

Studies in German Idealism

Volume 10

Otfried Höffe

Kant's *Critique* *of Pure Reason*

The Foundation of Modern Philosophy



Springer

KANT'S CRITIQUE OF PURE REASON

Studies in German Idealism

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KANT'S CRITIQUE
OF PURE REASON
THE FOUNDATION OF MODERN
PHILOSOPHY

by

OTFRIED HÖFFE

 Springer

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METHOD OF CITATION AND ABBREVIATIONS

Kant's writings are cited from the Academy Edition (*Kant's gesammelte Schriften*, edited under the aegis of the Royal Prussian Academy of Sciences, and subsequently the German Academy of Sciences). Roman numerals indicate the volume and Arabic numerals the page number of this edition. The pagination of the Academy Edition is reproduced in almost all modern English translations of Kant's writings.

The *Critique of Pure Reason*, identified throughout as the first *Critique*, is cited according to the pagination of the first (=A) and second (=B) editions of the work. Passages from the first *Critique* have been cited according to the English translation by Norman Kemp Smith, *Immanuel Kant's Critique of Pure Reason*, London: Macmillan 1933². The superscript after the date of publication here and elsewhere refers to the edition or impression of the text cited. Here Kemp Smith's translation: it first came out in 1929, but was reissued in a second impression with corrections in 1933. This is the standard version, which incorporates the A and B pagination, although certain minor changes have occasionally been made in order to clarify the interpretation of the text that is provided here.

Additions or insertions by the author are enclosed in square brackets, and titles or abbreviated titles of particular sections of the first *Critique* are capitalised and placed in inverted commas, e.g. 'Aesthetic' for 'The Transcendental Aesthetic'.

Italicised Abbreviations of Other Cited Texts

Anthropology from a Pragmatic Point of View [Anthropologie in pragmatischer Hinsicht] (VII: 117–334).

Cf. Critique of Judgement [Kritik der Urteilskraft] (V: 165–485).

The *Conflict* of the Faculties [Der Streit der Fakultäten] (VII: 1–116).

Conjectural Beginning of Human History [Mutmaßlicher Anfang der Menschengeschichte] (VIII: 107–123).

CPrR: Critique of Practical Reason [Kritik der praktischen Vernunft] (V: 1–164).

On a *Discovery* according to which any New Critique of Pure Reason has been rendered Superfluous by an Earlier One [Über eine Entdeckung, nach der alle neue Kritik der reinen Vernunft durch eine ältere entbehrlich gemacht werden soll] (VIII: 185–252).

Metaphysical Principles of the *Doctrine of Right* [Metaphysische Anfangsgründe der Rechtslehre] (Part One of *MS*, VI: 203–372).

Metaphysical Principles of the *Doctrine of Virtue* [Metaphysische Anfangsgründe der Tugendlehre] (Part Two of *MS*, VI: 273–493).

Dreams of a Spirit-Seer [Träume eines Geistersehers, erläutert durch Träume der Metaphysik] (II: 315–373).

On an *Elevated Tone* that has recently Arisen in Philosophy [Von einem neuerdings erhobenen vornehmen Ton in der Philosophie] (VIII: 387–406).

Lectures on Philosophical *Encyclopedia* [Vorlesungen über philosophische Enzyklopädie] (XXIX/1.1: 3–147).

On the *Form and Principles* of the Sensible and Intelligible World [De mundi sensibilis atque intelligibilis forma et principiis] (II: 385–420).

Metaphysical *Foundations* of Natural Science [Metaphysische Anfangsgründe der Naturwissenschaft] (IV: 465–566).

Groundwork of the Metaphysics of Morals [Grundlegung zur Metaphysik der Sitten] (IV: 385–463).

Idea for a Universal History from a Cosmopolitan Point of View [Idee zu einer allgemeinen Geschichte in weltbürgerlicher Absicht] (VIII: 15–32).

Letters: Kant's correspondence is cited, for example, in the form 'No. 781/426', the first figure indicating the number of the relevant letter in the Academy Edition (X–XII, 1922²) and the second indicating the numbering in the collection edited by Otto Schöndörffer, *Immanuel Kant. Briefwechsel* (Meiner 1972²). The Academy numbering

is included in square brackets before each letter in the comprehensive edition of the letters in English translation: I. Kant, *Correspondence*, translated by Arnulf Zweig, CUP 1999.

Logic: A Handbook for Lectures [Logik: ein Handbuch zu Vorlesungen, edited by G. B. Jäsche] (IX: 1–150).

Logic Busolt (XXIV/1.2: 497–602).

Logic Pölitz (XXIV/1.2: 603–686).

Lectures on Metaphysics and Rational Theology: *Metaphysics L* (XXVIII/1: 167–350); *Metaphysics Volckmann* (XXVIII/1: 351–460); *Metaphysics L₂* (XXVIII/2.1: 525–610); *Metaphysics Mrongovius* (XXIX/1.2).

MS: Metaphysics of Morals [Metaphysik der Sitten] (VI: 203–493).

Physical *Monadology* [Monadologia physica] (I: 473–488).

Universal *Natural History* and Theory of the Heavens [Allgemeine Naturgeschichte und Theorie des Himmels] (I: 215–368).

Notes on the Progress of Metaphysics (XX: 333–351).

The *Only Possible Basis* for a Demonstration of the Existence of God [Der einzig mögliche Beweisgrund zu einer Demonstration des Daseins Gottes] (II: 63–163).

What is *Orientation* in Thinking? [Was heißt: Sich im Denken orientieren?] (VIII: 131–147).

Toward *Perpetual Peace* [Zum ewigen Frieden] (VIII: 341–386).

Lectures on *Pedagogy* [Pädagogik, edited by F. Th. Rink] (IX: 437–500).

Enquiry into the Distinctness of the *Principles* of Natural Theology and Morality [Untersuchung über die Deutlichkeit der Grundsätze der natürlichen Theologie und der Moral] (II: 273–302).

What is the Real *Progress* that Metaphysics has made in Germany since the Time of Leibniz and Wolff [Welches sind die wirklichen Fortschritte, die die Metaphysik seit Leibnizens und Wolffs Zeiten in Deutschland gemacht hat?] (XX: 253–332).

Prolegomena: Prolegomena to any Future Metaphysics that shall be able to Present itself as a Science [Prolegomena zu einer jeden künftigen Metaphysik, die als Wissenschaft wird auftreten können] (IV: 252–384).

On the Various *Races* of Mankind [Von den verschiedenen Rassen der Menschen] (II: 427–444).

Refl.: Reflexions [Reflexionen] (XIV ff.).

Religion within the Limits of Reason Alone [Religion innerhalb der Grenzen der bloßen Vernunft] (VI: 1–202).

Remarks on the Observations on the Feeling of the Beautiful and the Sublime [Bemerkungen zu den Beobachtungen über das Gefühl des Schönen und Erhabenen] (XX: 1–192).

Report on Lectures for the Winter Semester of 1765–66 (II: 303–314).

On the Use of *Teleological Principles* in Philosophy [Über den Gebrauch teleologischer Prinzipien in der Philosophie] (VIII: 157–184).

Thoughts on the True Estimation of Living Forces [Gedanken von der wahren Schätzung der lebendigen Kräfte] (I: 1–182).

Metaphysical Principles of the *Doctrine of Virtue* [Metaphysische Anfangsgründe der Tugendlehre] (Part Two of MS: VI: 273–493).

An Answer to the Question: *What is Enlightenment?* [Beantwortung der Frage: Was ist Aufklärung?] (VIII: 33–42).

FOREWORD

If there is *one* book amongst the fundamental works of modern philosophy which can be singled out as ‘the’ founding text of that tradition, it is Kant’s *Critique of Pure Reason*, once described by Schopenhauer as ‘the most important book that has ever been written in Europe’. This work effected a revolution in almost every area of philosophy and lent the landscape of western thought its distinctively modern appearance. Not a few of Kant’s insights even anticipated some of the supposed innovations of twentieth century thought, such as the fundamental criticism of the ‘picture theory’ of language and reality, or the claim that our objective knowledge of the world is rule-governed in character. Unfortunately, it must be said that other aspects of Kant’s specifically modern innovations have also been ‘forgotten’ in current philosophical controversies. Thus contemporary epistemology still reveals forms of pre-critical empiricism, while debates surrounding the relation of mind and body still struggle with Cartesian dualism, even though both positions were already decisively overcome by Kant.

From its inception philosophy has enquired into the nature of knowledge, into the object of knowledge, the objective fact of the matter, and into the sum of objective states of affairs that make up our common global world. In recent times, however, the role and competence of philosophy has been placed in doubt both from without and within. From without, the questions of philosophy have been increasingly addressed by the empirical sciences, in particular by the cognitive sciences. And even when such sciences have still permitted the philosopher a certain right to practice, as it were, this right was contested from within, by philosophy itself, either in the form of the naturalisation of epistemology, or as a kind of dramatically staged ‘farewell’ to reason. In this context, Kant’s *Critique of Pure Reason* emphatically reveals its relevance and significance yet again. For the *Critique* can meet the challenge of this double assault on philosophy, without in any way denying the exceptional value and importance of the individual sciences. At

the same time, his *Critique* bestows an epochal cast upon the 'eternal' problem of philosophy, joining the question of how far the world of knowledge can reach with the further question of what lies beyond that world: namely that of morality.

In order to disclose the full significance of Kant's philosophy, we must of course look upon the *Critique* through a double optic, as it were, or with two pairs of eyes, the 'innocent eyes' of Kant's own time, and the 'knowing and more instructed eyes' of today. In order to appreciate the riches of this philosophy, and to counter the misunderstandings and misinterpretations to which it has been subject, we shall investigate the work in an immanent fashion, occasionally supplemented with a broader historical and comparative perspective which will also allow us to delineate the character of Kant's argument more precisely. In this connection, we shall draw comparisons not only with the philosophy of the early modern period, but also, like Kant himself in the chapter of the *Critique* entitled 'The History of Pure Reason', with the philosophy of antiquity which proved so decisive for the evolution of western philosophy itself. In order to concentrate upon the full philosophical potential of the work we shall mention only a few of the controversies to be encountered in the vast body of secondary literature on Kant (for a useful overview of the field of Kant studies since 1945 cf. Natterer 2003). In general, however, we shall address substantive issues that will help us to examine the validity of Kant's claims in the first *Critique* in constant dialogue with contemporary problems and positions, an approach which will also allow us to ask whether the philosophy of the present can still learn much from Kant.

It is obvious that we have eschewed what could be called the 'principle of malevolence', namely the tendency to seek out and emphasise problematic passages, subjecting them to eccentric interpretations, deriving strange conclusions from them, and ignoring all hermeneutic reservations or objections by the claim that one is concerned with Immanuel X rather than Immanuel Kant. As if it were too difficult to confess that we stand on the shoulders of giants, we prefer to diminish our predecessors as homunculi in order that we may appear as giants ourselves. It is surely more fair-minded, and certainly more intellectually challenging, to resist the tendency to misuse the text in the interests of some vain and supposed superiority on our own part. An attentive reading of the first *Critique* can only confirm Kant's own warning against rushing to identify 'apparent contradictions' in the work,

when in fact these can ‘easily be resolved by those who have mastered the idea of the whole’ (B xliv).

The following study can be read as a systematically presented commentary on the first *Critique*. We begin by presenting four fundamental reasons for engaging seriously with this work as the key text for modern philosophy (Chapter 1). In Part One we challenge the reductive and misleading interpretations to which the work has so often been subjected, and through a close reading of the motto from Bacon, the two Prefaces and the ‘Introduction’, we present the general outline of Kant’s full critical programme, one which represents a serious alternative with respect to many significant trends of contemporary philosophy. We then proceed, following the order of the text, to investigate the ‘Aesthetic’ (Part Two), the ‘Deduction’ and the chapter on the ‘Schematism’ from the ‘Analytic’ (Part Three), the discussion of the ‘Principles’ from the ‘Analytic’ (Part Four), the ‘Dialectic’ (Part Five), and the ‘Doctrine of Method’ (Part Six, Chapters 21–22). In this context we undertake to defend and strengthen Kant’s fundamental claims against many over-hasty and inappropriate objections. In each case we begin with an introductory discussion, followed by a commentary and interpretation of the relevant section of Kant’s text, and conclude with a critical evaluation of the argument that also engages with recent and contemporary debates and controversies. Finally, after an examination of the metaphors which Kant characteristically deploys (Chapter 23), we draw upon the ‘Assessments’ included in the earlier parts of our analysis and attempt a final overview and evaluation of the entire argument (Chapter 24). We here subject the first *Critique* to a cautious ‘dietetic’ regime, but without thereby reducing the body of the work to a quivering skeletal remnant of its original form. Since there are still so many powerful reasons for engaging with Kant, we should perhaps borrow something of the pathos of Friedrich Hölderlin and apply his words concerning philosophy in general to this philosophical work in particular: ‘You must continue your study, even if you should have no more money than suffices to purchase oil and a lamp, and no more time at your disposal than the hours betwixt midnight and the cockerel-crow of dawn’ (*Briefe*: 235; Hölderlin’s letter to his brother of 13.10.1796).

The following study has arisen in the teaching context of various seminars and discussions over a number of semesters, initially in Fribourg, subsequently in Tübingen and Zürich. I should like to express

my gratitude for many stimulating contributions from the other participants on these occasions, and for the unstinting assistance of my colleagues and collaborators Dirk Brantl, Philipp Brüllmann, Roman Eisele and Michael Lindner, and especially Ina Goy and Nico Scarano.

Tübingen, July 2003

CHAPTER 1

FOUR REASONS FOR ENGAGING WITH KANT'S FIRST *CRITIQUE*

There are three principal reasons for a substantive contemporary engagement with Kant and the following study attempts to articulate the inner unity between them. The first *Critique* represents a fundamental alternative to the prevailing currents of contemporary philosophy (Chapter 1.2), and one which directly addresses two characteristic features of our own time: the process of epistemic as well as political globalisation (Chapter 1.3) and the contemporary dominance of the (natural) sciences (Chapter 1.4). But we begin with a brief consideration of the historical significance of Kant's thought as a whole (Chapter 1.1). The present work is not intended as a contribution to Kant hagiography, but it certainly aims to contest that hagiographical tendency of the present which regards the philosophical approach generally adopted during the last couple of generations, and especially that belonging to one specific tradition, as the best foundation for engaging in systematic philosophy. For in confronting the first *Critique*, we are undeniably encountering a work of 'world literature': a text that does not belong to the past, but one which still possesses fundamental relevance for the present.

1.1 The Historical Significance of Kant's Philosophy

The mature work of Kant is emphatically required reading for any serious student of philosophy. No single text has exerted greater impact upon the thought of the modern epoch, itself remarkably rich in outstanding works of philosophy, than the *Critique of Pure Reason*. In spite of the contributions of Bacon, Descartes and Hobbes, of Pascal, and then of Leibniz, Locke, Hume and Rousseau, subsequently those of Hegel, Marx, and Nietzsche, and finally of Frege, Russell, Husserl, Heidegger and Wittgenstein, it would be impossible to name any work

more influential for the history of modern philosophy than Kant's first *Critique*.

While the thinkers of German Idealism and the later neo-Kantians oriented their thought in relation to this work, this is equally true for a critic of idealism like Arthur Schopenhauer and a critic of neo-Kantianism like Martin Heidegger. And we must say the same for Gottlob Frege and his contribution to logic and the theory of mathematics, which itself shaped the entire tradition of analytical philosophy, for Fritz Mauthner and his critical reflections on language, which influenced Ludwig Wittgenstein himself, for Karl Popper and the members of the Vienna Circle. For the thought of Theodor W. Adorno the Kantian critique of reason is hardly less significant than the Hegelian dialectic (Adorno 1959). Charles Sanders Peirce, the founder of American pragmatism, had already described the first *Critique* as his 'mother's milk' as far as philosophy is concerned (cf. Fisch 1964: 15). And Hilary Putnam has claimed that 'almost all the problems of philosophy attain the form in which they are of real interest only with the work of Kant (Putnam 1992: 3). Whether we consider Kant's idea of a self-administered critique of reason, the turn to the 'subject', the concept of the synthetic a priori, the theory of space and time, the transcendental conception of the 'I think', mathematics as the language of natural science, the refutation of all the traditional proofs for the existence of God, or the basic features of a purely autonomous conception of morality, it is quite clear that to study the first *Critique* is nothing less than to explore the fundamental roots of all subsequent philosophy.

And there is a further dimension to the historical significance of Kant which must be acknowledged here. From the broader cultural point of view Kant belongs to the 'Age of Enlightenment' which has subsequently been accused of failing to subject itself to full critical examination. But since the Enlightenment arguably first becomes truly self-reflexive and self-critical with the first *Critique* itself, we may well feel justified in criticising all of the particular substantive claims of the period in question, while recognising that there is no longer any serious alternative to the fundamental attitude exemplified by the concept of Enlightenment: the resolve to think in an independent manner, to distance oneself from purely personal and particular interests, to acknowledge the claims of universal human reason. The now often repeated remark that philosophy is not permitted to assume a 'God's

eye' view of the world might perhaps represent a salutary warning to the thinkers of German Idealism, enjoining modesty in such matters, but it is entirely otiose as far as Kant is concerned insofar as he had long encouraged philosophy, even prior to the first *Critique*, to adopt a more modest conception of its own powers. By means of his careful and methodical reflections on the problem of knowledge Kant challenged the exaggerated claims of philosophy and the sciences alike and thus already suggested a radical critique of ideology which exposes the mere 'semblance of science' (*Report*, II: 311) and the 'delusion of knowledge' (*Letters*: Nr. 34/21).

The earlier followers and critics of Kant, like Reinhold and Fichte, and subsequently Hegel as well, effectively demoted the first *Critique* to a kind of propaedeutic for the systems which they then explicitly undertook to construct. Although Kant himself once described the first *Critique* as a kind of 'propaedeutic (preparation)' (B 869; cf. B 25 and B 878), he directly contested 'the presumption of claiming that I have intended simply to provide a *propaedeutic* to transcendental philosophy rather than the *system* of this philosophy itself' (*Notice concerning Fichte's 'Science of Knowledge'*, XII: 370f.). For as distinct from the genuine propaedeutic of 'logic', which forms 'only the vestibule of the sciences' (B ix), the first *Critique* belongs to pure philosophy and investigates the true subject matter of such philosophy – namely 'true and merely apparent knowledge' – in a thorough and systematic manner. The first *Critique* thus already outlines 'the complete plan' of the system of pure reason 'on the basis of principles' and 'guarantees the completeness and certainty of the structure in all its parts' (B 27). It is only in a subordinate sense that the first *Critique* can be described as lacking in completeness, as for example in the presentation of the pure concepts of the understanding, which introduces all of the relevant basic concepts, or categories, but does not specify the other pure derivative concepts of the understanding, Kant's so-called 'predicables' (B 107f.), which would also have to be presented in due course. Thus although the first *Critique* only provides us with 'prolegomena for any future metaphysics', it nonetheless contains the extensively developed form of what we may call Kant's 'fundamental philosophy'.

Until fairly recent times our own epoch has generally been described as that of 'modernity'. This term was understood to capture the emphatic rise of natural science, technology and medicine, the

concomitant disenchantment of nature, and the progressive emancipation of the subject from the fetters of history and tradition. It has also served to characterise specific phenomena of alienation and reification, the far-reaching transformations that have taken place in the fields of art, literature and music, and, last but not least, the development of the democratic constitutional state. In some respects this standard self-conception of modernity now shows certain signs of breaking down. The emergence of a 'post-modern' conception of thought and experience has raised emphatic doubts about the validity of allegedly universal knowledge transcending the particularity of different cultures, and this development has only furnished a further reason for a serious engagement with the first *Critique*. The present work discusses and addresses what I have called 'epistemic modernity' not in terms of its own secondary expressions and manifestations, but explicitly in relation to its most sophisticated and intrinsically self-critical form. I am thereby also attempting to develop my own earlier reflections concerning the 'project of modernity'. After having addressed questions of right, politics and the state (Höffe 2002 and 2007), and ethical issues arising from the relationship between science, technology and the environment (Höffe 2000⁴), I turn in the present work directly to the theory of philosophy and science itself.

1.2 An Alternative Form of Fundamental Philosophy

If the principal reason for attending to Kant's first *Critique* were merely its enormous historical importance, one could of course simply reduce it to a mighty monument of the past. Its governing conception of the synthetic a priori is now widely regarded as highly questionable, and the idea of transcendently grounded natural laws, the constructive culmination of the work, is hardly given any serious consideration at all. Certain critics of Kant lament the fact that he failed to participate in the 'linguistic turn' in philosophy, some charge the first *Critique* with a kind of epistemological solipsism, while others ascribe a merely marginal role to his thought in relation to the currently prevailing philosophy of mind.

We already find Herder criticising and attempting to overcome Kant's general programme, in the wake of Johann Georg Hamann, by explicit recourse to the philosophy of language. Hamann had roundly

asserted 'the genealogical priority of language' and claimed that language itself represents the 'centre point of reason's misunderstanding with itself' (Hamann, *Metakritik*: 286; Haynes translation: 211), thereby anticipating, albeit in a less sophisticated form, two key aspects of the subsequent linguistic turn: the idea that the philosophy of language is itself the fundamental philosophical discipline and interest in philosophy as an essentially therapeutic clarification of the snares of language. Herder likewise declared the 'philosophy of human language' to be the 'ultimate and highest philosophy' and ascribed many of the follies and contradictions of reason to the 'inadequately employed instrument of language' upon which it depends (Herder, *Werke* VIII: 19f.).

Over a hundred years later we find Fritz Mauthner claiming that 'philosophy is the theory of knowledge, the theory of knowledge involves the critique of language, but the critique of language leads to the liberating thought that human beings, with the words available to their languages, ... never get beyond a pictorial representation of the world' (Mauthner, *Wörterbuch der Philosophie*, 1910–11: xi). This sceptical perspective, albeit without the pictorial theory, has developed, through Wittgenstein's philosophy of language games, into a widely influential current of contemporary thought. For this reason, as well as on account of the very different contributions to the philosophical analysis of language that have been made by G. E. Moore, Frege, Russell and Whitehead, and not least by Heidegger in the later phase of his thought (cf. Heidegger 1959), it has become a dogma that all philosophy *prior* to the linguistic turn, rather like European society before the French Revolution, is now revealed as profoundly obsolete.

