CHAPTER 1

Introduction to the critical project

1. 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