.

Now back to UT. Kant also expresses it as a denial that we can have knowledge of the unconditioned. He says: "For that which necessarily drives us to go beyond the boundaries of experience and all appearances is the **unconditioned**, which reason necessarily and with every right demands in things in themselves for everything that is conditioned, thereby demanding the series of conditions as something completed" (Bxx). In Kant's jargon, the "unconditioned" is any presupposition of a cognitive claim, which itself has no presuppositions. For example, the idea of a first or uncaused cause is one example of the "unconditioned" since it is a cause unconditioned by any prior cause. In the case of appearances and things in themselves, Kant sees the latter as the condition of the former, since (as he says at Bxxvi–xxvii) it would be absurd to think that there could be appearances without anything that appears. In other words, the existence of things in themselves is a *logical presupposition* of the fact that something appears to us.

The claim that things in themselves exist has struck many readers as unjustified and even inconsistent with other views Kant holds. Before we can form an opinion on the matter, however, we need to be clear on what this position involves. First, it means we are logically justified in making the minimal existential assumption that something exists that