The following examination of the first *Critique* attempts to determine whether this philosophy has inevitably forfeited its essential value now we have recognised the indispensability of language or the intersubjective character of knowledge, or whether, since the work is essentially concerned with other questions, it should properly be located 'alongside' rather than simply 'prior' to the philosophy of language. At any rate we shall here investigate the first *Critique* with a view to the possibility of developing a 'fundamental philosophy' which is framed neither in terms of the linguistic turn nor in terms of a more general discourse theory. In addition it is also noticeable that analytical philosophy itself has now turned away from its earlier almost

exclusive preoccupation with language as the central philosophical issue to concentrate its increasing attention upon the philosophy of mind, supplemented with contributions to ontology and to the theory of knowledge.

The history of Kant's own intellectual development itself already suggests an alternative conception of the task of philosophy beyond that of linguistic analysis. Kant himself once entertained the idea, like the advocates of a purely 'ideal language', of taking mathematics as his methodological paradigm and his *Physical Monadology* of 1756 furnished 'an example for the use of metaphysics insofar as it is intrinsically connected with geometry'. But Kant's essay on *The Introduction of Negative Quantities into Philosophy* of 1763 subsequently repudiates any imitation of mathematical method in philosophy precisely because the advantages expected of this approach have failed to prove themselves in practice (II: 289). In place of this methodology Kant now pursues a different path, oriented to the conceptual analysis of language, and argues that 'metaphysics must proceed entirely analytically insofar as its task is actually to clarify confused claims to knowledge' (*Principles*, II: 289). But although Kant was thus motivated, in the pre-critical period of his thought, by similar concerns to those of analytical philosophy, he later found himself forced, with the development of the first *Critique*, towards a quite different and alternative programme of philosophical method. (For a brief outline of Kant's pre-critical writings cf. Gerhardt 2002, Chapter 1).

1.3 Epistemic Cosmopolitanism

Kant's alternative approach promises significantly greater success precisely by virtue of its rich and differentiated character. And there is certainly no fundamental work of modern philosophy which exhibits a level of complexity that is comparable to Kant's text. The first *Critique* effectively represents, in the first instance, a 'metaphysics of metaphysics' as Kant himself puts it (*Letters*: Nr. 166/97), a second level metaphysics that reflects explicitly upon the possibility of metaphysics or fundamental philosophy in the usual sense. It is here that the full force of Kant's self-critical reflection makes itself emphatically felt: he interrogates the traditional claim of philosophy to represent a truly fundamental and universal systematic science and, in the course of his

critical examination, proceeds to subject philosophy to decisive limitations and restrictions with respect to its own possibilities.

Kant takes 'ontology' or 'general metaphysics', the prevailing fundamental philosophy or first level metaphysics of the age, as the point of departure for his own analysis. But this metaphysics is effectively transformed in two essential ways. In the first place, Kant's contribution to ontology is carried out entirely within the framework of a critical theory of knowledge and he expressly repudiates the idea of developing a theory of objects independently of a critical analysis of the faculty of cognition itself. And in the second place, Kant explicitly divides the theory of knowledge into two parts: the first, and more traditional, part presents 'metaphysical' theorems concerning space and time and the 'pure concepts of the understanding' (philosophy 1) which the second, intrinsically innovative, 'transcendental' part undertakes to demonstrate as the condition of the possibility of established and recognised sciences (philosophy 2). In this way philosophy 2 becomes an authentically philosophical and non-empirical scientific theory of mathematics and, above all, of (mathematical) physics, and thus establishes the new conception of transcendental laws of nature. But Kant also addresses the three philosophical disciplines that traditionally belonged to 'special metaphysics'. Here he examines three 'ideas' explicitly connected with the concept of the 'Unconditioned' (philosophy 3): the soul and the related question of immortality (rational psychology), the world and the problem of freedom (transcendental cosmology), the existence of God (natural theology). And finally, Kant discusses the limits and the possibilities of all philosophy (philosophy 4).

One might of course object that this 'all-destroying' critique effectively abolishes rather than transforms the enterprise of metaphysics (as Mendelssohn claimed in his *Preliminary Remarks* of 1785). But there are in fact four considerations which lead one to reject this claim. In the first place, Kant effectively preserves the literal meaning of the term meta-physics: something which transcends or goes 'beyond' (*meta*) experience and the domain of nature (*physics*). In the second place, Kant does speak, in the context of his 'Dialectic', about the transcendent objects of traditional metaphysics – God, freedom and the immortality of the soul – and explicitly ascribes a new transcendental (and thus specifically limited) significance to them. In the third place, we should also remember that the very paradigm

of metaphysics, Plato's theory of Ideas, does not address its metaphysical objects directly or immediately, but does so essentially within the context of a theory concerning the presuppositions of all knowledge and action. Lastly, in the fourth place, it is merely one part of traditional metaphysics that is actually 'pulverised' in the first *Critique*, and even this is based upon specific metaphysical considerations: the critical dissolution of 'special metaphysics' (philosophy 3) is accomplished through Kant's new and revolutionary 'universal metaphysics' (philosophy 1 and philosophy 2).

From a systematic point of view, it is only when this task has been fulfilled that philosophy can also take on the modest function of a 'stand-in' for 'empirical theories with strong universalistic claims' (Habermas 1983: 23; Lenhardt/Nicholsen translation: 15). But Kant's philosophical contributions to natural science (philosophy 5) all belong to the early pre-critical period, and thus fall outside the central focus of his mature thought.

The four central tasks that Kant addresses involve such a wealth of themes and problems that the first *Critique* in its entirety can be regarded as an 'encyclopaedia' of philosophical sciences. In comparison with the standard encyclopaedic treatises of the Enlightenment, however, Kant's text is concerned not with the sum of human knowledge as a whole, but, far more modestly, merely with philosophical knowledge. Unlike the great *Encyclopédie*, the first *Critique* is the work of simply one author rather than almost a hundred and fifty. Nor does it furnish us with a genealogical tree of all knowledge as preface to a cornucopia of historically accumulated learning in the Baroque manner. It undertakes nothing more or less than to unfold a genuine system of philosophy. In purely quantitative terms this system concentrates its attention mainly upon the domain of theoretical philosophy, including the question of a teleology of nature. But the principal interest of reason lies in the domain of morality, including considerations of moral theology. And even issues of political philosophy also make an appearance in the course of the first *Critique*. It is quite true that the work focusses, for the most part, upon the first of the three fundamental questions which Kant mentions in the text itself: 1. what can I know? 2. what ought I to do? 3. what may I hope for? (B 833). But we are inevitably driven on from this question to the second and third one as well. And since these three questions taken together ultimately also provide an answer to a fourth: 'what is man?' (*Logic*, IX: 25),

we can see that the work already implies a specifically philosophical anthropology. What we could thus describe as Kant's 'fundamental anthropology' is essentially to be found in the first *Critique* itself, rather than in his *Anthropology from a Pragmatic Point of View*, or in the 'practical' anthropology which functions as a supplement to his moral philosophy (*Groundwork*, IV: 388).

The current age of globalisation has bestowed new relevance and significance to an ancient philosophical claim. Now that a variety of very different cultures participate, no longer merely 'in principle' but rather visibly, in the single world that we all share, we clearly require an equally visible form of argumentation that is independent of specific cultures and can therefore claim trans-cultural and inter-cultural, rather than ethnocentric, validity. On analogy with an intrinsically global system of law and right, we could describe this form of thought as 'cosmopolitan' in an epistemic rather than merely juridical sense of the word.

The first *Critique* itself thus extends Kant's already well-known political cosmopolitanism into a form of epistemic cosmopolitanism that has hardly been properly acknowledged but is certainly just as important. And it also expands the principal interest of reason to encompass an explicit moral cosmopolitanism. At the meta-philosophical level I therefore undertake to defend a fresh and expressly cosmopolitan reading of the first *Critique* in its entirety (as already suggested in Höffe 2006, Chapter 2). On this interpretation the work attempts to present the structure of the single world that is common to all cultures from a theoretical point of view and to explicate the single faculty of reason that is equally common to all human beings. In opposition to an increasingly popular form of scepticism concerning the possibility of any thought that claims validity independent of any specific cultural and historical factors, to what we can call epistemological historicism, Kant would emphatically defend a kind of knowledge which 'holds for everyone as long as they can be said to possess reason' (B 848). Kant attempts to capture this knowledge through the concept of the synthetic a priori: a type of cognition that cannot be relativised precisely because it is intrinsically independent of culture or history. With this concept, which furnishes the inner basis for a *single* epistemic world, Kant inaugurated a programme that could well prove more important in our own age of globalisation than the linguistic turn which has now itself rightly returned, in the guise

of formal semantics, to the same thought of an epistemically *single* world.

As far as philosophy 1 and philosophy 2 are concerned, contemporary epistemological theories tend to concentrate their attention on Cartesian assumptions, which are then typically rejected by appeal to empiricist arguments. In this context, the consistently anti-Cartesian, but equally anti-empiricist, thrust of the first *Critique* is in a position to shed fresh light on the relevant current debates in relation to realism versus anti-realism and naturalism versus anti-naturalism.

As far as philosophy 3 is concerned, with regard to the theory of God, freedom and the soul, Kant succeeds in breaking the hold of both traditional metaphysics and its simple repudiation. But he thereby also uncovers an entirely new field for reflection and provides a more than simply pragmatic reason for the rightly vaunted progress of the natural sciences (cf. Chapter 20.1). Kant's approach also furnishes a genuine alternative to the kind of responses to mind-body dualism in Descartes that have now become standard in contemporary philosophy of mind and cognitive science (cf. Chapter 17.3).

1.4 Practical Philosophy in the Age of (Natural) Science

Kant's alternative programme also appears to enjoy a certain initial plausibility to the extent that it succeeds in negotiating a narrow and difficult path which neither overstates nor understates the role of philosophy on the one hand, nor overestimates nor underestimates that of the natural sciences on the other. Kant reconciles the philosophical interest in autonomous rational knowledge with the fervent commitment to experience of an epoch that has effectively been defined by the successes of the sciences. For the ever recurrent perspective of scientism, with its characteristic conception of the realm of genuine knowledge, the established sciences are not merely important, but rather all-important, a view that is bluntly repudiated in turn by a comprehensively sceptical attitude to the pretensions of science in general. In opposition to both of these positions Kant recognises the full significance of the sciences while nonetheless rejecting every form of intellectual imperialism. Kant carefully refrains from anticipating the results of the particular sciences, but concentrates instead on the preliminary and fundamental principles upon which they depend, while also addressing two domains which transcend the sphere of

competence of the particular sciences entirely: moral obligation and the rational hope which the latter serves to inspire.

Although mathematics and mathematical natural science play a particular role amongst the sciences in general, and have indeed exercised a decisive influence upon the self-understanding of the modern age, relatively few philosophers show any special interest in them today. From the historical point of view we can broadly distinguish five phases with respect to the specific relationship between philosophy and mathematics or natural science. In the first phase, which can be traced from Thales and Pythagoras through Aristotle (and his contributions to zoology) and on up to Descartes, Pascal and Leibniz, we can observe something of a personal union between the two fields: the important philosophers in question were themselves significant practitioners of mathematics or natural science in one sense or another.

In the second phase, one marked by sympathetic exchange between the two fields, many important philosophers have still made certain contributions to mathematics or natural science itself, but they have rather tended to concentrate upon the basic theoretical structure of these disciplines. Kant can already be numbered amongst these thinkers, along with Frege, Mach, Russell and Carnap. Indeed he could also be counted amongst the late representatives of the first phase insofar as he actually made a serious contribution to the explanation of the trade and monsoon winds (I: 254f.) and even suggested a characteristically modern definition of the smallest particles of matter as 'space-filling force' (*Monadology*, I: 482f.). Kant also argued for a plurality of star systems (galaxies) in his early work (*Natural History*, I: 254f.). And his theory concerning the rings of Saturn and gaseous heavenly bodies (*ibid.*, I: 290ff.) was later confirmed by the observations of Herschel and further developed by von Weizsäcker in relation to our own solar system. And if we ignore Descartes's theory of vortices, we could say that Kant is the first thinker to provide a purely scientific cosmology in accordance with the motto 'Give me matter alone and I shall construct a world from it', and entirely without recourse to the kind of divine intervention that Newton postulated in order to prevent the potential collapse of the solar system. Kant also responded to the phenomenon of the Lisbon earthquake and, without invoking either a Leibnizian theodicy or a contemptuous rejection of the latter in the manner of Voltaire, suggested a purely rational

explanation of the event in terms of the effects of subterranean explosions (I: 429ff.). Indeed, over a period of four decades, Kant regularly delivered lectures on a central subject of the time: a 'physical geography' which combined cosmic geography (concerning the place of the earth in the solar system as a whole), physical geography in the narrower sense (covering, amongst other things, the four realms of minerals, plants, animals and human beings), and a sort of political geography. Nonetheless, despite these substantial contributions, and an abundance of other interesting remarks and reflections on mathematics, physics, chemistry and physical geography (XIV), Kant should properly be regarded more as a philosopher of the natural sciences than as a natural scientist himself (for Kant's significance in the latter capacity cf. Adickes 1924–1925 or, more recently, Falkenburg 2000). But whereas Kant's empirical work on natural science is now of purely historical interest, his philosophical analysis of nature and of scientific method still possesses systematic significance today.

The later representatives of the second phase, whether we are speaking of scientifically trained philosophers (like Ernst Mach) or of philosophically inclined scientists (like H. von Helmholtz or J. H. Poincaré, or later Max Planck, Albert Einstein and Werner Heisenberg), coincide in time with the beginning of the third phase when otherwise significant philosophers pay little or no attention even to such revolutionary developments in scientific thought as quantum mechanics or the theory of relativity. If they did theorise, like some of the first generation members of the Frankfurt School, about issues arising directly from the natural sciences, they were properly and philosophically informed only about the application of science to the field of industry and technology rather than about the theoretical problems and questions of science itself. Nonetheless, with the theory of cognitive interests – and its claim that natural science is essentially oriented to the acquisition of control over nature – we can clearly see that (critical) social theory itself also makes a significant internal epistemic claim of its own.

In the fourth phase, that which is concerned with developing an ethic of scientific responsibility, fundamental questions internal to science itself are explicitly marginalised or excluded in order to subject the sciences to moral judgement precisely insofar as they are capable of directly influencing and transforming the life-world and the character of human life itself.

Finally, the fifth phase partly returns, in a substantive sense, to the typical considerations of the second phase. For, apart from certain specialist debates, it is specifically marked by an interest in articulating a unified, comprehensive and scientifically supported view of the world as a whole. But since philosophers have long since failed to establish a general consensus in such matters, it has now largely fallen to the representatives of natural science, formerly to the physicists, but now, with increasing confidence, to the biologists or practitioners of neurological and brain science. But since the relevant philosophical debates concerning such questions have become more and more remote from our everyday thought and experience, there is now a danger that specialist professional knowledge and expertise is uncritically combined with essentially superficial philosophical approaches and this can only produce general views of the world that are simplistic and naive.

We can express the only plausible alternative, freely formulated on analogy with Plato's remarks about the possibility of philosophers becoming kings, as follows: there will be no end to our problems with allegedly unified world-views until either natural scientists become philosophers or philosophers are prepared to engage seriously with natural science, until the competencies of both fields are somehow successfully brought together. From the explicitly philosophical perspective Kant's first *Critique* furnishes what has proved to this day to be a decisive clarification of the question concerning the possibility of an appropriately unified view of the world. In this sense it offers the epoch of the (natural) sciences two mutually supporting forms of philosophy: the 'aesthetic' and the 'analytic' unfold the constitutive elements of our *knowledge* of nature, which the 'dialectic' completes insofar as it provides the regulative elements that govern our ongoing scientific *research* into the field of nature.

Insofar as the first *Critique* represents a philosophical treatise on the empirical sciences it naturally also invites the objection that it has been rendered obsolete by later developments in scientific knowledge. Kant's assumptions concerning the exclusive validity of Euclidean geometry and Newtonian physics, along with its rigidly deterministic conception of causality, have in fact been overtaken by subsequent discoveries. But our own double perspective on the work will undertake to determine whether these assumptions also fatally affect the philosophical argument to the extent that the *Critique* itself must be

regarded as a failure as a systematic theory of scientific knowledge. One could of course attempt to read Kant simply as a Hegelian *avant la lettre* who merely wished to conceptualise the structure of the sciences of his own time, but such a relativising and historicist interpretation of his thought certainly contradicts the essential thrust of his own philosophical programme.

There is a further question which we must address to the first *Critique*. are philosophies 1 and 2 so intimately interconnected that the first metaphysical part and the second transcendental part can only carry conviction in strict conjunction with one another? Is Kant's conceptual grounding of mathematics, for example, entirely dependent upon his theory of space and time, and is this theory itself dependent in turn upon his theory of mathematics? And if so, does this involve the dangerous implication that one of the most attractive features of Kant's *Critique*, its intrinsic relation to physics and mathematics, only renders it less intellectually attractive and ultimately more vulnerable?

In the final analysis Kant is basically less interested in eliciting the pre-empirical presuppositions of experience than the possibility of morality and moral theology with its fundamental questions concerning the soul, freedom and God. For it is these ideas which appear to be directly threatened by the triumphant progress of the view of the world that is essentially defined by the perspective of natural science. In order to investigate the character of this threat Kant asks what we can (scientifically) know about the world and opens up a space for morality and moral theology precisely by understanding the limits of all possible knowledge.

If we simply read the first *Critique* as a theory of mathematics and mathematical natural science, and perhaps also as a universal theory of knowledge, we inevitably fail to grasp this essential point. For the practical, or more precisely, the explicitly moral intention of Kant's philosophy is first already manifest in his theory of knowledge itself rather than merely in his explicit theory of morality. Anyone who reads the work through to its final part, the 'Doctrine of Method', will come to recognise what is already implied in the introductory motto and the preface of the second edition: the *Critique* as a whole is practical philosophy in the emphatic sense of the word.

This perspective is associated with the enormous importance that is here ascribed to morality. In opposition to the general tradition that

runs from Aristotle to Descartes at least, morality interpreted as pure practical reason thus becomes an integral component of metaphysics or fundamental philosophy. The primacy of practical reason thereby confers a pre-eminent significance upon morality itself. While Kant restricts pure theoretical reason within its own limits and subjects the metaphysical excesses of the tradition to a rigorous examination, he essentially elevates, by contrast, the status and range of morality as an expression of pure practical reason.

Part I

The Full Critical Programme

The first *Critique* certainly pursues a sometimes tortuous course. But considered in its entirety it is actually as carefully composed as a great piece of music. The 'Preface' to the first edition sketches the dramatic predicament which makes the *Critique* necessary in the first place and is only finally clarified and resolved, after a long train of argument, in the 'Dialectic'. The concluding section on the 'Doctrine of Method' also takes its proper place within overarching structure of the book. It is only here that important concepts from the original 'Preface' – 'battle-field', 'the age of criticism' and 'free and open examination' – are fully explained. And it is only this part of the work which, above all, elucidates that contribution to the common good which the motto prefaced to the second edition emphatically announces. The structure of the underlying argument takes its point of departure from the motto and comes to rest in the final sections of the entire work. The motto and the dedication, together with the prefaces of both editions, and the 'Introduction', presents the outline of a complex philosophical programme that was indeed composed, like the overture to an opera, at the end but placed at the beginning and encourages our attention by the foretaste it affords of what is still to come. Seven coupled themes go to make up the governing melody of the *Critique* which offers a new foundation, as complex as it is comprehensive, to the whole of modern philosophy.

CHAPTER 2

INNOVATION AND TRADITION

Even a radical philosophical intervention like Kant's cannot of course be regarded as a total revolution. The fact that he takes a citation from one of his predecessors as a motto for the first *Critique* itself indicates that his new conception of philosophical 'science' is not intended merely to replace or transform everything that has previously been thought or achieved in this field. The fundamental themes of Kant's thought can conveniently be presented in a series of pairs which show how he supplemented traditional themes of philosophy (indicated under odd numbers) with distinctive new themes of his own (indicated under even numbers).

2.1 Knowledge in the Service of Morality

Early modern philosophy explicitly encouraged the renewal of the arts and sciences as a direct contribution to the genuine achievement of human well-being. In the period of the Enlightenment, as paradigmatically expressed in the great *Encyclopédie*, this approach even led to the expectation that the comprehensive and systematic accumulation of human knowledge would finally make 'our descendants not only more cultured, but also happier and more virtuous' (V: 635–48). Rousseau mounted a vigorous attack upon this expectation in terms that also liberated Kant, as he himself acknowledged, from his own original overestimation of science itself (*Remarks*, XX: 33).¹ In this sense, and contrary to everything we might otherwise expect, the first *Critique* begins from an emphatically practical rather than a merely theoretical interest, as the motto with which he prefaced the second edition of the work makes abundantly clear.

But Kant actually took his motto not from Rousseau, but from that partisan for the cause of modern science, Francis Bacon. For, in

opposition to Rousseau, Kant does not defend his practical interest (Theme I) through an attack on the sciences, but links it directly with a positive evaluation of the latter (Theme II). And indeed his book is clearly animated by the pathos of a fresh beginning. But what Bacon's *Instauratio magna* merely anticipated – a major renewal of thought – Kant actually accomplishes with regard to one domain of the traditional sciences: namely metaphysics itself (for another example of this pathos of radical renewal cf. *Principles*, II: 283).

The quotation from Bacon, which has rarely been explicitly discussed, also serves to express the theoretical intention of bringing a constantly repeated error to an end. But Kant's intention is nonetheless pre-eminently concerned with countering 'all those attacks on morality and religion' which he hopes 'to silence for all time through the clearest demonstration of the ignorance of their opponents' (B xxxi). The concern for human respect and well-being, that is expressed in the quotation itself, must therefore clearly be understood in an emphatically moral sense rather than in Bacon's utilitarian terms. The first edition of the *Critique* was of course equally governed by this ultimately moral purpose, even if he only clearly emphasised it in the 'Canon' and 'Architectonic' towards the end of the text. But in the second edition of the work Kant deliberately places the motto right at the beginning in order to obviate any danger that this motivation might be obscured or overlooked given the length and density of his text.

There is also another aspect of the quotation from Bacon which might seem to conflict with the one we have just mentioned. The contrast between our essential 'human' interests and the pre-occupations of the 'Schools' (*secta*; cf. B xxxiiff.) suggests Kant's essentially cosmopolitan interest in the fate of humanity in general. The *cosmopolis* in question refers not to the world community in the usual sense but to the world of knowledge and of those who 'thirst after knowledge', and thus to an eminently epistemic community (cf. B 789). On account of its intrinsically democratic character we could also describe this community as an 'epistemic world republic'. The commitment to universality is also cosmopolitan insofar as the philosopher is 'always the exclusive depositary of scientific knowledge that is useful to the public' (B xxxiv). The first *Critique* therefore appears to serve two, and at first sight apparently competing, masters: both an epistemic community and an extra-epistemic task concerning the (moral) well-being of all human beings.

This double focus can itself be read in two ways. According to the primarily theoretical reading of the work Kant is principally concerned with what we could call epistemic well-being, although he is also gratified to see that the latter exercises a certain influence upon our practical-moral well-being as well. This reading appears to be supported by the fact that, for hundreds of pages of the text, Kant pursues purely theoretical tasks like the conceptual justification of our claims to objective knowledge and the effective establishment of philosophy itself as a rigorous science. Yet the ‘final end’ of reason clearly also concerns three questions - the freedom of the will, the immortality of the soul, the existence of God – in which the purely theoretical interest appears to be rather minimal (B 826). On the other hand, the extra-epistemic, and publicly shared, interest in rooting out generally destructive doctrines like materialism, fatalism and atheism is clearly considerable (B xxxiv). We should, therefore, adopt the alternative and pre-eminently practical reading of the first *Critique*. On this account of the work, epistemic well-being is merely an (admittedly indispensable) means for that principal ‘moral’ purpose which alone is what properly matters as far as the constitution of our reason is concerned (B 829).

Theme I: Reason, and the first Critique itself, is concerned in the last analysis with morality; the community of all knowledge, the epistemic world republic, stands ultimately in the service of a moral world republic.

In Plato’s *Republic*, itself almost a compendium or encyclopaedia of central philosophical themes, we can also see that philosophy in its entirety stands in the service of morality. This perspective was repudiated by Aristotle who divided the domain of philosophy into two parts, contrasting a theoretical philosophy, which pursues knowledge for its own sake (*Metaphysics* I, 2, particularly 982b26), with a practical philosophy which seeks knowledge that is relevant to our morally practical interests (*Nicomachean Ethics* I, 3, 1095a5f.; X, 6–7). And we can still find Descartes attempting to ground the superiority of the Europeans over the barbarians specifically by reference to philosophy and arguing that there is no greater advantage for the state than its possession of true philosophers (*Principia philosophiae*, the ‘Letter to Picot’). Kant’s first *Critique* effectively overcomes the opposition between these two approaches to philosophy.

The first two main parts of the *Critique*, the ‘Aesthetic’ and the ‘Analytic’, investigate the problem of mere knowledge as such,

independently of the question concerning any moral significance it may possess. Even the third main part of the text, the 'Dialectic', contains a purely theoretical element in the regulative principles that are claimed to govern the scientific investigation of nature. And this part has a merely negative significance with respect to morality in the sense that it simply opens up a certain conceptual space for the latter which had previously appeared to be threatened by a scientific approach dominated by an entirely causal mode of explanation. It is only in the fourth main part of the text, the 'Transcendental Doctrine of Method', that Kant finally and directly pursues a specific moral purpose. If he had simply treated the first theme alone, then his *Critique* would have remained a traditional enterprise. It only reveals its truly innovative character in its rejection of the mere instrumentalisation of knowledge. In spite of the priority of morality in Kant, science itself continues to retain full value in its own right.

Theme II: *The first Critique serves the ultimate moral purpose in a pre-eminently indirect fashion by refuting the errors that threaten this purpose; and it thereby overcomes the opposition between the monistic perspective of Platonic philosophy and the Aristotelian division of philosophy into two separate domains.*

If we make the attempt, alerted by the prefatory motto, to read the *Critique* through Baconian eyes, we will also find other relevant points of shared contact. These extend to both the diagnosis and the criterion, and even the general direction, of the central problem and the ensuing analysis. For Kant shares Bacon's view that the sciences - and here in the case of the *Critique* the fundamental science of 'metaphysics' - have been characterised by countless disputes but very few achievements, that the proof of such achievement can only lie in the genuine progress of knowledge, even though such progress has hardly properly begun, that we must therefore seek out an entirely new method and prosecute experiments on this basis - and in the case of the *Critique* this means making an experiment of reason itself. Kant agrees further that the human mind must be liberated from its previous errors and thereby cease to disparage the role and evidence of the senses, that we must acknowledge that we possess two cognitive faculties, those of sensibility and the understanding, and must therefore seek a middle path between the complementary extremes of dogmatism/rationalism and empiricism. And even for Kant's famous

remark that ‘thoughts without content are empty and intuitions without concepts are blind’ (B 75) there is actually a Baconian precedent. For in his discourse in ‘Praise of Knowledge’ Bacon reproaches the universities for marrying ‘the mind of man’ to ‘vain notions and blind experiments’ (*Works*, VIII: 125). Even if in his own theory of natural science Kant, unlike Bacon, places little value on empirical experiment and no special value on the technical and productive application of science to the amelioration of human life, the *Critique* so clearly breathes the Baconian spirit that we can see that the genuine respect expressed in Kant’s choice of motto is entirely appropriate (for Kant’s positive appreciation of Bacon, cf. *Anthropology*, Section 56 and *Logic*, IX: 32).

2.2 The Aporetic Quest for Knowledge

Over two hundred years ago Hegel, himself a metaphysician of note, described ‘metaphysics’ as ‘a word from which everyone flees like the plague’ (*Werke*, II: 575). But we have no categorical ground to lament the fact that Kant himself retains the word, and indeed remains true to its proper subject matter. For ever since his own metaphysical reflections first began he had always entertained a rather modest conception of its task: as ‘a philosophy that is concerned with the first principles of our knowledge’ (*Principles*, II: 285), metaphysics is initially nothing more nor less than a fundamental theory of knowledge. It is quite true that metaphysics was generally repudiated after it reached its culminating form in German Idealism: both Kierkegaard and Marx, in different ways, attacked Hegel’s metaphysical claims and ambitions. Nietzsche regarded metaphysics as a science ‘which treats of the fundamental errors of mankind – yet as if they were fundamental truths’ (*Human, All Too Human*, I: No. 18). And in 1932 Carnap pleaded for the final ‘Overcoming of Metaphysics through the Logical Analysis of Language’. But the rhetorical force of these various rejections only obscures the fact that the critics themselves remained true to metaphysics in a fundamental sense. Under the guise of the critique of metaphysics such critics are ‘only’ obeying the basic impulse of modernity, the ‘*morale canonique du changement*’, expressly distancing themselves from all previous attempts to produce a ‘fundamental philosophy’, while simultaneously erecting new forms of metaphysics, once again raising questions and answers which effectively go beyond

(*meta*) the realm of nature as the object of science (*ta physika*). Anyone who is nonetheless still disturbed by the use of the word 'metaphysics' itself can speak instead of 'fundamental philosophy', or indeed simply of 'philosophy' (in the autonomous or independent sense). For the Kant of the first *Critique*, at any rate, the terms 'reason', 'metaphysics' and 'philosophy' are largely interchangeable ones (cf. B 868f.).

In the last analysis Kant's 'metaphysical critique of metaphysics' is motivated by a kind of diagnosis which should also be capable of convincing the avowed sceptic. Whereas more recent forms of fundamental philosophy have rarely acquired any practical significance for life in general, we must recognise that the first *Critique* in its entirety, and not merely its principal moral-practical dimension, constitutes a fundamental anthropology of directly existential import. For its questions are 'given over to us through the very nature of reason' (A vii). And 'reason' here signifies not so much a specifically philosophical faculty or capacity as simply 'common human reason' itself (A viii). And this Kantian perspective already implies a decisive democratisation (*Perpetual Peace*, VIII: 369) of Plato's famous ideal of the philosopher king (*Republic* V, 473c–d). Even if the 'professional' elaboration of philosophy is reserved for the qualified philosopher, everyone has the potential to grasp the fundamental issues at stake.

Theme III: *Insofar as its questions are given to us by the very nature of reason, philosophy in its entirety, including theoretical philosophy, possesses an anthropological and existential significance.*

If Kant were simply content to explore this theme, he would, once again, have remained a traditional thinker. For although the idea that 'metaphysics' effectively possesses an existential significance may sound rather strange to us today, it is nonetheless entirely consonant with the philosophical tradition. It is already suggested in Plato's conception of the philosopher king, and again by the fact that Spinoza could present his metaphysics under the title of *Ethica*. Aristotle's metaphysics also serves a kind of existential, if pre-eminently epistemic, interest in satisfying the natural human desire to know (*Metaphysics* I, 1–2). Kant follows Aristotle insofar as he too hopes to secure for 'human reason complete satisfaction with regard to its eager desire for knowledge' (B 884). There is a sense here in which the path of metaphysics is here presented, for all its subtlety, in a rather simpler way. For if we follow Plato's simile of the cave (*Republic* VII, 514a–519d), we

must concede that we human beings initially lack an intrinsic relationship to metaphysics precisely because we are captivated by an entirely false awareness of ourselves and the world. But if we follow the Kantian and Aristotelian idea of the natural potential and intrinsic possibility of realisation of human nature then we always already find ourselves at least embarked upon the path that leads to metaphysics. For metaphysics is as necessary as 'breathing' as far as 'the reflective human being' is concerned (*Prol.*, IV: 367).

But Kant is also innovative with respect to Aristotle through his specific diagnosis of the problematic situation in which reason finds itself burdened by questions which it 'is unable to ignore, but which [...] it is also incapable of answering' (A vii). If it were merely the case that such questions can never be answered in principle, then we could adopt the 'positivist' strategy and simply abandon them altogether. If things turn out to be dangerous once we engage in mountaineering or deep sea diving, we can of course always give up such arduous pursuits. But the questions at stake here would appear to be unavoidable for us. That is precisely why reason appears to be fractured within itself. Our natural desire for knowledge looks as though it is intrinsically aporetic and man himself appears as a case of 'crooked timber' from the epistemological as well as the moral perspective (*Idea*, VIII: 23; *Religion*, VI: 100): our own unique place in the cosmos, human reason itself, exposes us to every 'senseless whim and delusion of the imagination' (*CPrR*, V: 120) and metaphysics, once the undisputed queen of the sciences, has become an arena of never-ending dispute (A viii).

While controversies are hardly new to philosophy, it is surely a different matter when they continue to cling to views that are not simply tentative or provisional in character, but have themselves been so carefully pondered and considered that we can neither unmask these controversies as simple errors or products of the snares of language, nor resolve them by carefully qualifying and refining the views in question. Such controversies are grounded in the fractured character of reason, in a civil war of reason with itself. For the authority which 'represents the highest court of judgement with regard to every dispute comes into direct conflict with itself' (B 768).

Expressed in terms of the relevant philosophical schools and traditions, we are confronted here with a fundamental conflict between rationalist 'dogmatism' and an empiricism that makes common cause with scepticism. The former party includes, as well as Descartes, the

'edifice of Leibnizian-Wolffian philosophy' (B 329) which Kant himself had originally supported. If Kant later accuses the representatives of this school of dogmatism, it is not on account of any simply arrogant presumption on their part, but because of a certain 'second-order' presumption which inevitably raises exaggerated claims to knowledge in the absence of a preliminary critical analysis of the faculty of cognition itself. Kant therefore occasionally describes empiricism too as 'dogmatic' insofar as it 'boldly denies whatever transcends the sphere of sensuous intuition' (B 499) and thus equally claims too much precisely because it has also failed to undertake a proper critique of our capacity for knowledge. And we should also remember that rationalism certainly recognises sensuous experience as a significant source of knowledge. Descartes, for example, explicitly wishes to learn to read the 'great book of the world' (*Discourse on Method*, Part I). But he also believes that it is possible to extend our knowledge through the exercise of rational thought alone.

Since the 'dogmatists' cannot even agree amongst themselves, metaphysics falls into a situation of intellectual anarchy which only encourages the party of the sceptics (and here Kant is thinking pre-eminently of Hume) to 'make short work with metaphysics in its entirety' (B xxxvi). A third party, the empiricism of the 'celebrated Locke', had already rejected the (rationalist) doctrine of 'innate ideas' and refused to recognise anything but inner and outer experience as a source of genuine knowledge. Since scepticism can also be interpreted as a form of empiricism (B 127f.), we find a rationalist dogmatism struggling in the matter of metaphysics with a empiricism that has itself eventually turned sceptical (we can see from the third section of Kant's discussion of the antinomies that the conflict involves Plato versus Epicurus, as well as Leibniz/Wolff versus Locke/Hume). It is quite true that careful study of the history of philosophy places certain question marks over the tendency to oppose these different traditions so unambiguously to one another. Nonetheless, Kant himself discovers a criterion, namely the synthetic a priori (cf. Chapter 4.1), which enables us to clarify the entire complex dispute between them in a quite decisive manner.

Theme IV: The existential significance of philosophy is first revealed negatively, with the internal contradictions of reason which generate endless disputes and thus places the idea of a truly independent and autonomous science of philosophy in question.

2.3 Judicial Critique

Since the original certainty and self-confidence of the Enlightenment has been shaken, we have become accustomed to speaking of the alienation or diremption in this regard. Rousseau reacted to this problem in a relatively 'natural' or naive fashion by lamenting the loss of an allegedly original unity of human life, even if he had no real intention of trying to restore it directly. On Hegel's alternative analysis of the situation the experience of 'diremption' itself harbours a creative potential which ultimately helps to encourage concrete human freedom. It may also be that our aporetic natural potential contains a creative dimension which our desire for knowledge must 'try out' in order to develop itself. But the kind of diremption which Kant has in mind, namely 'contradictions' (A viii) which involve a 'self-misunderstanding on the part of reason' (A xii), is quite another matter.

Theme V: The first Critique attempts to resolve the fundamental dispute between philosophers by attacking its original root in the internal contradictions of reason.

In this connection Hume had already pointed out the 'eternal contradictions and disputes' of philosophy (cf. B 730), but he had been quite unable to specify or resolve them properly within the medium of reason itself. He can only free himself from the 'melancholy' into which he has therefore fallen through an appealing, though intrinsically non-philosophical, strategy of social diversion: 'I dine, I play a game of backgammon, I converse, and am merry with my friends' (*A Treatise of Human Nature* I, IV, vii). This approach can readily be presented as a new way of criticising the metaphysical enterprise. Since metaphysics, with all its contradictions, only arises once we abandon the shared world of everyday communication, such contradictions will vanish if we simply renounce metaphysics and turn back to the world of experience and the senses, the world we can all already enjoy in its purely sensuous character. But this kind of critique of metaphysics intrinsically overlooks the origin of these contradictions in the heart of reason itself. And they arise not from the fact that we tend to abandon our shared experience of the world, but rather from our inevitable need to question further. In this regard, as Hume himself recognises, the appeal to social diversion is less of a proper decision than an act of repression which can afford only temporary relief from the difficulty.

In this connection Kant rightly speaks, therefore, of 'activity and entertainment, which is actually a mere diversion undertaken in order to silence the troublesome call of reason' (*Prol.*, IV: 381).

Kant's alternative strategy of seeking a solution to these difficulties within reason itself allows him to make three specific advances over Hume. He identifies the relevant contradictions with greater precision, he diagnoses their genuine source, and he indicates the appropriate therapeutic response. In place of the old pre-Humean 'speculative wars' of philosophy and of Hume's essentially pragmatic repression of the problem, Kant proposes something that he had already suggested in his earlier writings (I: 7ff.; 387): a trial in a court of judgement. The philosophical tradition has of course been familiar with the challenge of scepticism from the beginning. Aristotle even attempted to counter the most radical form of scepticism which had contested the very principle of non-contradiction (*Metaphysics* IV, 4), and Descartes's proposal for a radical new beginning for philosophy was based explicitly upon the principle of doubt itself. But the innovative character of Kant's *Critique* lies in the fact that he recognises scepticism as a logical extension of empiricism, that he directly confronts empiricism with rationalism, and overcomes the opposition between sceptical futility and dogmatic defiance (B 434) through a judicial process of examination. In the course of this examination Kant will overcome other oppositions as well, like that between (French) materialism, which denies the immortality of the soul, and the spiritualistic metaphysics which claims to prove the reality of personal immortality.

Kant shows little interest in 'coining new words' since this involves 'a claim to legislation in language that seldom succeeds' (B 368f.). Most of his technical expressions are taken over from the modern philosophical tradition: 'perception', 'intuition', 'pure', for example, are all found in Locke's *Essay* and Leibniz's *Nouveaux Essais*. Other expressions, like 'category', 'transcendental', 'analytic' and 'dialectic' come from the Aristotelian tradition of German philosophy, whereas Kant's use of the term 'idea' derives directly from Plato. Some of the other technical terms of the first *Critique*, such as 'amphiboly', 'antinomy' and 'paralogism', can also be found in certain handbooks of the time, like those of Meier and Zeller, although Kant himself deploys them in subtly different ways.

The word 'critique', as it figures in the title of the work, derives, on the other hand, from the tradition of *ars critica* which goes back

to Cicero and was taken over into the French term *critique* in the 17th century. As the art of delivering an informed judgement concerning the value, or otherwise, of something under consideration, critique acquires an aesthetic, and pre-eminently literary, significance in Lessing. But the term was soon extended to apply to almost everything, initially to all kinds of texts and subsequently to all kinds of traditions and institutions, and eventually became a central term of the Enlightenment itself insofar as it now served to designate the capacity to distinguish between the true and false in general (cf. Tonelli 1978). Thus Kant uses the term ‘critique’ in neither a negative and destructive sense nor in a positive and affirmative sense, but rather in the commonly accepted sense in which we speak of literary or artistic criticism as an exercise of ‘judgement’. But Kant also deploys the term in a quite new thematic and methodological context.

From the thematic point of view Kant directs his critique upon the unusual object: namely ‘pure reason’ as the highest faculty of human beings. As pure theoretical reason, this faculty claims to furnish knowledge independently of experience, and as pure practical reason it claims to determine the will independently of empirical incentives. From the methodological point of view Kant develops an image from the article on ‘critique’ in the great *Encyclopédie* (IV: 494) which explicitly demanded that we should appeal to the tribunal of truth (‘appeler au tribunal de la vérité’). He recommends a genuine trial, along with all its elementary conditions and procedures of justice, as ‘a free and public examination’ (A xi) that accepts the full burden of proof.² And in order to leave no doubt about his meaning, Kant explicitly orients his own critique, as distinct from literary or artistic criticism, to ‘eternal and changeless laws’ (A xiif.).

Whether Kant is thematically alluding here to both dimensions of reason - theoretical or speculative reason and practical reason - is initially unclear. Insofar as the title of the work simply speaks of ‘pure reason’, and the text itself refers to ‘the faculty of reason in general’ (A xii), or even to ‘the critique of both speculative and practical reason’ (B xliii), it appears as though we are concerned with reason in its entirety. On the other hand, since Kant also describes his enquiry as ‘a critique of pure speculative reason’ (B xxii), and even seems to doubt the possibility of a transcendental philosophy of morality (B 28f.; cf. Chapter 4.4.3 below), he appears to waver between a narrower thematic concerned solely with theoretical reason and a broader one

that also addresses the function of practical reason. But in fact this reflects an essential insight that Kant will only unfold in the course of the *Critique* itself. He begins with the internal conflict of metaphysics, with the claims of pure reason itself, shows that its metaphysical pretensions are unfounded, and then asks, before accusing pure reason in its entirety of mere presumption, whether it might not prove successful in its practical rather than theoretical employment. Since the examination of this latter question yields a positive result, pure reason in its theoretical sense is subjected to a pre-eminently negative critique, while pure reason in its practical sense is subjected to a positive critique. It is quite true that the positive critique involves a fundamental epistemic qualification which dissolves our aporetic desire for metaphysical knowledge and compels it to accept something short of knowledge: the traditional metaphysical objects of God and the soul are not accessible to us in the mode of knowledge at all, but merely in the form of (rational) faith (cf. Chapter 21.3 below).

The fact that the title of the book does not specifically refer to 'theoretical' reason as we might expect also indicates something else. For it implies that in 1781 Kant believed that he only needed to produce a single 'critique' of reason. It is quite true that he did not share the premature assumption that there can only properly be a 'fundamental philosophy' for the domain of theoretical reason, and therefore only one form of metaphysics in the singular. For according to one of his letters to Herz (*Letters*: No. 79/49), it is clear that by the end of 1773 Kant was convinced that his fundamental philosophy must be articulated in a twofold manner. And it is in this sense that the *Critique* speaks on two occasions of a (theoretical) metaphysics of nature and a (practical) metaphysics of morals (B xliii and B 869). But in 1781 Kant believed that the critique of reason required for these two parts of philosophy could be accomplished in a single work. For insofar as the first *Critique* restricts theoretical reason to 'the limits of possible experience' (B xix), Kant believes that it already prepares the ground for practical reason itself.

Kant's judicial critique is pre-eminently modelled on the example of a civil trial. For he is primarily interested not in convicting or clearing an accused party, but in 'determining both the sources and the range and limits of metaphysics, albeit all in accordance with principles'. But the two other forms of critique we have mentioned are also partially legitimated here. In the first part of the work Kant secures the justified claims of reason: an affirmative critique legitimates the status of our

scientific knowledge. The second part of the work, on the other hand, repudiates the groundless presumptions of reason (A xif.) and thus unmasks the claims of traditional metaphysics. This negative critique does incorporate certain elements of a criminal trial precisely because, in transgressing its proper limits, reason is also ‘punished’ by losing itself, for example, in fallacies, antinomies, and failed demonstrations of the existence of God.

Since pure reason must, by definition, be entirely independent of experience, its own possibility can only be investigated independently of experience, that is to say, by reason itself. In Kant’s court of judgement reason assumes at least five roles: it is at once the accused, the prosecution, the defence and, above all, the judge, but also itself enacts the laws in accordance with which it passes judgement. For the philosopher, in the sense of the ‘cosmical concept’ of philosophy (cf. Chapter 22.2 below) and as a personified ideal, is ‘the lawgiver of human reason’ (B 867).

Theme VI: With a view to resolving the perennial disputes of philosophy Kant institutes a critique of reason as a trial in which reason sits in judgement upon itself.

The judgement that is finally passed here turns out to be a judgement of Solomon. The process of examination to which reason subjects itself in the course of the critique results pre-eminently in a deliberate self-limitation. Kant certainly undertakes to represent the rationalist case for pure rational knowledge and thereby counter the generally harmful doctrines of materialism, fatalism and atheism. But he also doubts whether dogmatic metaphysical claims about freedom, the immortality of the soul, or the existence of God are required in this connection at all. For these claims cannot exert the slightest influence upon a public that is unfitted to ‘such subtle speculations’ in the first place (B xxxii). And considerations arising from the self-limitation of reason are quite sufficient to indicate the possibility of maintaining opposing claims in this regard.

The first major part of the *Critique*, the ‘Aesthetic’ and the ‘Analytic’, presents us with the relevant lawbook, so to speak, with which the speculative disputes of the metaphysical tradition are subjected to a preliminary examination. In opposition to empiricism, it is discovered that there indeed conceptual foundations, independent of experience, which demonstrate in turn, in opposition to scepticism concerning science, that objective knowledge is possible. But this knowledge, in

opposition to rationalism, is restricted to the realm of possible experience. In the second major part of the text, the 'Dialectic', the trial of metaphysics is rigorously pursued and the dispute in question is decisively resolved: reason has no access to objects that transcend experience and is quite incapable of acquiring any knowledge in this regard. Finally, in the third part, the 'Doctrine of Method', philosophy becomes 'the science of the relation of all knowledge to the essential interests of reason' (B 867). It is here that the governing practical interest of the whole work is fulfilled. The philosopher no longer appears as a 'virtuoso of reason' who, like the mathematician, 'merely speculates' (*Encyclopaedia*, XXIX: 7). For he now takes over the aforementioned role of the lawgiver of human reason.

2.4 A Philosophy of Experience

Kant thus concurs with Plato and Aristotle, the Church Fathers of ancient thought, in one respect: fundamental philosophy does not leap beyond the level of ordinary science and knowledge, but rather builds upon them. In the parable of the cave Plato suggested what he later elucidated with the image of the divided line (*Republic* VI, 509c–11d): knowledge begins with supposition (*eikasia*), and rises through belief (*pistis*) to conceptual thought (*dianoia*), and advances from there, the level of mathematics and the deductive sciences, to the doctrine of Ideas and reason itself (*noesis*). Similarly, in his *Metaphysics* (I, 1–2), Aristotle does not attempt to compete with scientific knowledge, but strives rather to develop it and go beyond it in an essentially immanent manner. And in Book Lambda he does not assure himself of God, as the ultimate metaphysical object, in a direct or immediate fashion, but only on the basis of a theory of nature itself. Thus it is also in relation to the sciences, namely to those principles which reason 'has no option save to employ in the course of experience, and which this experience at the same time abundantly justifies it in using' (A vii), that the unavoidable questions of the first *Critique* already force themselves upon us. Metaphysics can therefore only be established by addressing the (natural) sciences and uncovering the conditions which render the objectivity of all scientific investigation of nature possible in the first place.

Theme VII: *Autonomous philosophy, still in accordance with the traditional perspective, begins as a theory of the objective experience which the natural sciences themselves secure.*

The natural scientist attempts, by means of specific principles, to gather the manifold content of experience into a structured whole that itself involves a plurality of laws (here we may think of the achievements of Galileo, Kepler and Huygens, and of the way in which Newton then integrated their results into a more comprehensive theory). Since we can always advance beyond these particular principles, reason is driven on to seek out ever more remote conditions, although it can never reach those literally meta-physical entities, in the sphere of the unconditioned, that ‘overstep all possible empirical employment’ (A viii).

Now of course reason could content itself with remaining at a level that stops short of metaphysics. Newton himself certainly advanced into the further territory of metaphysical questions when he claimed at the close of his principal work, the *Principia*, in the ‘Scholion generale’, that his own ‘system of the world’ already presents an irrefutable indication of the existence and the power of God. But such considerations would soon appear alien and redundant to the natural scientists who came after him. Kant appears to follow their example in the sense that, although he boldly steps towards the very border of metaphysics, he simply concerns himself in the first instance with the previously unexamined presuppositions of mathematics and mathematical natural science: with space and time, with causality and the mathematical formulation of laws of nature.

According to neo-Kantians like Hermann Cohen (1885²), the first *Critique* is essentially a ‘theory of experience’, whereas a critic of neo-Kantianism like Martin Heidegger (1929, Sections 1–3) claimed it should be interpreted as a contribution to metaphysics. Kant’s thought actually presents a complex perspective that does justice to both perspectives: philosophy or metaphysics (on four levels) precisely *as* a theory of experience. Philosophy 1 is concerned with the basic a priori elements of all experience: space and time as the pure forms of intuition and the pure forms or categories of the understanding, like substance and causality. Having successfully accomplished this thematically traditional task, philosophy 2 erects a new transcendental theory of science which exhibits the aforementioned elements as the

condition of the possibility of science itself, revealing space as the presupposition of geometry and causality as the necessary conceptual framework of physics for example. Only once this has been accomplished does philosophy 3 turn to the typically metaphysical objects of the soul, freedom and God. The ensuing investigation dismantles the traditional form of 'special metaphysics' and supplements the theory of experience with the only thing that has legitimately survived the preceding analysis: the regulative employment of the 'Ideas'. Finally, philosophy 4 explicitly reflects, as a meta-philosophy, upon the limits and possibilities of philosophies 1, 2 and 3.

Theme VIII: *The first Critique justifies objective experience by means of typically philosophical a priori elements. Philosophy demonstrates its autonomy for the first time through this demonstration.*

2.5 And the Alternative of Naturalism?

On the first two levels of philosophy the unavoidability of the fundamental questions is so evident that one can only really sustain a comprehensive scepticism concerning metaphysics at the cost of repressing their significance altogether. One influential contemporary strand of thought, the naturalism that has been inspired by W. O. Quine (e.g. 1981) emphatically renounces all 'fundamental philosophy' in the sense we have described and delegates the task of developing a theory of knowledge entirely to the empirical sciences. Without wishing in any way to deny the outstanding achievements of the cognitive sciences (cf. Bechtel and Graham 1998), we should recognise that there are pressing objections, or at least questions, that cast doubt upon this total rejection of the role of philosophy (cf. Chapter 12.3 below).

Even if space and time, substance and causality cannot be shown to possess a certain a priori core, the relevant demonstration of this argument belongs, at least thematically, to philosophy I. And we must say the same for the further claim that the (philosophical) theory of knowledge and the empirical sciences, and in this context especially psychology, are mutually complementary. Two mutually complementary sciences cannot simply be identical with one another, and the relatively autonomous contribution of science possesses a specific value

of its own which in turn requires the further autonomous contribution of philosophy. Nor can it be ignored that the very concepts of knowledge and science themselves involve normative aspects in the form of criteria which serve to distinguish knowledge from mere opinion, truth from error, universally valid assertions from purely private ones. These aspects are certainly implied in the cognitive sciences, but they are not expressly thematised here. They clearly transcend the specific interests and competence of such sciences

It is also extremely difficult to escape the problems that are addressed in philosophy 2: the question why, and to what extent, geometry depends upon spatiality and why physics, along with other sciences, depends upon the conceptual framework of relations of cause and effect. Those who nevertheless insist on rejecting all 'fundamental philosophy' inevitably remain dogmatic positivists, however critical they may be with regard to the original Vienna Circle.

The authentically metaphysical concepts which feature in philosophy 3 may appear particularly discredited today, but Kant develops their significance upon the basis of the first two levels of philosophy, as is confirmed by Theme VII above. The questions concerning the temporal beginning of the world and the character of the world as a whole can hardly fail to be of interest even to a naturalistic theory of knowledge, although they also immediately threaten to contaminate this allegedly non-metaphysical perspective with typical issues of fundamental philosophy. Yet the idea of a metaphysics explicitly derived from a direct consideration of the sciences remains problematic. However attractive the idea may be on account of its emphatically substantive character, this very aspect also renders it more vulnerable insofar as it risks becoming dependent upon the state of knowledge in specific sciences for which it is not itself directly responsible. According to Michael Friedman (1992), for example, the first *Critique* presupposes two bodies of theory, namely Euclidean geometry and Newtonian physics, both of which can claim only restricted validity today. There are therefore two further questions which inevitably suggest themselves here:

1. Why cannot level 3 of philosophy or metaphysics merely renounce levels 1 and 2, or why cannot metaphysics simply content itself with the first two levels? Our remarks in Section 3 above have already indicated the heart of Kant's answer to this: in demonstrating the a priori presuppositions of experience, philosophy has already

refuted the corresponding form of scepticism and thereby actually established its own possibility as pure philosophy. In opposition to rationalism, this philosophy is initially only actual as a theory of experience, namely as philosophy 1 and 2. But the 'Dialectic' nonetheless discovers a positive function for the authentically metaphysical concepts: the Ideas of reason are regulative principles of empirical investigation so that even philosophy 3 enjoys an essential relation to the sciences.

2. To what extent is the first *Critique* strictly bound to the sciences of its time? How much of Kant's theory of mathematics and natural science can be overtaken by later scientific developments, or even shown to be false, without this directly affecting philosophies 1, 2 and 3, which are all connected to the status of the sciences, in the same way? A remark in Kant's essay, *What is the Real Progress that Metaphysics has made in Germany?*, suggests an exemplary answer to this question: metaphysics 'contains not mathematical propositions [...], but the principles of the possibility of any mathematics as such' (XX: 261).

Notes

1. Even if it is the case that Kant's thought matured slowly and continuously like a good wine, we can still speak of something like three 'conversions', two prompted from without and one from within: Rousseau converted him from the overvaluation of knowledge for its own sake, Hume converted him from rationalist dogmatism, and his own Copernican conversion liberated him from a purely naturalistic understanding of knowledge.
2. Plato also anticipates Kant's judicial style of critique. In the early dialogues he transforms previously unexamined claims into ones that are explicitly assessed through the process of *elenchos* (examination and refutation) that resembles a legal hearing (cf. *Apology*, 39c). And the dialectical dialogues are also understood as a kind of trial (cf. *Symposium*, 219c; *Phaedo*, 63b and 69d–e; *Republic* IV, 419a and 420a).

CHAPTER 3

OBJECTIVITY THROUGH SUBJECTIVITY

3.1 Philosophy as Science

The 'Preface' to the first edition of the *Critique* already raises the highest possible epistemic claims on behalf of sound and 'thorough science' (A ix), and this point is further reinforced by Kant's comments in the second edition of the work (B vii, xv, 22f.): if we are to convince those who are sceptical about the possibility of an autonomous or independent philosophy, and even those who despise the very idea of such a thing, philosophy can no longer content itself with blind or 'random groping' (B vii): it must finally become a proper 'science' imparting subjectively certain and objectively necessary knowledge (A xv).

Theme IX: *Metaphysics must embark upon 'the sure path of a science.'*

The project of the first *Critique* thus stands within a tradition which reaches back to Plato and Aristotle and would subsequently also be pursued by Fichte, Hegel and Husserl, although it was repudiated by Heidegger when he claimed that philosophy can 'never be measured against the criterion of the idea of science' (1929b: 122), a view also endorsed by the later Wittgenstein (1953: Sections 108, 499 and 529). One might perhaps attempt to explain and 'excuse' Kant's contrasting approach in this respect by reference to the enormous significance that was attributed to the exact sciences of the time or to the quest for certainty or 'security' that was arguably pursued by the entire tradition of early modern philosophy: the safe refuge promised by considerations of precision and provision (Blumenberg 1989: 752). But both of these arguments merely attempt to relativise the issue in a historical manner which is incompatible for Kant with the claims of a genuinely fundamental philosophy. Whether he is right in this regard depends upon the concept of 'science' that is involved here.

Kant sets out at least seven, and for the most part increasingly demanding, criteria for the 'scientific' status of a discipline. The first three are relatively modest ones which would hardly appear controversial even today: (1) a methodical, namely a conscious and deliberate, procedure, allied (2) with a certain consensus regarding the procedure in question, with the purpose (3) of significantly increasing or furthering genuine knowledge. Kant's own methodical procedure certainly satisfies the first of these criteria. And since the heart of Kant's approach lies in the 'judicial critique' that we have already outlined, his method can also appeal to consensual agreement. He also satisfies the third criterion insofar as the subsequent critics of idealism – after the German idealists had attempted to build so directly and ambitiously upon his insights – effectively returned to Kant's own more sober conception of philosophy, and insofar as later philosophers also wisely abandoned their initially pre-Kantian, i.e. 'realist' or 'objectivist', theories of the nature of objectivity. Thus the later Wittgenstein (1953: Section 107ff.), for example, repudiated the (naive) 'picture theory' of his early *Tractatus* (1921: 2.1–4.0), and Putnam came to reject his own earlier metaphysical realism in favour of an 'internal realism', or a 'realism with a human face' that renounces the idea that human beings can assume a God's-eye perspective: namely knowledge of a world in itself (Putnam 1992; compare Putnam 1983: 84ff. with Putnam 1975: viif.).

The next relevant criterion (4), that of furnishing knowledge in an emphatic sense, demands, according to Kant's brilliant and exemplary discussion of 'Opining, Knowing and Believing', two things: 'agreement with the object' (B 848) and 'objective certainty (for everyone)', and thus a consensus regarding not only the method but also the content. Irrespective of whether we are concerned with the world of numbers, figures and structures (mathematics), with the world of nature, society or culture (the empirical sciences), or with the world of knowledge, language and morality (philosophy), the 'scientifically' oriented thinker wishes to establish how it actually stands with the world in question, and any merely 'private validity of judgement' (B 849), or a person's individual opinion or state of belief, as we might put it today, is clearly insufficient in this respect. When we undertake 'opinion research', it is certainly true that we are concerned with people's subjectively entertained beliefs, but what we want to know is precisely the facts about the beliefs and opinions in question. The first *Critique*

can also be regarded as ‘scientific’ in accordance with the fourth criterion insofar as it succeeds in revealing the contribution which the pure forms of intuition, namely space and time, and the concepts of the understanding make to the realm of experience, even though they do not themselves derive from experience.

Kant’s further criterion (5), that of the systematic interconnection of knowledge, seems itself to be an uncontroversial extension of the idea of a scientific approach in general, and again is one which he has no difficulty in satisfying: in numerous places throughout the analysis the *Critique* refuses to content itself with merely assembling unconnected items of knowledge. It attempts rather to grasp the latter in relation to their ultimate ground and thus articulates them as a coherent and, in principle, complete whole or system, though one that continues to remain essentially open to the field of experience.

It is only the next criterion (6) that may well strike us as too ambitious: that the totality of all our manifold knowledge should ultimately be presented as a ‘perfect unity’ (cf. A xiii). But even this desideratum is not entirely alien to the practice of the sciences. On the contrary, the comprehensive integration of the laws governing falling bodies, of the laws of planetary motion, of the laws of the nature of gases and so forth, within a unified theory of mechanics is regarded as an exemplary model of scientific achievement. Since the first *Critique* is itself derived from a *single* fundamental thought – the Copernican turn and its repudiation of a concept of objectivity based upon access to the domain of reality ‘in itself’ – it satisfies, in this respect at least, this sixth challenging criterion as well. In addition, the argument of the first *Critique* reveals itself as a complex system that is not simply constructed out of a large number of equal and externally independent elements, like a puzzle, but is composed, in accordance with the fifth criterion, of internally structured and unified parts. Thus Kant’s claims for the ‘scientific’ character of philosophy appear largely justified in the light of the six criteria we have mentioned, and the first *Critique* shows in an exemplary manner that, and precisely how, philosophy is indeed possible as an independent science in its own right.

But what about Kant’s last condition (7): namely that ‘science’ in the strict sense essentially consists in knowledge that is derived independently of experience? Whether mathematics and physics, the exemplary cases of strict science, as well as philosophy itself, can properly claim such knowledge is the fundamental question of the

first *Critique*, and thus its principal subject rather than the criterion of its scientific character. But this seventh condition is certainly decisive both for the possibility of philosophy as an independent discipline (cf. Chapter 4.1) and for the question whether the metaphysics of morals and the metaphysics of nature that Kant subsequently develops on the basis of the first *Critique* can also be regarded as examples of science in the strict sense. Since Kant argues that principles independent of experience are indeed valid for these two domains, as he undertakes to demonstrate in detail with regard to nature in his discussion of 'fundamental principles' (cf. Part IV below) and more briefly with regard to morality in the 'Canon' of the first *Critique*, the answer is thus affirmative in both respects.

Kant's claim to have found a way of 'guarding against all errors' (A xii) which have beset the metaphysical use of reason, one which arises pre-eminently from criteria 5 and 6, would soon be challenged by the subsequent history of philosophy. Far from acknowledging that 'there is not a single metaphysical problem which has not been solved, or for the solution of which the key at least has not been supplied' (A xiii), later thinkers either rejected Kant's solutions, gave a different turn to his original questions, or asked new questions of their own. Yet it would be premature to draw the emphatic conclusion that Kant's project has fundamentally failed for his claims may still be defended in a weaker form.

Here again the simplest response to the difficulty would be to relativise the problem in a purely historical fashion: since Kant could not possibly foresee the metaphysical questions that would arise for future generations, he naturally only addresses the questions that had been raised up until his own time. But the first *Critique* itself appeals to four anti-relativistic arguments in this regard. Firstly, it is expressly undertaken to reveal the 'perfect unity' (A xiii) of the faculty of pure reason. Secondly, it holds that this task is easily accomplished since 'that which reason produces entirely from within itself cannot be hidden, but is itself brought to light by reason' (A xx). Thirdly, we can expect to attain 'completeness' here precisely because the 'household goods' of pure reason are few and quickly surveyed, as Kant indicates with a quotation from Persius (ibid.). And finally, just as 'there can only be a *single* faculty of reason, [...] so only a *single* true system of the same is possible on the basis of principles' (*MS*, VI: 207; cf. B 24f.).

The subsequent repudiation of Kant's conception of philosophy as a science should therefore be countered in a different way by recasting the whole problem in a doubly and systematically weakened form. On the one hand, we can weaken Kant's own claims, while on the other, we can also weaken the rejection of these claims. Renouncing the claim to resolve all metaphysical problems, we can content ourselves with seriously engaging with the considerable successes and achievements of the first *Critique*. For Kant initiated such a profound reform in our modes of thinking that, to this day, any philosophical approach that properly confronts the first *Critique* cannot fail to benefit from it with regard to precise conceptual clarification and an appreciation of the problems at stake. And in the course of the following interpretation of Kant's work we shall also see that much of the criticism directed at Kant has actually been over-hasty and that a considerable part of his argument still remains plausible.

3.2 The Epistemic Revolution

What remains permanently valid, above all, is the central thesis of Kant's epistemic revolution which finally renounces the alleged 'things in themselves' in favour of 'appearances' or entities mediated by human subjectivity. From this negative perspective at least, the first *Critique* offers not merely an alternative to the linguistic or communicative turn in modern thought, but rather a proper foundation for it (even if this is not often recognised). For anyone who binds knowledge directly to language or to the 'communicative community' has already repudiated any possible appeal to an objectivity 'in itself'.

1. *A universal subject.* Kant's central thesis is directed not merely against the philosophical tradition, but equally against our natural attitude to reality. For the latter typically regards the world as a collection of things or objects which possess specific properties, which stand in certain relations to one another, and which in all this must be considered actual quite independent of the knowing subject. But according to the argument of the first *Critique* this kind of 'transcendental' realism (B 519), or 'metaphysical' realism as it is also commonly described today, is neither epistemologically tenable nor compatible with freedom as the essential basis of morality (B 571). Of course, Kant fully acknowledges the natural attitude in its expectation

of encountering 'objectivity' in our experience. But he corrects and revises the ground of this expectation and claims that certain specific achievements or accomplishments on the part of subjectivity are constitutive for such objectivity: 'the understanding creates its laws a priori not from nature, but rather prescribes them to the latter' (*Prolog.*, Section 36). But these prescriptions certainly do not imply, as the evolutionary biologist Humberto R. Maturana (2002: 35) assumes, an (empirical) 'dependency on the individual person'. Nor indeed do they depend upon any specific features of culture or history, but are universally valid in the strictest sense. To express the matter in a deliberately paradoxical way, we should have to say rather that they derive from a supra-subjective subjectivity.

We already find the playwright Heinrich von Kleist (*Werke*, II: 634) misinterpreting Kant's central thesis in a naively empiricist sense: 'If all human beings wore green glasses, instead of using their own eyes, then they could not but judge that the objects which they see by such means *are* green. And it just the same with the understanding. We cannot decide whether what we call truth is truly the truth, or whether it merely appears so to us' (cf. Russell 1946: 680 for a similar interpretation). Nor does Hegel do Kant proper justice when he speaks in the 'Introduction' to his *Science of Logic* of Kantian 'appearances' and claims that 'it is like crediting someone with real insight, while adding that he is capable only of insight into the false, and not into anything true. It is equally absurd to claim that there is true knowledge which yet cannot know the object as it is in itself' (*Werke*, 5: 39).

The specific subjective accomplishments discovered by Kant are dependent neither upon the structure of the human brain (as in neuro-scientific naturalism), nor upon the natural history of the human species (as in evolutionary naturalism), nor upon specific factors of social experience (as in social naturalism). But this does not itself imply that the human capacity for knowledge falls straight from heaven on Kant's view of the matter (cf. Vollmer 1987: 102). For the kind of ontogenetic and phylogenetic considerations which are allegedly missing from Kant's account do not belong to the central issue of the *Critique* at all. For the latter is concerned not with the conditions of the origin of knowledge, but solely with the conditions of the validity of knowledge. Kant's enquiry is directed towards the conditions rather than the genesis of objectivity.

One might initially contest this strictly universalist interpretation by pointing out how, starting from the aforementioned motto (B ii), Kant constantly qualifies his claims by referring to ‘my reason’, to ‘human’ sensibility or to ‘our’ mode of intuition, to ‘our’ a priori knowledge, to ‘human reason’ or to ‘us human beings’ (B xxx; 72; 195; 877 etc.). But even Kant’s remark that ‘our nature implies that intuition can never be other than sensible in character’ (B 75) does not limit the validity in question to man as a biological species. For the first *Critique* does not focus upon any particular features of human beings: that they are bipedal, that they assume an upright posture, that they have five senses etc. (on this interpretation Kant would simply defend a modest and anthropologically restricted and species-specific universalism). In fact the *Critique* is essentially concerned with all beings capable of knowledge and for whom objects are mediated through the senses (B 33), beings therefore dependent upon receptive intuition (on this interpretation Kant defends a strict species-*in* different universalism). Even in the case of other beings capable of knowledge, beings from other solar systems for example, their intuition would still be bound to space and time and the relevant events they could know would still have to obey causal laws.

We must have very good reasons if we are prepared to endorse the ‘daring proposition’ (*Prol.*, Section 37) that is represented by Kant’s central thesis as we have just described it. Kant offers three such reasons. The first is an argument *e contrario*: if we accept the alternative position then all metaphysics can only fail. The second argument is a direct one: Kant’s own response to the alternative position – namely the central thesis under discussion – is capable of resolving the metaphysical disputes that beset us; and in the third place, Kant introduces the three unquestionably acknowledged disciplines of logic, mathematics and physics as exemplary confirmation of his argument. With implicit reference to his own achievement, Kant presents a highly ‘abbreviated’ account of these sciences and mentions the great pioneers in their respective historical development, but this story is principally offered as an analogy for what ‘metaphysics’ properly requires: a radical change of epistemological perspective or a ‘revolution in our mode of thinking’ as Kant puts it (B xi). This inevitably recalls the ‘turning’ (*periagoge*) of the soul in Plato’s allegory of the cave (*Republic* VII, 515c), but in contrast to Plato, Kant is concerned not with knowledge itself, but with the theory of knowing. For the unchallenged goal

of knowing, namely 'objectivity', is now regarded as conditioned by subjectivity itself.¹ On the basis of the central thought that 'we can know *a priori* of things only what we ourselves put into them' (B xviii) it should be clear that metaphysics is not a theory of metaphysical entities in their own right, but a theory of (cognitive) subjectivity.

Theme X: *Objectivity, in a literally para-doxical sense, derives from the knowing subject, not from the different particular features of empirical subjects, but from the pre-empirical elements that belong to theoretical subjectivity in general.*

2. *Appearance and thing in itself.* The 'key' to Kant's central thesis lies in a distinction that has been widely misunderstood, although it is ultimately simple in character: the notion of transcendental difference (cf. B 61–2). We can 'regard all objects that are given to us in accordance with two kinds of concepts [...], in the *first place* as appearances, and *then* as things in themselves' (*Letters*: No. 205/114, footnote). In this context 'thing' signifies any object whatsoever, even including God (cf. B 391). Objects are called 'appearances' insofar as they also depend on the knowing subject, while they are called 'things in themselves', or 'things (considered) in themselves', insofar as they are independent of the latter. Traditional metaphysics claims that things in themselves are objectively knowable, whereas Kant's new metaphysics – transcendental idealism (A 369, B 519) or critical idealism (*Prol.*, IV: 375) – claims that only appearances can be objectively known. Things in themselves can certainly be thought, albeit merely thought, and that is also why they are called noumena, in contrast to phenomena or appearances. But the subjective accomplishment of *thinking* must be strictly distinguished from the objective accomplishment of *knowing*.

A close reading of the first *Critique* might well uncover a dozen or more different senses of the term 'appearance'. But we can only regard these as merely so many 'family resemblances' if we overlook the core meaning of the term in its double contrast with the thing in itself. On the one hand 'appearance' signifies the fact that we can only pass from 'the raw material of the sensible impressions' (B 1) to knowledge proper by means of certain subjective, albeit pre-empirical, accomplishments. Consequently there can be no knowledge of things in themselves or of things untouched by any subjective contribution. On the other hand subjectivity is dependent upon the sensuously given, and that is why the understanding alone is not sufficient to procure knowledge (B 326). In accordance with this double

contrast there are two kinds of thing in itself: that which precedes the threshold of sensation – the unknown ‘impact’ that gives rise to sensation – and that which stands beyond the understanding and its merely conceived objects, such as the soul, freedom and God. Common to both is the fact that they can only be ‘thought’, but not ‘known’.

Since the earliest controversies concerning the significance of Kant’s philosophy the transcendental difference to which we have alluded has been interpreted either in terms of two aspects or two worlds (cf. Willaschek 2001). A proper understanding of Kant’s full epistemological programme reveals that this second interpretation is a misunderstanding. Kant is principally interested, formally and epistemologically, in two kinds of perspective insofar as ‘the object is to be taken *in a twofold sense*’ (B xxvii); he is not materially or ontically interested in two classes of object, as Descartes was, for example, when he radically distinguished between material bodies and immaterial mind. It is only when the argument of the *Critique* moves on from the realm of the knowable to the world of morality that it recognises two classes of objects, and thus two worlds: the theoretical world of empirically accessible and causally determined (phenomenal) nature on the one hand and the purely conceived freely determining (noumenal) world of morality.

The ‘material’ (or two worlds) interpretation of Kant which is presented, for example, by Strawson (1959: 62–3), Guyer (1987: 334f.) and McDowell (1994: 41), only leads to what we would describe today as a kind of epistemological naturalism (Kant himself understands ‘naturalism’ as a position of ‘common sense’ that is intrinsically hostile to science: B 883). One could equally speak of a certain naturalised Platonism in this regard. For this approach, along with Plato, assumes the priority of things in themselves with respect to the phenomena, although it also appeals to an epistemological externalism that is quite foreign to Plato, one that posits a causal or quasi-causal relationship between things in themselves and the realm of appearances. These things in themselves, which of course are not ‘ideas’, are regarded as the causes of the appearances which are their effects. It is quite true that some of Kant’s formulations seem to suggest this kind of naturalistic interpretation, as when he says that objects ‘affect our senses’ and ‘produce representations’ (B 1), or again that things in themselves are ‘the cause of appearances’ (B 334 and 552; cf. A 391). Yet Kant explicitly includes causality amongst the ‘pure concepts of

the understanding' which in turn possess no validity with respect to things in themselves.

3. *The experiment of reason.* Critics argue that while every form of transcendental philosophy claims in principle to be irrefutable, this contradicts the falsifiability, or better the confirmability or non-confirmability, which is the minimal condition of all science. Yet the first two reasons already cited in support of Kant's 'daring proposition' (*Prol.*, Section 37) are actually introduced as an experiment, and precisely as an 'experiment of pure reason' that permits its confirmation or otherwise, as the case may be. Kant initially presents his epistemic revolution simply as a 'hypothesis' which will indeed be confirmed if its repudiation leads to 'an unavoidable conflict of reason with itself' and its acceptance results in 'agreement with the principle of pure reason' (B xviiiiff.). If the hypothesis is eventually confirmed, it serves to show two things: negatively, precisely why all previous attempts at 'fundamental philosophy' have inevitably failed, and positively, precisely how this enterprise can now be prosecuted with hope of success. And it further allows us to clarify Kant's position in two mutually complementary ways: on the epistemological interpretation pure rational knowledge of reality proves impossible, while on the objective ('ontological') interpretation all access to things in themselves proves impossible.

The *Critique* presents its examination of the relevant hypothesis in two main parts, each of which are divided into two subsidiary sections. The first main part, which is entirely positive in character, deals directly with sensible intuition (the 'Aesthetic') and the discursive understanding (the 'Analytic') and shows in this connection that certain elements of subjectivity are indispensable for all objectivity. In contrast to Descartes, who attempted to ground knowledge on the basis of a purely formal conception of the 'I think' (the cogito), the subject here is not empty of all content, but one that finds itself 'in possession' of the aforementioned elements. And in contrast to Leibniz, the fortunate arrangement that derived in his view from a pre-established harmony between nature and the mind is not a happy circumstance ordained by God, but the consequence of the substantive character of subjectivity itself. In the second main part of the text, the 'Dialectic', the opening negative section falsifies the alternative hypothesis by showing how the object of metaphysics, namely the 'unconditioned', cannot properly 'be thought without contradiction'

(B xxx). Kant's alternative positive approach then shows how his own new mode of thought can indeed resolve the contradictions in question. It is in this way that the underlying hypothesis acquires an 'established certainty' (B xxii, Footnote) and thereby rightly claims the status of a valid theory.

4. *The contrast with Copernicus.* Kant compares his own epistemic revolution with that earlier accomplished by Copernicus, although the comparison actually serves to obscure as well as to clarify the issue at stake (Kant himself does not speak of a 'Copernican Turn' or a 'Copernican Revolution', though he does refer to a certain 'changed point of view' in the context of Copernicus: B xvi). The comparison rightly emphasises the relationship between an original hypothesis and its subsequent confirmation or demonstration, and, above all, the new and apparently contradictory standpoint assigned to the subject. But it also conceals the proper thrust of Kant's new approach. Copernicus challenged the special position formerly ascribed to man in the world insofar as he no longer regarded the earth as the centre of the cosmos ('*terram non esse centrum [...] In medio vero omnium residet Sol*': *De revolutionibus* I, 10). Or as Nietzsche would put it: 'Since Copernicus man has rolled out of the centre of things into the x' (KSA, XII: 127). Kant, on the other hand, puts the human being back into the centre, albeit in a quite different sense.

Since many other writers have also emphasised this displacement of man, it is tempting to relate the history of the modern age as one in which we have been increasingly disabused of our human narcissism. In this connection Sigmund Freud spoke of three great 'offences' to human self-understanding (1947: 7f.): the cosmological one generated by Copernicus, the biological one produced by Darwin, and the psychological one presented by Freud's own theory (though we already encounter the even more radical thesis of the death of the 'subject' in Nietzsche himself.²) Other 'narcissistic' illusions have also been destroyed in the meantime: the thought that man is the lord and master of the world has been variously revealed as illusory, by Marx with respect to social and economic life, by Horkheimer and Adorno, and in a different way again, by Heidegger, with respect to the control and domination of nature.

Nonetheless, the modern age cannot merely be told as the story of an ever increasing 'self-belittlement of man' (Nietzsche, *On the Genealogy of Morals*, Essay 3, Section 25). For we can also observe

three important contrary movements which place the human being at the centre of our attention. Two of these go back directly to Kant himself, but he also made a significant contribution to the third. The first and most remarkable of these movements, the epistemic revolution that turns from things in themselves to the (transcendental) subject, fundamentally revalues the significance of man, though not as an empirical living being, and it is this which partly helps to explain the enormous influence which has been exercised by the first *Critique*. In comparison with other later re-orientations of thought, including the 'linguistic turn', the first *Critique* still marks a more radical new beginning for philosophy than these. In the second place, Kant's moral philosophy extends this revaluation of man through its principle of the self-legislation of the will. Finally, in the third place, Kant's legal and political philosophy, with its concept of human dignity and the fundamental human rights that flow directly from it, declares that the human being is the true centre and final end of every social order.

3.3 The Realm of Appearance is the Only Truth

However there is *one* aspect of the 'Copernican Turn', namely the restriction of knowledge to the cognition of appearances, which does seem to confirm the topos of man's displacement from the centre of things. According to Hans Blumenberg (1989: 762) the philosophy of the modern age largely offers us 'a description of captivity, even there where it seems to deal of the triumphs of the human spirit. Kant's *Critique of Pure Reason* provides the basic structure of this predicament: theoretical knowledge remains restricted to the field of appearances and every attempt on the part of reason to peer beyond the latter can only fail'. Yet Kant emphatically resists the idea of such captivity – which would simply be another repetition of Plato's allegory of the cave. In Plato we must liberate ourselves from the realm of appearances, which are false precisely because they are dependent on the senses, and strive upwards towards the true Ideas which are free of the sensible world. In Kant, on the other hand, the appearances are liberated from the charge of falsehood and legally recognised, so to speak, within the family of knowledge, and indeed invested with the sole rights of 'legitimate offspring'. Truth, certainty and objectivity only properly belong to appearances, while a merely supposed truth

attaches to things in themselves. There is no 'secret doctrine' regarding the latter as things allegedly be hidden from our common mortal sight, as suggested perhaps by Schiller's poem 'The Veiled Statue in Sais'.

Kant is familiar with the standard 'complaints' that this perspective denies us any insight into the 'inner' nature of things. But if such complaints merely signify that 'we cannot conceive by pure understanding what the things which appear to us may be in themselves, they are entirely illegitimate and unreasonable' since human beings cannot know anything at all 'without the senses' (B 333 ff.). But that does not mean, as Albrecht Haller claimed (1969⁹: 100), in words later echoed by Goethe (*Werke*, I: 359), that 'No created spirit [...] can ever penetrate to nature's inner core'. Kant's sober claim to the contrary is that 'observation and analysis of appearances penetrate the inner recesses of nature' (B 859).

The first *Critique* replaces the traditional demotion or devaluation of the senses with a certain democratisation of reason which confirms the cosmopolitan reading of the critical philosophy we have already suggested. Plato reserved the exercise of political rule to the philosophers and preserved the highest knowledge, vouchsafed solely through the unwritten doctrine, to the special initiates of philosophy. Kant, however, repudiates the idea of the philosopher king not only in the domain of politics (*Perpetual Peace*, VIII: 369), but also within the context of the first *Critique* itself when he claims that 'in regard to the essential ends of human nature the highest philosophy cannot advance further than is possible under the guidance which nature has bestowed even upon the most ordinary understanding' (B 859).

Kant rejects both the realism of our everyday perspective and Platonic idealism. It is only with respect to morality, that is, to a world strictly distinct from nature, that things in themselves retain any positive content. Here empirical motives and incentives, as equivalent to appearances, find themselves demoted in turn. But this has no effect upon the world of objective knowledge. Schelling's later claim that Kant should also have considered transferring freedom as 'the only possible positive conception of the in-itself to things' (*Über das Wesen der menschlichen Freiheit*: 352; English translation: 25) is quite unfounded from the perspective of the argument of the first *Critique*.

We can still say that Kant remains a Platonist in the following three respects: he strictly separates the world of the senses from the world of the understanding; he regards non-empirical elements as constitutive for the possibility of knowledge; and he ascribes a positive significance to the regulative 'ideas' that serve to govern our investigation of experience even if they are not constitutive for knowledge itself. But his anti-Platonic emphasis upon the significance of the sensible world implies that the illusory knowledge arises not from the realm of appearance, but rather from the temptation to regard the latter as 'mere' appearance. Kant's 'logic of truth', presented in the 'Analytic', consists of a theory of appearances, while his 'logic of illusion', presented in the 'Dialectic', consists of a theory of things in themselves. The way in which Kant characteristically combines both an acknowledgement and a critique of Plato yields the next couple of fundamental themes:

Theme XI: *Kant follows the tradition of Plato, and indeed of Parmenides, by defending a kind of epistemological critique of ideology.*

Theme XII: *Kant's innovation with regard to the traditional of the theory of knowledge from Plato and Parmenides lies in emphasising the significance of sensibility and denying the idea of access to things in themselves.*

Notes

1. Kant discovers something analogous to the 'changed point of view' (B xvi) of theoretical reason in the practical realm of morality: 'However, that a human being should become not merely *legally* good, but *morally* good' can only 'be effected through a revolution in the disposition of the human being' (religion, VI: 47).
2. Cf. Friedrich Nietzsche, *Beyond Good and Evil*, the 'Preface'; *On the Genealogy of Morals*, Essay I, Section 13, and Essay III, Section 12.

CHAPTER 4

A PHILOSOPHICAL THEORY OF SCIENCE

4.1 The Decisive Question

The 'Introduction' to the first *Critique* captures the programme of the entire work through introducing two enormously influential distinctions which have nonetheless encountered considerable resistance ever since. Kant appeals to a twofold opposition between the a priori (independent of experience) and the a posteriori (dependent upon experience), on the one hand, and between analytic (explicative) judgements and synthetic (ampliative) judgements on the other, in order to defend autonomous philosophy as a synthetic a priori discipline.

According to the view of logical positivism (the Vienna Circle), including its subsequent modifications by Quine (1960), genuine knowledge is only possible on the basis of logic and experience, a perspective which already excludes the idea of a strictly autonomous philosophy. Initially, the first *Critique* also situates itself on empiricist ground and claims, with respect to the order of time, that 'all our knowledge begins with experience' (B 1). But by distinguishing between the temporal beginning and the substantive origin of knowledge Kant rejects the exclusive claims of empiricism and argues instead that 'even our empirical knowledge is made up of what we receive through impressions and what our own faculty of knowledge (sensible impressions serving merely as the occasion) supplies from itself' (B 1). In order to clarify this more precisely Kant introduces the two aforementioned distinctions which, taken together, constitute the seventh criterion for the scientific status of philosophy already discussed above (cf. 3.1).

The first pair of conceptual terms, the a priori and the a posteriori, derive from the medieval commentaries on Aristotle's *Posterior Analytics* and the distinction that is drawn here between two kinds of

demonstration. In the terminology expressly formulated by William of Ockham (*Summa logicae* III: 2, 17), the *demonstratio a priori*, or 'proof from the earlier', proceeds, with respect to causal relationships, from the causes to the effects, whereas the *demonstratio a posteriori*, or 'proof from the later', proceeds from the effects to the causes. While Descartes was still interested in the significance of these terms for the theory of demonstration, he also added a further sense of his own (cf. *Le Monde*, Chapter 7). Kant himself was exclusively interested in this essentially epistemological sense of the terminology.

In this context Kant distinguishes between relative a priori knowledge (someone who undermines the foundations of his house, for example, already knows that the house will collapse) and 'complete' or 'pure' a priori knowledge (B 2f.), and concentrates, with respect to the purposes of metaphysics, upon the second meaning. In order to identify relevant cases of metaphysical knowledge, ones utterly independent of experience, Kant takes over the two features which had served to distinguish genuine 'knowledge' from mere 'opinion' since Plato (*Republic* V, 476c–9d; VI, 509c–11e) and Aristotle (*Posterior Analytics* I, 2). Of course Kant appeals not to the tradition but to the concept of the pure a priori itself. While experience 'teaches us that a thing is so and so, but not that it cannot be otherwise', that which is independent of experience must be characterised, on the contrary, by the unqualified necessity of what cannot be otherwise (non-contingency) and by the strict, not merely comparative, universality which 'permits of no possible exception' (B 3f.). Taking physics as his model of science, Kant does not regard singular judgements, such as 'Caesar lived to the age of 57' for example, as knowledge in the strictest sense.

Whereas the first pair of conceptual terms is concerned with the source (whether empirical or pre-empirical) and the range of validity (the universality or otherwise) of knowledge, the second pair of terms, namely the distinction between the analytic and the synthetic, is concerned with the legitimation and potential expansion of knowledge. The elementary form of knowledge, a 'judgement' in the logical sense of an assertion or proposition, essentially connects two representations (the subject S and the predicate P) through the copula (is/are) into the unity of S is P. Thus 'body' and 'heavy' are combined, for example, to form the judgement '(All) bodies are heavy'. In the case of *analytic*, or explicatory, judgements the ground of the connection lies in the

(grammatical) subject in the very concept of which the predicate is already 'covertly' contained (B 10). Simply by analysis of the concept of body, for example, we recognise that it contains 'the characters of 'extension, impenetrability, figure etc.' (B 12).

Analytical judgements do indeed deal with objects of experience and thus assert, for example, that no white horse is black or that every bachelor is unmarried etc. But the truth of such assertions is decided not by experience, but simply by the semantic rules of the language which is employed in conjunction with (elementary) logical laws. Even where semantic rules are treated as empirical facts, analytical judgements still count as necessarily true since, contrary to White (1950), the analyticity involved concerns the relation between the semantic rules rather than the specific rules themselves. Thus, with regard to one of Kant's own examples – 'no unlearned man is learned' (B 192) – I do not even need to know the semantic rules governing the term 'man' or 'learned'. The meaning of the prefix 'un-' is sufficient if taken in combination with the principle of non-contradiction. The example of 'all bodies are extended' (B 11f.), on the other hand, involves a conceptual essentialism according to which a body can only be defined by extension, impenetrability etc.

All judgements whose truth cannot be decided solely by recourse to logical laws and the semantic rules of language are *synthetic* in character. In contrast to analytic judgements they involve a genuinely innovative potential since, as ampliative judgements, they go beyond the knowledge already contained in the subject of the proposition.

Of the four possible types of judgement, the *synthetic a posteriori judgement* is entirely unproblematic. It simply corresponds to those empirical judgements which expand our knowledge on the basis of experience and are all therefore synthetic in character. The second possible type, *analytic a posteriori judgements*, simply falls away since analytic judgements – 'whether the concepts which serve as their material are empirical or not' – are valid a priori 'by their very nature' (*Prolog.*, Section 2b). The third type, *analytic a priori judgements*, are again entirely unproblematic since analysis alone extends our knowledge only with 'respect to form', but not with 'respect to content'. Nonetheless the proper range of such judgements has proved philosophically controversial. Whereas the rationalist tradition regarded its own a priori claims (concerning God, freedom and immortality) as analytic in character, it was actually already operating, in Kant's

view, within the fourth, essentially problematic, domain of the *synthetic a priori*.

It is not the least of the achievements of the first *Critique* to recognise that the proper range and significance of the third type of judgement has previously been exaggerated, and that the fate of a truly autonomous depends entirely on the possibility of the fourth type of judgement. And Kant's clarification here also allows for a remarkable simplification of the relevant philosophical issues. In place of Locke's laborious repudiation of the concept of innate ideas in the first book of his *Essay Concerning Human Understanding*, Kant simply poses the relatively simple question whether, and if so how, synthetic a priori judgements are possible. Once he has determined that such judgements are indeed possible, he turns directly to confront the two opposing views, rationalism and empiricism, precisely because they only recognise judgements of the first and third types. Thus Leibniz distinguishes between contingent facts and the necessary truths of reason (*verités de faits et de raisons*) and identifies the latter with analytic truths (*Nouveaux Essais*, I, 1), while Hume only permits the disjunction between 'matters of fact' and 'relations of ideas' (*An Enquiry Concerning Human Understanding*, IV, Part I). Kant overcomes the opposition of rationalism and empiricism not through some kind of compromise, but by appealing to a quite specific kind of knowledge.

Theme XIII: *An autonomous philosophy essentially embodies the synthetic a priori.*

4.2 Thinking in Continuity with the Sciences

In order to render this unusual kind of knowledge, that of the synthetic a priori, palatable to the sceptic Kant undertakes to show that is actually not so unusual at all. For such knowledge already occurs in the recognised sciences and is indeed indispensable to such sciences. Kant argues that 'all the propositions' in mathematics and, for example, the principle of causality in physics ('every change has its cause') are cases of the synthetic a priori. And the other two examples which Kant provides in the 'Introduction' (B 12) are surely plausible, if not indubitably certain, candidates for such knowledge as well: the principle of the conservation of matter (particularly with regard to the equivalence between matter and energy which Kant himself did not anticipate) and

the principle of equal action and reaction which corresponds to Newton's third axiom and is regarded today as equivalent to the conservation of momentum and angular momentum within a closed system. Since the 'Analytic of Principles' also discusses the principle of conservation (in the first analogy), the principle of causality (in the second analogy), and the principle of equal action and reaction (in the third analogy), it looks as though the 'Introduction', apart from the examples drawn from mathematics, is simply anticipating the three transcendental laws of nature that are examined in the 'Analogies'.¹ Now whether physics and mathematics actually contain synthetic a priori knowledge is of course still to be investigated (cf. Chapters 7 and 14 below). But the general programme of the *Critique* here already suggests why the work has proved so influential.

A preliminary formulation of theme XIV: *An autonomous philosophy shares its characteristic mode of cognition, the synthetic a priori, with universally recognised sciences such as physics and mathematics.*

In appealing to the synthetic a priori Kant effectively accepts the idea of philosophy, already initiated by the Greeks, as the search for eternal truths that are directly relevant to 'science'. Of course the search for such truths does not amount to the authentic possession of them since the project of rational critique 'is based on no data except reason itself, and therefore seeks, without resting upon any fact, to unfold knowledge from its original germs' (*Prol.*, Section 4).

It should be noted that the concept of 'experiment' and the idea of the 'domination of nature' play no role in Kant's corresponding theory of natural science. Kant is of course so impressed by the success of controlled experiment in revealing 'the hidden character of the things of nature' (*Anthropology*, Section 56), and by the repeatability of scientific observations (*Letters*: No. 411/226), that he pursues the argument of the first *Critique*, as we have seen, as an 'experiment of reason'. But the concept of experiment does not properly belong to the synthetic a priori elements that constitute knowledge itself. And the notion of the domination of nature (contra Schäfer 1993: 45f.) plays no role whatsoever in Kant's thought in general. When he describes Bacon as 'the first and greatest student of nature in recent times', he is certainly acknowledging the importance which the latter laid upon experience, observation and experiment, but he ignores the idea of the resulting control over nature which was so fundamental to Bacon (*Logic*, IX: 32). Insofar as Kant's *Critique* simply thematises the intrinsically scientific

character that belongs to authentic knowledge, it treats the possible applications of such knowledge as epistemically irrelevant. In this way Kant indirectly rehabilitates Aristotle's ideal of 'theoria' as genuine knowledge pursued entirely for its own sake. The one remark of Kant's which might prima facie be cited as evidence to the contrary, namely: 'Only give me matter and I shall build you a world from it' (*Natural History*, I: 229; cf. also 230), not only derives from a pre-critical text, but is concerned with the theoretical understanding of nature and is entirely unconnected with any technological considerations. As the subtitle of the *Universal Natural History of the Heavens* clearly indicates, Kant is simply investigating 'the mechanical origin of the whole edifice of the world'. He is solely interested in grasping 'the formation of all celestial bodies and the causes of their movements' (I: 230), not in the idea of building such an 'edifice' anew.

Whereas Bacon and, in this respect, his follower Descartes (cf. *Discourse on Method*, Part 6) did indeed entertain a technological and utilitarian concept of the common good, Kant understands the latter in either purely theoretical terms or in essentially moral terms. The Copernican Turn, and the intrinsic subject-dependency of natural laws which it implies, has nothing to do with the technical control over nature that seeks to transform the world in order to satisfy the needs, desires and interests of empirical subjects. The mathematization of the natural sciences (cf. Chapter 13) and the principle of causality may well be presupposed by the deliberate and methodical control over nature, but they are only relevant to the first *Critique* as essential conditions of the 'objectivity' of knowledge.

4.3 This-Wordly Transcendence

In the 'transcendental philosophy of the ancients' (B 113), to which Kant briefly alludes, the 'transcendentia' or 'transcendentia' referred to the ultimate determinations of being (*ens*) which 'go beyond' the limits of normal division of things with respect to genus and species and are always already presupposed in any thinking about entities. Since they might threaten to cast some doubt on the completeness of his own table of categories (cf. Chapter 9 below), Kant offers an original interpretation for three of the 'transcendentals'

(B 113ff.): for the *unum* ('unity'), the *verum* ('truth') and the *bonum* (what Kant calls 'perfection').

Wolff had already used the expression 'transcendental' both in the traditional ontological sense (1736, Sections 329 and 503) and in a more modern epistemological sense (for example: 1728, Section 78; for the significance of Duns Scotus for Wolff, and thus indirectly for Kant, cf. Honnefelder 1995). In Baumgarten's manual on *Metaphysics*, which was highly prized by Kant, the word simply signifies 'necessary' or 'essential' (cf. Hinske 1968). Kant deserves credit for explicitly restoring the idea of 'transcending' to an expression that had long since forfeited much of its original force. Above all, he renews its significance specifically in the context of his own epistemic revolution. Thus although it is directly related to the terms 'transcendence' and 'transcendent', the 'transcendental' in Kant's sense has nothing to do with a world beyond our senses, with the 'afterworld' contemptuously described by Nietzsche (*Zarathustra* I, 'On the Afterworldly'). Kant is concerned expressly the 'this-worldly' dimension: the deep structure of all experience which lies intrinsically within the subject itself.

The *Critique* speaks of the 'transcendental' in at least two different contexts and with three meanings. In the first place, with regard to the (false) employment of reason in relation to the pure principles of the understanding, 'transcendental' refers to the unjustified extension of reason 'beyond the limits of experience' that is characteristic of Wolff's transcendental cosmology (B 352f.). We encounter this meaning of the term, as distinct from that proper to the *Critique* itself, in Kant's reference to the 'transcendental proofs' of the existence of God, demonstrations that are produced 'independently of empirical principles' (B 642). But the sense of the term which is decisive for Kant is directly connected with the concept of the synthetic a priori: 'I entitle transcendental all knowledge which is occupied not so much with objects as with the mode of our knowledge of objects in so far as this mode of knowledge is to be possible a priori' (B 25). Certain synthetic a priori representations are 'not of any empirical origin' but can nonetheless 'relate a priori to objects of experience' (B 81).

In accordance with Kant's double task – of showing 'that' and 'how' synthetic a priori concepts are possible – the investigation of the 'transcendental' in the proper sense falls into two parts. The first, metaphysical part shows *that* certain elements have a non-empirical origin, while

the second, genuinely transcendental part explains *how* these elements can 'yet relate a priori to objects of experience'. First Kant reveals the fact of the a priori, and then presents its justification: the pre-empirical elements are indispensable for empirical experience. It is through this twofold step that the elements receive the precise justification which Kant describes as a 'deduction'. The first *Critique* undertakes such a deduction not merely for his famous deduction of the categories, but also for the pure forms of intuition, and even for the fundamental concepts underlying the 'dialectic' (for the general requirement of a transcendental deduction cf. B 822).

Once the first step of the argument has isolated and separated all the merely empirical presuppositions of knowledge, the second step takes certain fundamental physical and mathematical propositions as an object, but not as a constituent of transcendental knowledge. That space only possesses three dimensions (B 41), for example, is an a priori of the first level, whereas the presuppositions which imply a synthetic a priori of the second level are described as 'transcendental'. In his *Discourse on Method* Descartes defends a unified philosophical method that is modelled on the procedure of mathematics. But although the *Critique* acknowledges that philosophy shares with the concept of the synthetic a priori with mathematics, Kant nonetheless sharply distinguishes between the two disciplines. In this way he once again counters the sceptic who doubts the significance of the synthetic a priori and once again overcomes the opposition between rationalism and empiricism. Since for philosophy the synthetic a priori consists in the pre-empirical conditions of all empirical experience, it is independent of experience, as rationalism insists, and yet related to experience, as empiricism demands. At the same time Kant avoids the danger that the mode of knowledge which philosophy shares with the sciences might infringe the autonomy of either party. Physics and mathematics remain independent of philosophy, while the latter remains independent of the sciences precisely because its transcendental character lies on a more elementary level than that of the sciences themselves.

A final formulation of theme XIV: *The synthetic a priori which philosophy shares with the other sciences is a synthetic a priori of the second level, one which possesses transcendental character.*

If we properly grasp this point, we shall not be tempted to harbour false expectations of Kant's critical philosophy. Thus the first

Critique develops a logically higher level of a priori knowledge, but it contributes nothing to our ordinary knowledge of things. It neither enriches our everyday knowledge nor that consolidated by the special sciences, nor even that involved in the construction of specific theories of science. For theories of this kind, whether we are speaking of logical empiricism or critical rationalism (Karl Popper), attempt more or less positively to reconstruct the methodical procedures of the particular sciences, or even, as with the Erlanger school of constructivism (Paul Lorenzen), to develop their technological and experimental basis. Despite certain critical reflections of their own, these theorists content themselves with interpreting the specific character of a given scientific practice. Kant, on the other hand, was responding directly to sceptical objections to the possibility of rigorous knowledge and therefore attempted to legitimate the claim to truth that was implicit in such practice. He was well aware that while philosophy is indispensable in its own domain, it is inevitably incompetent to furnish prescriptions to the special sciences in the guise of a priori truth. Kant therefore develops a second-level theory of science which is essentially directed at the self-understanding of the sciences rather than at their actual practice. As Kant puts it: 'Pure mathematics and pure natural science would require no such deduction with regard to their own reliability and certainty' (*Prolegomena*, Section 40). But if we understand how a potentially true relation to objects can be thought without contradiction, the sciences can become conceptually transparent to themselves and knowledge can be completed in a formal sense.

A transcendental theory of truth is also quite distinct from other theories of truth, whether they be semantic or pragmatic in character. Whereas the semantic analysis of the term 'truth' does not even raise the question concerning the possibility of truth, the pragmatic approach to the criteria for deciding particular cases already presupposes the legitimate claim of truth itself. Since the a priori conditions of the possibility of truth already define the limits of the latter, the first *Critique* itself can certainly present a criterion of truth. But this criterion distinguishes not between true and false claims, but rather between those objects which are susceptible to truth claims and those which are not. Pure rational concepts – like those of the soul, the world as an absolute whole, freedom as unconditioned causality, God as the highest being – are excluded from knowledge, from any judging which can claim possible truth.

Many interpreters have thought that Kant's basic programme has continued to survive, under various forms, in Heidegger's fundamental ontology (*Being and Time*), in Strawson's descriptive metaphysics, in Apel's transcendental pragmatics, in Tugendhat's formal semantics, in the pragmatic discourse theory of Habermas, and more recently of Brandom, or in Davidson's theory of interpretation. But hardly any of these thinkers claims to defend the concept of the synthetic a priori. And even if such a defence is offered, it is not directly connected with a substantial theory of specific sciences. The best we can say of these 'fundamental' philosophers is that they present a significantly reduced programme of philosophy in comparison with Kant's original enterprise.

Even the numerous attempts that have been made since Strawson (1966) to renew Kant's programme in an analytical mode through an appeal to 'transcendental arguments' have generally adopted some kind of epistemological realism, and have therefore explicitly rejected Kant's transcendental idealism (for objections to the latter cf. Stroud 1968; for a perspective on the recent Anglophone debate cf. Stern 1999 and 2000). If we simply endorse an isolated part of Kant's thought, it is difficult to avoid a serious narrowing of perspective. Many interpreters frequently become fixated upon a single line of argument, like the transcendental deduction of the categories, and fail to grasp that 'transcendental' in Kant does not designate a specific type of argumentation, or even a method (which Kant expressly describes as 'critical'). It signifies, on the contrary, a programme of enquiry that investigates the necessary conditions of knowledge that lays claim to truth, although it also does more than this. If we ignore this further aspect, the programme appears as a complex of mutually supplementing but relatively independent doctrines for which the theory of transcendental idealism provides the conceptual horizon. If we then abandon this theory, we effectively de-transcendentalise Kant's transcendental philosophy. The individual doctrines only appear justified if experience seems impossible without them and the claim that experience is 'otherwise impossible' is identified with lack of any possible 'alternative'. Thus the lack of an alternative account was long regarded as the essential characteristic of transcendental arguments. One could try and deny certain elements, and then go on to show that the denial already presupposed the elements in question, or other elements closely connected with them. The lack of a possible alternative

was demonstrated through a reflexive self-contradiction or a positive argument for necessary self-relation.

But Kant's own philosophical programme is both sharper and more ambitious than this. It begins with a step which is generally missing from such arguments based upon the lack of alternatives: the demonstration of the non-empirical origin of the elements in question. One might attempt to interpret the argument from lack of alternatives as a re-formulation of this approach. But despite a certain affinity between them, the concept of the 'non-empirical' and that of 'no alternative' have different meanings. Kant certainly claims that the elements uncovered in the 'Aesthetic' and the 'Analytic' are indispensable for all knowledge, and that there is therefore no alternative to accepting them. But his epistemic revolution also implies that the elements for which there is no alternative do not derive from experience, but from the knowing subject which must itself be conceived in transcendental-idealist rather than realist terms.

4.4 Three Objections to Kant

Although Kant's twofold distinction of the analytic/synthetic and the a priori/a posteriori was long acknowledged and accepted, serious doubts have been raised more recently in this connection. The semantic objections raised by Kripke, and objections based on a theory of science deriving from Quine and White, have proved particularly influential. I would also raise a third objection against Kant's rejection of a transcendental philosophy of morality. It is necessary to discuss these objections here to determine whether they seriously jeopardise Kant's overall programme.

1. Saul Kripke's doubts arise directly from a specific theory of meaning concerning proper names (Kripke 1980). The hitherto prevailing view, as represented by Frege and Russell for example, maintained that the meaning of a proper name like 'Moses' was furnished by relevant descriptions, i.e.: 'the individual who led the Jews out of Egypt'. Kripke countered this view by appealing to a causal theory of meaning: first of all an object is denominated, either in the form of a description or ostensively through indication, and then the name is transmitted, that is, causally mediated, through a communicative chain. In the process the original denomination of the object becomes irrelevant

and what proves decisive is the causally mediated relationship between the expressions and the designated objects. And something similar is holds for the meaning of concepts for natural kinds, such as 'water', 'gold' or 'tiger'.

Kripke's new semantics, the causal theory of reference, has important consequences for any theory of judgements or assertions. Whereas the meaning of proper names was formerly regarded as a matter of (analytic) definition, names were now seen as rigidly designating expressions which designate the same objects in all possible worlds. The truth of identity statements, such as 'Hesperus is Phosphorus' (in Frege: 'The evening star is the morning star') or 'Cicero is Tullius', must now be discovered empirically. The assertions in question are therefore necessarily true, but can nonetheless only be known through experience. In opposition to Kant, therefore, the theory claims that there are necessarily true judgements which are nonetheless only valid a posteriori. And it also claims that there are contingently true assertions that are nonetheless valid a priori, such as the definition of '1 m' as the unit of measurement based upon the original meter in Paris, or, to take an example from the current literature: 'I am now here'.

Here I am not concerned with Kripke's theory of names as such (cf. Wolf 1993), but merely with whether it effectively challenges the programme of the first *Critique*. And this cannot be the case since the theory does not cast doubt upon the mode of knowledge proper to metaphysics, the synthetic a priori, but merely rejects necessity as the characteristic feature of the latter. And this has no consequences for Kant's programme since proper names play no role here, either in the presuppositions of physics and mathematics, or in the theory of such presuppositions. Nor are the expressions for natural kinds of any relevance here since they merely concern empirical concepts rather than the synthetic a priori. We can provisionally conclude, therefore, that Kripke's theory of names is irrelevant to the programme of the first *Critique*.

If we therefore ignore the critical programme and simply consider Kant's division of the kinds of possible judgement, we discover that the alleged counter examples themselves are structurally complex. Even if the assertion: 'I am now here' is both contingent and true a priori, there are two specific aspects to it which should be distinguished. The analytic aspect, which is therefore true a priori, has a ground that is

internal to language, even if this turns out to be more complex than in Kant's example: 'No unlearned man is learned'. The connection between the semantic content of the indexical expressions 'I', 'here', and 'now' and the characteristic self-reflexive relation of first person statements means that this aspect is true in all possible worlds, and thus true analytically and independently of experience. But it is different with respect to the a posteriori aspect of the assertion. Only on the basis of experience can one know which 'I', at which time, and in which place, makes the relevant assertion. This aspect is therefore both synthetically and contingently true. For every world in which the entire assertion is made, we can imagine a world in which it is not true: 'I might not be here now'.

It is also possible to weaken the force of the other alleged counterexamples to Kant's division of the possible types of judgement. Insofar as neither the (empirical) names 'Cicero' and 'Tullius' nor 'Phosphorus' (the morning star) and 'Hesperus' (the evening star) are synonymous, it is quite true that the assertion that Cicero is identical with Tullius and that Phosphorus is identical with Hesperus amplifies the content already given in the subject term. But here too we must distinguish between two different aspects that are involved. The lack of synonymity means that the amplifying aspect is neither necessary nor a priori, while the necessary aspect, the self-identity of the same object in all possible worlds, is neither synthetic nor empirical, and is thus both necessarily and a priori true. Our second provisional conclusion is that with empirical concepts a synthetic relation of necessity always has an empirical aspect.

Finally, we may note that Kripke has expressed difficulty (1980: 39) with Kant's example of an analytic judgement in the *Prolegomena* (Section 2b): 'Gold is a yellow metal'. Although the proposition consists of entirely empirical concepts, it is nonetheless analytic in a certain sense 'since in order to know this, I require no further experience beyond my concept of gold that would tell me that this body is yellow and a metal'. According to Kripke the proposition could be revealed as false, and is therefore neither analytically nor necessarily valid. The background to this argument is a metaphysical 'essentialism' in which natural kinds like water, cats, or indeed gold, can be provided with natural scientific definitions which can only be known a posteriori, but are nonetheless true in all possible worlds, and are thus necessary. Thus, for example, water is H₂O and gold is the element with the

atomic number 79. And in fact it is only the natural sciences which can tell us whether, on account of certain properties connected with the atomic number 79, gold must be yellow in all possible worlds. But although the truth of the claim can indeed only be decided on the basis of the relevant scientific investigation, this is insufficient of itself to invalidate Kant's example. For he presents his example cautiously, more in the sense of a 'nominal' than a 'real' definition. Kant does not declare that 'yellow' and 'metal' are necessary, and thus analytic, elements of the concept of 'gold'. He merely claims that in accordance with 'my' concept of gold – and this refers here not to his own private understanding of the term, but rather that which is current at the time – that the concept in question is made up of two parts: the genus 'metal' and the property 'yellow'. And Kant recognises other elements in the concept as well: 'in addition to its weight, colour, malleability, also its property of resisting rust' (B 755f.). But even with these further properties, he would not thereby claim to have identified the essential properties of the natural kind 'gold', properties which can only be discovered empirically.

2. W. V. O. Quine maintained that all earlier accounts of the 'analytic' and the 'synthetic', including Kant's, are insufficiently precise, and the difficulties which Quine encountered in attempting to develop a more precise account in this regard eventually led him to doubt the usefulness of the distinction itself (sceptical considerations in this respect can already be found in White 1950). In *Word and Object* (Sections 12–16) Quine argues that there is no empirical way of discriminating between analytic and synthetic propositions and concludes that the distinction is relative rather than essential in character (for recent discussion of Quine's arguments cf. Keil 2003).

Quine's claim has had far-reaching consequences for the position of logical empiricism. Directly inspired by American pragmatism in this regard, he effectively unravelled one strand of empiricism from within. For once we recognise that the distinction between analytic and synthetic propositions is merely relative, the previous division of labour between philosophy and the sciences, the former concerned with logical-conceptual knowledge and the latter with empirical-factual knowledge, can no longer strictly be upheld. Hence Quine argues for a 'semantic ascent' which dissolves the either-or of the former division of labour in favour of a 'gradualist' approach. Here philosophy and the sciences together constitute a network of claims, with logic

at the centre, observation statements at the periphery, and empirical content distributed over the entire network. In principle therefore all propositions are revisable, although changing those at the centre of the network would require much greater effort than changing those at the periphery.

If this pragmatic distinction concerning the greater or lesser effort demanded by such a change is to be more than contingent, its epistemic ground must lie in the fact that the peripheral propositions correspond to a lower, while the central propositions correspond to a higher epistemic level. Yet this once again leads us back to the kind of epistemic pyramid or hierarchy that Quine rejects. For in such a pyramid the direction from 'the bottom to the top' corresponds to that from 'the outside to the inside' in Quine's concept of the network: we begin with the observation statements of the empirical sciences and advance through the formulation of general theories of nature on towards ontology, mathematics and finally logic.

This conception of a series of levels, one which had already been defended by Hermann von Helmholtz (1921: 109–36), does not in principle contradict the argument of the first *Critique* since the latter also situates itself explicitly within 'the continuum of the sciences'. But if we consider the finer details of the problem, we can see that Kant would reverse the internal epistemic hierarchy that places mathematics before ontology. He would argue that ontology, as both a universal and epistemological theory of objects, also concerns the objects of mathematics and therefore must precede the science of mathematics itself. But Kant also insists upon something that Quine too would hardly wish to doubt: namely that experience, however we distinguish precisely between analytic and synthetic propositions, requires non-analytic, and thus empirical, elements. And in fact Kant's own reflections on the limits of analytic concepts are no less perspicacious than Quine's. For it is only stipulative definitions – definitions which are freely agreed – that allow for analytic truths. But in philosophy we are certainly not free to stipulate in this way, and perhaps not even in mathematics either (for Kant's 'theory' of definition cf. B 755ff.).

We must conclude here, therefore, that Kant's classification of the possible types of judgement cannot be replaced as quickly as modern critics have often supposed. Even at the beginning of the argument, in the opening classification of judgements, Kant's programme cannot simply be 'dismissed'.

3. *Is it impossible to develop a transcendental philosophy of morality?* It seems curious that while Kant explicitly describes the 'fundamental principles of morality' as a form of a priori knowledge, he nonetheless excludes them from the transcendental programme itself. He argues that the concept of duty, which implies the thought of some 'hindrance which we have to overcome', necessarily requires reference to 'the concepts of pleasure and pain, of the desires and inclinations etc., all of which are of empirical origin' (B 28f.) and therefore destroy the synthetic a priori character of philosophical claims (cf. B 829 I; also B 597 and 829f.). This argument is unconvincing if only because empirical concepts also enter into the theoretical transcendental philosophy, as we have already seen with reference to the principle of causality and the empirical concept of 'change'. But Kant himself also distinguishes between 'pure morality which merely contains the necessary moral laws of a free will in general' and 'the doctrine of the virtues strictly so called – the doctrine which considers these laws under the limitations of the feelings, inclinations, and passions to which men are more or less subject' (B 79). Hence it is certainly possible to conceive of a 'practical' transcendental philosophy which, in distinction from the 'theoretical' transcendental philosophy of the first *Critique*, deals with action rather than knowledge, specifically with the moral law of action which it investigates as pure morality by abstracting from hindrances of an empirical nature.

The theoretical branch of transcendental philosophy investigates the question concerning the a priori conditions of the cognition of objects and the claim to truth such knowledge implies, whereas the practical branch of transcendental philosophy examines these conditions with respect to praxis and its claim to moral validity. In the former case, we are concerned with the synthetic a priori element of the faculty of knowledge, in the latter with the synthetic a priori element of the faculty of desire. The practical branch of transcendental philosophy is no more concerned with examining the morality of concrete actions or rules of action than the theoretical branch of transcendental philosophy is concerned with investigating the truth of concrete assertions (or systems of such assertions). Instead of pursuing questions of this kind, both branches of the discipline raise a twofold question which is not more useful or beneficial than the former, but is certainly more fundamental: the question whether in the case of truth or of morality we are merely dealing with an illusion.

As far as the practical transcendental philosophy is concerned, the answer to this question is already furnished by the first *Critique*. For the consideration of transcendental freedom reveals that the possibility of morality is certainly conceivable and thereby serves to silence ‘all objections to morality’ (B xxxi). One might initially think, therefore, that a specifically practical branch of transcendental philosophy was unnecessary since the first *Critique* has already established the doctrine of transcendental freedom. But the ‘objections to morality’ have only here been silenced in ‘Socratic fashion, namely, by the clearest proof of the ignorance of the objectors’ (ibid.). And the positive demonstration of the possibility of morality which is still required is only provided in the first chapter of the ‘Analytic’ of the second *Critique*. Even if Kant does not speak in this context of practical transcendental philosophy, he is here effectively extending the same transcendental programme. The approach that was already partly adumbrated in the ‘Canon’ of the first *Critique* is subsequently developed in more detail and in slightly different form: the investigation of a synthetic a priori principle within the faculty of desire (for a discussion of the second *Critique*, cf. Höffe 2002). The element that seemed to disturb the idea of the purely transcendental, the concept of duty, plays no fundamental role in this connection but only makes an appearance in the ‘Remark’ to the ‘Corollary’ of Section 7. The concept of ‘final end’ which Kant had indeed already discussed in the ‘Canon’ is also a case of the synthetic a priori, although it is only developed in a relatively conclusive manner in the ‘Dialectic’ of the *Critique of Practical Reason*. In connection with the second *Critique* Kant is therefore right to raise a claim that is analogous with that raised by the first: ‘the a priori principles of two faculties of the mind, the faculty of cognition and the faculty of desire, would be found and determined as to the conditions, extent and boundaries of their use’ (*CPrR*, V: 12).

As we have already pointed out (Chapter 2.3 above), Kant still believed in 1781 that he would be able to include both parts of his system of reason, concerning nature and morality, in a single critique of reason. In fact, by expressly restricting theoretical reason to ‘the limits of possible experience’ (B xix), the first *Critique* does prepare the ground for a consideration of pure practical reason. And the ‘ideal of the highest good’ already suggests that we can only properly show the possibility of morality by identifying another boundary, one which reveals that practical, as well as theoretical, reason has a restricted

range of application, although here we are speaking specifically of empirical rather than of pure practical reason. Kant later realises that this argument requires more precise elaboration, something that he initially considered publishing merely as a part of the second edition of the *Critique of Pure Reason* (cf. Erdmann's 'Introduction' to his edition: III: 556ff.). In fact he tells us in the 'Preface' to the second edition that he still believed that a second critique would be unnecessary: since 'all I need with regard to morality is to show that freedom is at least not self-contradictory and can therefore still be thought' (B xxix).

Even the next step in Kant's moral philosophy, the *Doctrine of Virtue* which builds on the conclusions of his practical transcendental philosophy, does not primarily treat its subject matter in relation to empirical obstacles and hindrances, but simply starts by setting out the relevant duties of virtue. This itself furnishes another reason for not accepting Kant's view that the consideration of morality properly falls outside the genuinely transcendental programme. In contrast with the first two objections that we have just examined, however, this last objection in no way endangers to the basic programme itself.

Notes

1. At B 4f. and B 13 Kant presents the principle of causality as a pure a priori judgement, while at B 3 it is described as impure in character 'because alteration is a concept which can be derived only from experience' (cf. B 58). This inconsistency can be removed by reference to two slightly different concepts of 'pure' with which, for example, Kant operates at B 642. A concept is 'pure in the very strictest sense' if it contains no empirical concepts whatsoever, but is also pure in the weaker but still 'strict sense' if an 'experience in general is presupposed' although the proof 'is not based on any particular property of this experience'. In this sense the principle of causality, and the concept of 'alteration' it involves, certainly relates to experience. But since it relates merely to experience in general, rather than to any specifically defined experience, it is still pure in a strict, if not the very strictest, sense. Nor are the principles of conservation or of equal action and reaction pure in the very strictest sense since, unlike the analogies of experience, they concern substances rather than matter (cf. propositions 2 and 4 in the 'Mechanics' of the *Metaphysical Foundations of Natural Science*).

CHAPTER 5

FIRST ASSESSMENT: KANT'S PROGRAMME

5.1 Is Philosophy Possible without an Antecedent Critique of Language?

If we read the first *Critique* from the perspective opened up through the modern philosophy of language, the 'Introduction' to our text already reveals an important shared point of departure: for Kant the fundamental medium of knowledge and the very site of truth and error (B 350) lies in the articulated unity of the 'judgement' which is characterised by the specific linguistic form of the subject-predicate proposition. The propositional character of judgement – the fact that one here asserts something *about* something – is regarded by Kant as self-evident, and he effectively treats the terms 'judgement' and 'proposition' as equivalent (B 3, 11f., 387, 764). And there are three other aspects which his own approach emphasises in common with the philosophy of language: the communicability of objective judgements, the intersubjective validity of such judgements for 'all human reason', and the prospect of universal agreement (e.g. B 848f.).

Of course Kant also recognises the task of specifying and distinguishing the concepts we use, one which was cultivated right from the beginning of the philosophical tradition and hardly had to wait for the arrival of twentieth century thought. A major part of the business of reason lies in the analysis of the concepts we apply to objects (B 9). Kant's classification of the various types of judgement is proto-typical for the numerous further distinctions and classifications which he provides in the interest of 'sufficiently clarifying our concepts' (B 763). And indeed Kant's aforementioned conception of 'transcendental difference', which considers 'the object in a twofold sense' (B xxvii), fulfils this task far more thoroughly than most alternative approaches, and certainly more thoroughly than Gilbert Ryle's attempt (1949) to identify the various 'category mistakes' into which our thinking is

prone to fall. Whereas Ryle was principally concerned, with Cartesian mind-body dualism in his sights, simply with overcoming our bad categorical habits by recourse to the required categorial discipline, Kant's own conceptual discipline is directed specifically against the 'natural' or naturalistic attitude which believes it can know things or states of affairs 'in themselves'. One could also read Kant's 'Dialectic' as an anticipation of the therapeutic conception of philosophy which would diagnose our 'bewitchment' at the hands of language. In short, Kant already cultivates a kind of 'analytical philosophy', even if he certainly does not regard such an approach as simply identical with philosophy itself.

And here I should also like to indicate three further aspects of Kant's critical conception of language: that our standard understanding of many expressions, including that of 'discipline' itself, requires correction (B 739), that there are meaningless questions which only lead in turn to meaningless answers (B 82), that 'to coin new words is to advance a claim to legislation in language that seldom succeeds' (B 368ff.). The argument of the first *Critique* thus harbours considerable potential with regard to the philosophy of language.¹ Although Kant describes language as 'the most excellent way of designating thoughts' and claims that thinking is a form of 'speaking with oneself' (*Anthropology*, Section 39), he does not ascribe any exclusive right to language as such. Does this imply that we must treat the first *Critique* as an essentially superseded, and in a sense pre-revolutionary, kind of philosophy? We may attempt an answer here by posing the alternative question: are the fundamental elements of Kant's critical programme really obsolete simply because the latter fails to furnish an antecedent critique of language?

The separation between appearances and the things in themselves, the core of Kant's epistemic revolution, is by no means obsolete. On the contrary, it furnishes a specific (and indeed more profound) grounding for the critique which philosophy of language also makes of every objectivistic theory of knowledge. In comparison with subsequent approaches, including the 'linguistic turn', Kant's own approach surely represents a more radical, if not thereby necessarily more significant, new beginning with respect to philosophy.

There are also other aspects of Kant's critical programme that are hardly effected by modern critical reflections on language: that theoretical philosophy ultimately, though indirectly, pursues a moral

purpose (Themes I and II), that rigorous philosophical reflection leads us into certain difficulties and even contradictions (Themes III and IV), that these contradictions, along with other fundamental philosophical controversies, are best addressed and decided at their root through a kind of 'judicial' process (Themes V and VI). It would also seem appropriate, in this age of science, to justify the special sciences (Themes VII and VIII) by reference to secure criteria of scientific validity, and to pursue an epistemic critique of ideology that overcomes naive realism (Themes IX and X), positively revalues the role of the senses, and denies us access to things in themselves (Themes XI and XII). It further remains clear that the fate of autonomous philosophy is intrinsically bound up with the concept of the synthetic a priori (Theme XIII), even if we believe on semantic grounds (with Kripke) or on theoretical scientific grounds (with Quine) that Kant's conception of the synthetic a priori requires further modification. And in this connection we have already seen that such proposed modifications do not effect the fundamental critical programme itself. The further transcendental formulation of the issue (Theme XIV) reveals the contemporary relevance that still attaches to the concept of the synthetic a priori. We may also observe that the guiding moral interest of the first *Critique* exposes the weak point of much philosophy of language precisely insofar as the latter pays insufficient attention to such an important subject as morality.

The new analytical and linguistic approach to philosophy that arose at the beginning of the 20th century was characterised by three elements: a primary emphasis upon (modern) formal logic (in Frege and Russell for example), a critique of British idealism (in Russell and Moore), the crisis of the traditional, and above all Cartesian, project of providing ultimate philosophical foundations. A fourth element was subsequently added with the crisis of Cartesian mind-body dualism (Ryle). In the last analysis the greater part of prevailing analytical philosophy was indebted to a single principal intellectual tradition: an empiricism deriving from either British or Austrian sources.

Kant offers a relevant alternative in all of these respects: his conception of logic as the 'vestibule of the sciences' (B ix) is directed against the over assessment, or perhaps even mistaken assessment, of logic itself. His view is surely strengthened by the observation that logic, in spite of its massive prominence, has actually made a far smaller

contribution to substantive philosophical questions than its advocates at first emphatically expected. And only a position of naive realism would still doubt the transcendental difference between appearances and things in themselves which lies at the heart of the first *Critique*. In the third place, the transcendental programme which is formulated in the *Critique* reveals how thoroughly grounded a philosophy can be without appealing to any Cartesian conception of 'foundations'. And, as we shall also see in due course, Kant's philosophy does not imply the kind of (mind-body) dualism that is susceptible to Ryle's fundamental criticisms in this regard. (cf. Chapter 17 below). In the last analysis, therefore, transcendental idealism still offers a significant philosophical alternative precisely because many of the recent debates, subtle and penetrating as they are, effectively represent extensions of empiricist approaches that have not adequately engaged with Kant's own arguments.

5.2 Cosmopolitan Interests

Kant regards the internal unity of the epistemic world as so important that he expressly incorporates it into his philosophical programme. The cosmopolitan character of this world already reveals itself in the threefold object that Kant addresses in this order: the (universal) faculty of human reason (A vii), the equally (and universally) shared faculty of the human understanding (B xxxii), and the no less universal faculty of sensibility (the 'Transcendental Aesthetic'). In contrast to the idea of any special intellectual endowment, any epistemic aristocracy or even esoteric gifts of understanding, he appeals to a democratic faculty that is common to all human beings: 'one man, or mankind, one reason'.

Of course one might investigate the democratic faculties on the basis of some purely specialist, academic and almost aristocratic interest. But the motto of the book itself already dispels any such weakening of epistemic democracy (cf. Chapter 2.1 above). Furthermore, the second 'Preface' contrasts the 'interest of humanity' with the aristocratic monopoly of 'the schools' and proudly claims to have strengthened this interest and to have broken that monopoly (B xxxif.). Thus, in its *second* cosmopolitan respect, the *Critique* serves interests that are universally human but also individual and existential. It is no accident that

Kant frames his three famous questions (B 833) not in the anonymous third person ('one'), but in the existential first person ('I').

It is quite true that Kant has no desire to present his argument in a simplified or 'popular' form. On the contrary, he mocks the pretensions of what he calls 'loquacious shallowness' (B xxxv). Refusing to 'shake off the fetters of science altogether, and thus to change work into play, certainty into opinion, philosophy into philodoxy' (ibid.), he insists upon marshalling his conceptual apparatus and arguments in what could be called the aristocratic form of a 'professionally correct' exposition.

Nonetheless, Kant claims that the philosophical 'Schools', in contrast to their 'arrogant pretensions', are not the 'sole authors and possessors' of the relevant truths (B xxxiii). Whereas Descartes had recommended his own philosophy as the exclusive 'knowledge of truth through their first causes', and even declared it to be the 'highest good' (*Principia philosophiae*, the Letter to Picot), for Kant the 'highest philosophy' finds itself on a level with the 'commonest understanding' in investigating 'matters which concerns all men without distinction' (B 859), namely the three morally significant questions: the immortality of the soul, the freedom of the will and the existence of God. Fortunately the 'subtle' distinctions of the Schools fail to exercise 'the slightest influence' on the convictions of the public since 'fine-spun arguments in favour of useful truths make no more appeal to the people' than 'the equally subtle objections' that can be raised against such arguments (B xxxiv). This thereby reveals a *third* cosmopolitan aspect: one who is a thinker by profession, or the philosopher as such, enjoys no 'higher or fuller insight' here than 'the great mass of men (ever to be held by us in the highest esteem)' (B xxxiii). For by concentrating upon 'those universally comprehensible and, for moral purposes, sufficient grounds of proof', the philosopher remains 'the sole authority in regard to a science which benefits the public without their knowing it' (B xxxiv).

The two sides of the ensuing 'dialectic' clearly reveal that the professional philosopher can claim no special insight in this connection. While the negative side declares that the elaborate conclusions of the (philosophical) Schools are fundamentally mistaken, the positive side legitimates universal human reason and furnishes it with a new epistemic perspective: namely a democratic faith supported by reason in place of a supposedly elevated or aristocratic knowledge that is the

sole preserve of the professional philosopher. This faith is a rational and not an ecclesiastical-doctrinal one. With respect to its moral intentions, and beyond its purely internal epistemic concerns, this faith claims no 'logical' certainty (where the professional philosopher is certainly competent), but does lay claim to a 'moral certainty' that is common to all human beings (B 857). This is where the epistemic cosmopolitanism of the first *Critique* comes together with its fundamental moral interest.

Of course, if the *Critique* were solely concerned with this question, then the expenditure of intellectual effort involved would certainly appear to be out of all proportion to the task. But Kant also desires to explain the 'nature' of space and time, to develop a 'system' of the pure concepts of the understanding and the transcendental laws of nature, and to correct the errors which have plagued all previous philosophical accounts of psychology, cosmology and theology. With respect to these internal epistemic concerns, and this is the *fourth* cosmopolitan aspect, the *Critique* furnishes solutions which can claim global validity, for all cultures and epochs, precisely by virtue of the governing concept of the synthetic a priori.

The *fifth* methodological aspect of Kant's cosmopolitan orientation is very well known. His moral conception of the political sphere involves three elements: the state of nature is a state of war that is characterised by violence and injustice, this state must be overcome by the open and republican securing of right, and a condition of perpetual and unqualified peace must thereby ultimately be effected. We do not have to wait for Kant's explicit 'Doctrine of Method' to encounter all three elements. In the first 'Preface' Kant already identifies a 'battlefield' of endless controversies (A viii) which he would resolve not by 'despotic decrees' but through a judicial process prosecuted 'in accordance with its own eternal and unalterable laws', with the expectation that 'guarding against all those errors' (A xii) which have hitherto beset human reason will lead us towards a state of perpetual peace (B 780). Of course, and this is the *sixth* cosmopolitan aspect, Kant is speaking here of the commonwealth of knowledge (B 879) rather than a political commonwealth. Envisaged as the unity of mankind, democratically ordered in accordance with due process, this commonwealth can properly be regarded as an epistemic world republic.

The idea of a philosophy conceived in the service of peace is not of course entirely new. Immediately prior to the age of the

Enlightenment, during the Thirty Years War, we already find Descartes attempting after the *Discourse on Method* to ‘overcome every occasion for conflict by recourse to very clear and very certain ideas and thereby to encourage mildness and concord’ (*Principia philosophiae*, ‘Letter to Picot’). But Kant’s first *Critique* is both more cautious and more pointed. It is not directly concerned with social and political peace, or even with peace in a more comprehensive sense. It contents itself instead with peace in the domain of knowledge, and even here, it restricts itself to the narrow, yet decisive, realm of fundamental philosophy. In the epistemic commonwealth philosophy is responsible only for the overall epistemic framework of peace, and not for any more comprehensive state of concord.

But this itself requires more than Descartes recognised. Apart from the relevant theoretical principles, there is also a necessary political precondition: freedom in relation to opinion, criticism, and knowledge (B xxxivf.). This freedom, and here is the *seventh* cosmopolitan aspect, claims the status of an inalienable human right (as suggested in the footnote at A 11). The freedom ‘to submit openly for discussion our thoughts and doubts . . . without being decried as troublesome and dangerous citizens’ is ‘sacred as a right and must not be curtailed’. In addition to this argument, framed in terms of the concept of right, Kant also introduces the further pragmatic argument that ‘we are very ill-advised to decry certain bold assertions [. . .] as dangerous since that means ascribing to them an importance which they are not entitled to claim’ (B 780f.).

The genitive in the title of the first *Critique*, which should be understood in the double sense of a critique *of* pure reason performed *by* pure reason, reveals an *eighth* cosmopolitan aspect: it is part of the very principle of reason that it cannot recognise any external authority whatsoever. The ground of this principle lies not in any special privileges which reason could jealously preserve for itself, but solely in the fact that reason ‘recognises no other judge than universal human reason itself’ (B 780).

Kant’s appeal to reason in this sense, and his accompanying critique of the arrogant pretensions of the Schools suggests, finally, the *ninth* cosmopolitan aspect: the basic democratic principle that ‘everyone has a voice’ here (ibid.). The basic principle ‘one man, or mankind, one reason’ is complemented by the further principle of ‘one man, one vote’.

Kant's essentially cosmopolitan conception of philosophy reaches right back into his pre-critical period, and suggestions to this effect can already be detected in the 'Preface' to his first published work (*Thoughts*, I: 7–16; cf. also II: 34). Nor is it difficult to uncover the three principal elements of this cosmopolitan conception in the letter to Johann Heinrich Lambert which already presents the idea of the first *Critique* in embryonic form (*Letters*: No. 34/21). Here Kant complains of 'the devastating disunity among supposed philosophers', diagnoses the cause of this predicament as the 'lack of any common standard' (cf. II: 308), and demands that the philosophers cure the problem by 'bringing their labours into harmony' with one another. The lack of agreement suggests an epistemic state of nature, the absence of a common standard indirectly implies an epistemic state of right, and the prospect of agreement evokes the thought of epistemic peace.

5.3 An Epistemic Tightrope

Kant's political theory of right and of peace appears broadly convincing precisely because of its essential modesty in two respects (cf. Höffe 2001, Part III). On the one hand it merely sets out certain moral principles of right and leaves their further specification and elaboration to individual political states or to the international federation, or world republic, which they could in principle constitute. On the other hand, it does not commit the idea of a peace based upon the concept of right to some idyllic notion of the absence of all conflict or controversy. On the contrary, Kant welcomes a certain conflict and rivalry within and between states precisely because the passions of our 'unsocial sociability', the desires for honour, power and possessions, lead human beings from a 'state of crudeness towards culture' (*Idea*, VII: 20f.).

There are corresponding conditions for the successful realisation of the epistemic world republic we have been describing. As far as the theory of metaphysics is concerned, the *Critique* also recognises a kind of war as the hidden stimulus of development. For the *Critique* begins with the internecine war of reason, with the aporetic quest for knowledge, with the 'battle-field' of metaphysics. In the 'Aesthetic' and the 'Analytic' it searches out the rules through which the fundamental conflict might be resolved, in the 'Dialectic' it first abundantly exhibits the conflict of reason and of the schools and then, finally,

attempts to establish the requisite intellectual peace. As a theory of the sciences, the *Critique* connects the bare framework for a peaceful order of right with great openness to the discoveries and advances of the special sciences.

Precisely how this connection is articulated remains to be clarified. But we can already set out two complementary perspectives that are involved here: the epistemic world republic must certainly lay claim to certain ‘eternal truths’ in order to transform the intellectual state of nature into a rightfully established peace. But it also requires a high degree of openness if it is not to obstruct the disputes and innovations that arise within the sciences themselves. Insofar as the *Critique* attempts to furnish a fundamental theory of the sciences it must walk a tightrope without falling into either of two extremes: a timidity which would merely reveal its own irrelevance and an excessive ambition which would inhibit further research, as Kepler and even Newton did, for example, when they burdened philosophy with essentially theological tasks. Since other researchers and investigators will always ignore such limits and restrictions anyway, we inevitably risk appearing foolish, extravagant, and irresponsible in the claims we make.

The first *Critique* succeeds in walking this tightrope by appealing to a division of powers that is analogous to that described in Kant’s essay *Toward Perpetual Peace*. Just as in that context philosophy contents itself with merely presenting the general principles within which political agents may act, so here it concentrates upon the constitutive conditions of knowledge in general and merely supplements them with certain regulative principles of scientific investigation. We have already seen from our discussion in Chapter 4. 2–3 that the transcendental programme does indeed permit philosophy to walk this tightrope: with its concept of the synthetic a priori the *Critique* certainly lays claim to ‘eternal truths’, but since this is an a priori of the second level, which leaves the question of empirical content open, the independent status of the sciences is not merely acknowledged, but incorporated within the transcendental programme itself.

Notes

1. Kant’s lectures also contain a number of remarks relevant to issues in the philosophy of language. In the one series of lectures on metaphysics Kant sketches the development of philosophical language as it evolves from the richly metaphorical and thus ultimately obscure diction of Heraclitus towards the kind of abstract concepts

which, amongst the Greeks, Aristotle developed furthest of all (*Metaphysics Volkmann*, XXVIII: 369). Elsewhere Kant speaks of the categories as 'a transcendental grammar which contains the ground of human language' (*Metaphysics L₂*, XXVIII: 569; cf. also *Prolegomena*, IV: 322f.; and cf. Chapter 9.2 below). And in another lecture Kant writes: 'Our common language already contains everything that transcendental philosophy laboriously endeavours to extract. These categories are all already contained within us since no experience is possible without them; we say, for example, that snow has fallen. This implies that snow exists: a substance; 'fallen' signifies an attribute, 'on the earth' signifies an influence, that is *actio*, and thus implies *causa*; 'today' refers to time, 'fallen' refers to space' (*Metaphysics Mrongovius*, XXIX: 804).

Part II

Only Human Beings Pursue Mathematics

In modern times the term ‘aesthetic’ has often been understood to mean the ‘theory of the beautiful’. In the first *Critique*, on the other hand, the term designates the theoretical analysis of one of the two sources of all human knowledge, namely ‘sensibility’ or ‘intuition’. Kant’s ‘Aesthetic’, described as the ‘transcendental doctrine of sensibility’ (B 30), examines and elucidates the pre-empirical and yet subjective contribution of the elements of space and time. And the proper recognition of this contribution is the truly revolutionary insight within Kant’s general epistemic revolution itself. In the case of the ‘understanding’ it had long been recognised that these elements played a necessary role in knowledge, but the claim that our sensibility itself depends upon them, together with the further claim that these elements first make the two sciences of mathematics and theoretical physics possible, is unique to Kant. And he himself admits that he succeeded ‘only after much reflection in reliably separating the pure elemental concepts of sensibility (space and time) from those of the understanding’ (*Prol.*, Section 39). He also encounters a further task which is merely indicated in the ‘Transcendental Aesthetic’ (B 38) and other places in the text (B 207 and B 214): that of showing that space and time are indispensable for experience in its entirety, and that space, for example, is indispensable for all perception of ‘things outside of and alongside of one another’ (*Letters*: No. 377/209).

Partly because the relevant arguments concerning space and time and the possibility of mathematics have generally been relegated to specialists, and partly because even informed commentators of Kant have regarded the ‘Aesthetic’ as a doctrine of rather secondary importance, this section of the *Critique* has not been studied nearly as

intensively as the 'Analytic'. Yet Kant's claim concerning the transcendental ideality of space and time is one of the two hinges, so to speak, upon which the critical enterprise itself turns. And the other hinge is not the concept of transcendental apperception, or any other doctrine expounded in the 'Analytic', but his doctrine concerning the reality of the concept of freedom (*Progress*, XX 268f.).

When we examine the argument more closely, we can see that the 'Aesthetic' fulfils no fewer than seven tasks in the context of the critical philosophy: 1. It reveals the incipient constitution of a world that is common to all rational beings; 2. It contests the widespread (theoretical) prejudice against the domain of sensibility; 3. It opens up the double epistemic perspective of empirical reality and transcendental ideality; 4. It furnishes a theory of knowledge which points beyond the standard contemporary alternatives of realism and anti-realism; 5. It effectively brings the epistemic revolution of the critical philosophy, initially presented merely as a hypothesis, to full certainty (cf. B 63ff.); 6. It prepares the way for the subsequent critique of natural theology (B 71f.); 7. It also anticipates the central claim of the 'Dialectic' that there can be no cognition beyond the bounds of experience since intuition is always required for knowledge.

In accordance with Kant's twofold definition of the concept of the 'transcendental', the 'Aesthetic' falls into two parts. Even if it is only in the second edition of the *Critique* that the two parts are explicitly distinguished from one another as the 'Metaphysical Exposition' and the 'Transcendental Exposition', the distinction is already implicitly present in the first edition. There are even three occasions when Kant speaks of a 'transcendental deduction' with respect to space and time (A 87f.; B 119–21; *Letters*: No. 377/209). The first or 'metaphysical' part of Kant's analysis offers a new and revolutionary solution for an ancient dispute that had smouldered on since Plato and Aristotle, or even since Parmenides and Zeno of Elea. For Kant claims that the 'essence' of space (Section 2) and time (Section 4) consists precisely in their being pure forms of intuition (cf. Chapter 6 below). The second part of Kant's analysis shows that space and time first make synthetic a priori knowledge possible: space makes geometry possible (Section 3) and time makes a 'universal theory of motion' (theoretical mechanics) possible (Section 5). According to the 'Introduction' (B 15f.), time also makes arithmetic possible, but this aspect of Kant's argument remains highly controversial (cf. Chapter 7). Finally, Kant also

offers, as a 'third part', some 'General Observations' which unfold the specific double perspective (cf. Chapter 8) which Kant designates in the 'Analytic' as 'transcendental idealism' (cf. Chapter 15.2).

Like the discipline of 'Logic', the 'Aesthetic' also claims the rank of a genuine science because it proceeds systematically 'by reference to an idea of the whole' and undertakes to identify 'all the principles of sensibility' (B 35, 76, 89). Nonetheless, Kant does not speak of a 'deduction' here, but only, more modestly, of an 'exposition' (*expositio*) because although he certainly provides a clear treatment of the matter in question, it is hardly exhaustive (B 38). But the twofold task of transcendental deduction nonetheless still applies: as with the pure concepts of the understanding, so here the metaphysical part reveals the pre-empirical character of space and time (the *quid facti* question), while the transcendental part undertakes the task of full justification (the *quid iuris* question), namely the demonstration of space and time as the condition of the sciences under consideration.

CHAPTER 6

A PHILOSOPHY OF INTUITION

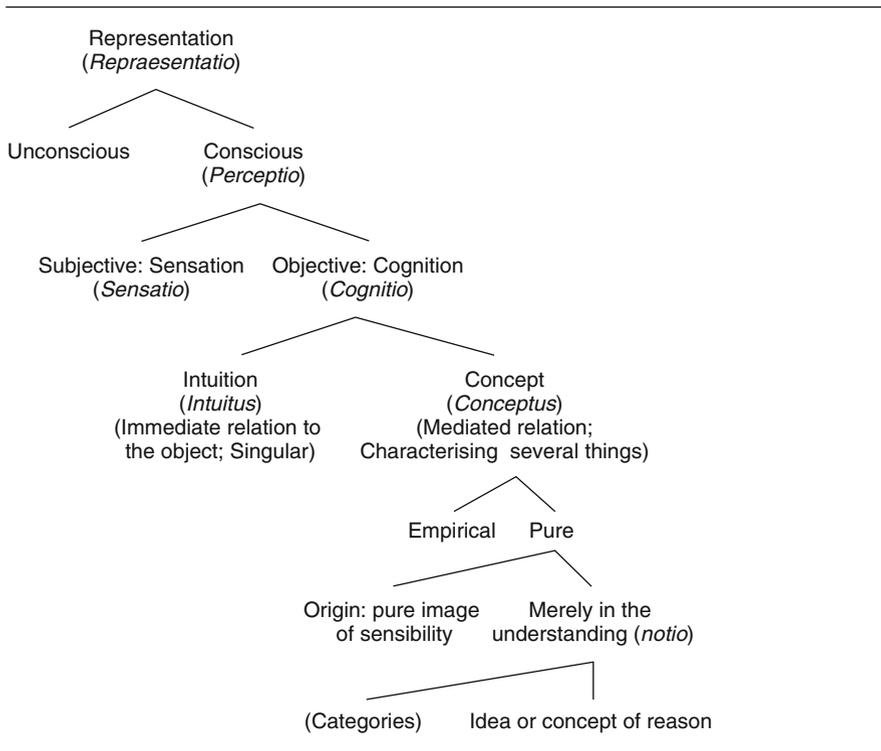
6.1 Contesting the Prejudice Against Sensibility

The 'Aesthetic' begins with a theorem that possesses neither a metaphysical nor a transcendental character (Section 1), but is crucial to the 'Aesthetic' and to 'Logic' as its counterpart (B 74–6): the theorem of the two stems or faculties of knowledge. This is the reason why the argument of the 'Aesthetic' is prosecuted in four steps: 1. the initial statement of the theorem itself; 2. the metaphysical exposition; 3. the transcendental exposition; 4. the implication of the argument for both the theory of cognition and the theory of objects: the doctrine of transcendental idealism insofar as it bears specifically on the domain of sensibility.

According to Kant's first step, we must recognise two heterogeneous but mutually complimentary dimensions to the human (theoretical) subject: the passive or receptive ego of sensibility is responsible for the process of intuiting, while the active or spontaneous ego of the understanding is responsible for the process of thinking. Only both dimensions taken together constitute a theoretical subject, i.e. one capable of generating knowledge. Kant describes the reference of the ego to its contents, irrespective of whether 'intuition' or 'thought' is at issue, simply as that of 'representation' [*Vorstellung*]. Kant's general notion of 'representation' is a richly differentiated one (cf. the exposition in Table 6.1 below, based upon B 75).

The full significance of Kant's initial step is enormous since the theorem of the two stems or sources of knowledge fulfils five tasks. *Firstly*, it provides the basic articulation for the most extensive part of the first *Critique*, the 'Doctrine of Elements', which is divided into a 'Transcendental Aesthetic' and a 'Transcendental Logic'. *Secondly*, this twofold division emphasises the importance of the 'Aesthetic'. For its short text furnishes the counterpart to both the 'Analytic' and the 'Dialectic'. One could even say that the Aesthetic comprises the

Table 6.1



first substantive part of the entire work because ‘without sensibility no object is given to us’ (B 75). Since the first *Critique* takes over the divisions of traditional ‘Logic’ with respect to the faculties of the understanding (‘concepts’), of the power of judgement (‘judgements’), and of reason (‘inferences’) (cf. B 169), the ‘Doctrine of Elements’ consists of four parts, while the work as a whole consists of six parts, if we take the ‘overture’ (the motto, the two Prefaces and Introduction) together with the ‘Doctrine of Method’. But we could also defend a fivefold division of the work insofar as Kant includes both the ‘Analytic of Concepts’ and the ‘Analytic of Principles’ in a *single* part. The resulting threefold articulation of the ‘Doctrine of Elements’ corresponds to the traditional distinction between three types of cognition (intuition, concept and idea) and the three relevant faculties of

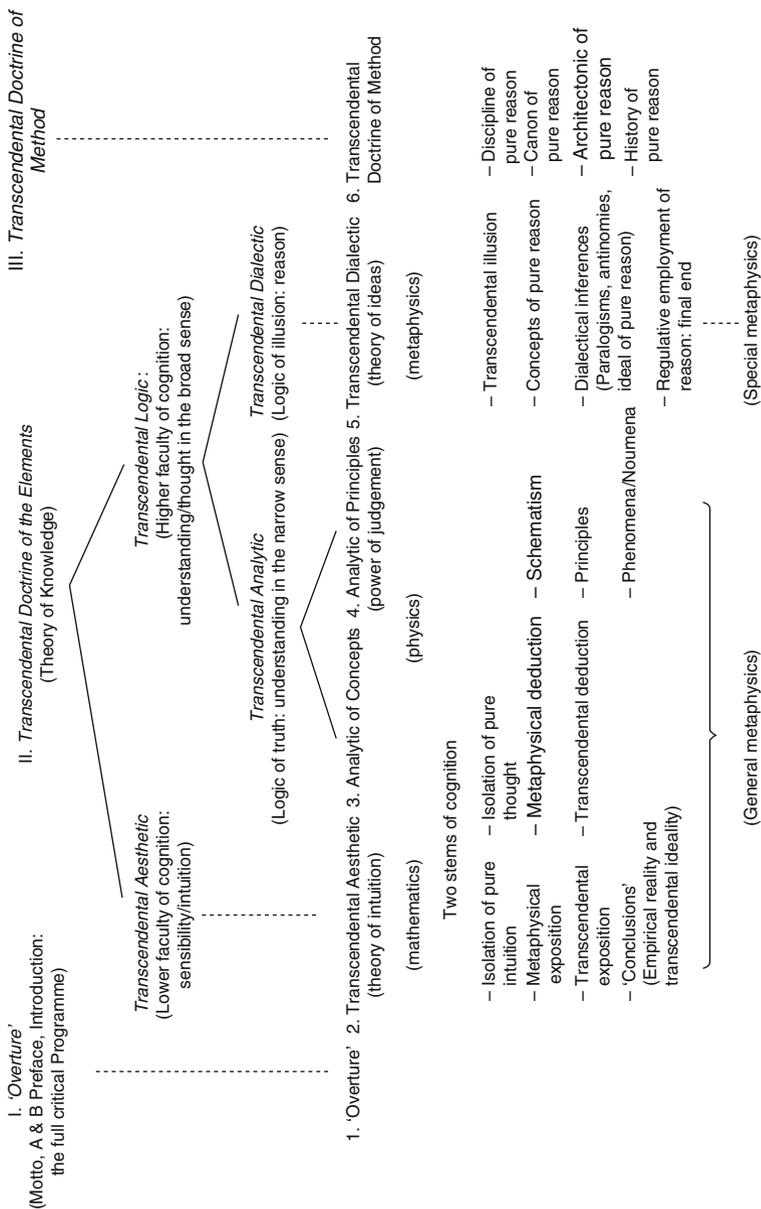
cognition (sensibility, understanding and reason). And Kant thematises the three sciences of mathematics, physics and (special) metaphysics in a parallel fashion (cf. Table 6.2 below).

Thirdly, Kant's theorem of the two stems of knowledge intrinsically elevates the status of sensibility itself. The latter no longer functions as an obscure and deficient form or stage of intellectual knowledge, but is now recognised as an independent, indeed indispensable, source of cognition (B 61f.). This recognition of equal status liberates sensibility from its widespread cognitive subordination to the faculty of the understanding. Kant's resistance to what Hans Blumenberg has called the 'arrogance of the concept with regard to intuition' is particularly emphatic precisely where we might least expect to find it: articulated not in the context of art or literature, but of the theory of knowledge itself, and expressly advanced by a philosopher of the Enlightenment. Even if Schopenhauer, Nietzsche and their followers go further in this direction and stress the full epistemic significance of life and the body in general (as in Sartre or Merleau-Ponty), it is clear that the first *Critique* laid the decisive foundation for this challenge to the arrogance of the conceptual. For this requires far more than an emphasis upon metaphor or pictorialisation (cf. Chapter 23 below for examples in Kant), something that is merely significant for the rhetoric of a theory of knowledge rather than the theory itself. Nor is it sufficient simply to point out even that the fundamental epistemological concepts of space, time and number have emerged from the matrix of mythical thought (Cassirer 1923: ix). For all such considerations are solely concerned with questions of origin and commit a genetic fallacy in using the former to address questions of validity. Any truly fundamental refutation of the subordination of sensibility, one which can claim theoretical validity, must show, with Kant, that sensibility is constitutive for knowledge, and that the latter therefore 'can never extend beyond objects of the senses' (B 75).

In opposition to Plato's claim that there can be no real knowledge in the field of sensuous perception, Aristotle had already argued that sense perception is a necessary stage in the acquisition of knowledge (*Metaphysics* I, 1, 981b 10f.). For the latter furnishes something that no science or philosophy can deny or put in question: the 'most specific knowledge of the particular'. But this still remains the most rudimentary level in Aristotle's hierarchy of genuine cognition. Kant, on the contrary, defends the equal status of the senses, and indeed a certain

Table 6.2

General structure of the first critique



priority of the senses insofar as it is through sensuous intuition that cognition relates immediately to objects and to sensuous intuition that 'all thought as a means is directed' (B 33). It has of course been recognised since antiquity that cognition requires thought, but that thought, as the expression 'directed' here implies, ultimately stands in the service of intuition is a quite new perspective, although this fact has seldom received its proper due even in the interpretation of Kant.

Fourthly, Kant's theorem serves to overcome the opposition between empiricism and rationalism. It acknowledges the partial justification of these respective positions but rejects their exclusive claims to truth, combining a strategy of legitimation and a limitation in relation to both: 'Instead of seeking in understanding and sensibility two sources of representations which, while quite different, can supply objectively valid judgements of things only in *conjunction* with one another, each of these great men' – Leibniz who 'intellectualised' appearances and Locke who 'sensualised' concepts – 'holds to only one of the two' (B 327):

(1) The intentional relation to individual objects, something indispensable for cognition, is impossible for the understanding. The ultimate task of the latter can only be discharged in relation to receptive sensibility, to the capacity of the mind to be 'affected'. The raw material of sensuous impressions is not independently 'produced' by the subject (B 1), but derives from an unknown something that Kant, here obscurely enough, presents on analogy with a cause. Although the expression 'intuition' or 'beholding' [*Anschauung*] is naturally drawn from the realm of visual experience, the 'affection' of which Kant speaks transpires through all five of the senses (for further details cf. the discussion in *Anthropology* Sections 15–24). The plurality of the individual senses presents itself as a mere empirical fact for the first *Critique*, as a purely contingent matter that is hardly worth mentioning. The essential distinction is simply that between outer sense, which relates to 'the mere concept of matter (impenetrable and lifeless extension)', and inner sense, which relates to 'the concept of a thinking being (in the inner empirical representation: I think)' (B 876).

(2) The mere acceptance of something given does not suffice for cognition. In contrast to Aristotle, even the given particular is not known or cognised in purely sensuous terms. Without the formative, and indeed unity-bestowing, activity of the subject, the object remains

simply indeterminate. But it is indeterminate in a double sense: both capable of and in need of determination. Even with regard to the individuation of objects, sensation itself merely furnishes the material required. While the question of truth only arises in the context of judging, something which only the understanding in turn can accomplish.

The indispensability of sensibility in general speaks against a strong form of rationalism, and the fact that real cognition is always intrinsically bound to empirical sensibility, to sensation, speaks equally against a weaker form of rationalism. But because the senses merely furnish the (spatio-temporal) material that must be supplemented by the work of concepts, we must also reject a strong form of empiricism, and because a priori elements are also involved in both sides of the process, in sensibility and the understanding, we must even reject a weaker form of empiricism as well. The interplay of both moments itself overcomes the simple opposition of rationalism and empiricism: 'Without sensibility no object would be given to us, without understanding no object would be thought. Thoughts without content are empty, intuitions without concepts are blind' (B 75).

Kant's critique of empiricism strikes not merely at Locke, but also against the later position of 'logical empiricism' which assumes the possibility both of pure sense data, uncontaminated by any theoretical interpretation, and of a mere observation language, equally free of any theoretical elaboration. If a more recent form of critical empiricism explicitly exposes the 'myth of the given' (Sellars 1963: 140), it is simply confirming Kant's argument: cognition depends upon something given, which nonetheless only ever presents itself in connection with something else, with the spontaneous achievement of the understanding. The allegedly bare 'observation' of data is actually permeated and shaped by conceptual ('theoretical') elements. Even with regard to the instruments of measurement employed for acquiring observation data, the scientist requires theory-laden assumptions about the functioning of such instruments in order to construct them and deploy them for acquiring observation data in the first place.

In Plato, and indeed already in Parmenides, all 'knowledge' bound up with the senses is treated as mere *doxa*, as opinion or even as illusion, which can only hinder the progress of *episteme* or genuine knowledge. Kant's emphatic repudiation of this perspective is already clear from the fact that the 'Transcendental Aesthetic', as distinct from the 'Transcendental Logic', contains an 'Analytic' but no 'Dialectic' of

sensibility. And the ‘Apology for Sensibility’ which Kant presents in his *Anthropology* (Sections 8–11) explains precisely why this is so. Kant soberly answers the standard accusations against the senses – that they confuse the mind, that they can master or deceive the understanding – by pointing out that the senses simply do not occupy the medium of possible error or deception because they do not judge at all. And taken simply on its own, the understanding commits no errors either. Errors can only arise through a possible relationship to an object (B 350; cf. B 359f.).

Kant’s objection to the traditional prejudice against the domain of sensibility has further implications as well, and extends to an epistemological re-evaluation of mathematics. It is quite true that a high regard for mathematics has strongly marked the history of philosophy, from Pythagoras, Plato and Aristotle through to Descartes and Leibniz. But the way in which Kant explicitly co-ordinates mathematics with sensuous intuition rather than with thought is revolutionary in character and strikes directly against the entire rationalist tradition. Even if mathematics also involves elements that belong to the understanding in connection with intuition, such as schemata (cf. Chapter 11 below), it is nonetheless originally grounded in space and time as the pure forms of intuition. And the fact that the character of mathematics is independent of experience equally speaks against the position of empiricism.

Kant’s theorem of the two stems of knowledge is thus essentially a continuation of his (implicit) criticism of Plato’s ‘Allegory of the Cave’. Since the realm of sensibility, far from obscuring the process of cognition, actually plays an indispensable part in constituting the latter, it cannot properly be regarded under the image of imprisonment. The fact that we human beings can only have access to intuitions by virtue of an intrinsically receptive sensibility constitutes our cognitive finitude, and this is a condition from which we cannot and need not be ‘liberated’. Of course, this fundamental anthropological fact also holds for all rational beings that are not purely and simply rational, and is surely the most significant fundamental datum as far the theory of knowledge is concerned. The alternative perspective, that of intuiting objects immediately, i.e. independently of any sensuous conditions of experience and solely through the understanding itself (*Progress*, XX: 267), is something open only to the infinite reason of God. Only a divine reason could creatively ‘see’ anything into existence through

the agency of an *intuitus originarius* or intellectual intuition (or 'speak' something into existence: cf. *Psalm 33*, v. 9). Far from producing something solely from out of itself, as God might do, every other knowing being, essentially bound to receptivity, can appeal only to an *intuitus derivativus*, to an intuition that depends on objects that are already given (B 72).

Fifthly, and finally, this Kantian insight, a discovery which effectively marked the transition from the pre-critical position to the programme of the first *Critique*, the theorem of the two stems of cognition also helps us to ground the phenomenal character of all human cognition. While Leibniz believed, on the basis of his 'intellectual system of the world' that he could 'obtain knowledge of the inner nature of things' (B 326), we must recognise on the contrary that this – the thing in itself – is precisely what is closed to any human knowledge.

6.2 Space and Time as Such

A twofold process of abstraction must be performed before we can broach to the metaphysical part of the Aesthetic. The conceptual contribution of the understanding ('substance, force, divisibility etc.') must first be separated and abstracted from the activity of cognition, and everything empirical must then be separated and abstracted from the remaining sensuous domain ('impenetrability, hardness, colour etc.'). This leaves us with a sensibility entirely independent of experience (Section 1). Kant does not fully ground the two forms of this sensibility, those of 'inner' and 'outer' sense. In contrast with his treatment of the 'Table of Categories', Kant raises only a weaker, merely negative, claim to completeness here (cf. B 146). He simply argues that all other elements of sensibility, and specifically 'motion' and 'alteration' as the two fundamental concepts of physics, 'presuppose something empirical' (B 58).

Through outer sense we represent ordered sense contents as both outside ourselves and as outside and alongside one another (B 37f.). This specific duality distinguishes Kant's first argument concerning the character of space from his otherwise largely parallel argument concerning the character of time. The first externality – something outside of us – indicates that space is not something 'inner' and contests the scepticism which would ascribe the external world, as

something merely represented in us, to an ultimately internal world. And the second externality – of contents outside and alongside one another – lends space a positively determinate character.

Generally speaking, we possess two quite different conceptions of space. Thus mathematics and physics, in particular, appear to be essentially concerned with an ‘objective’ and measurable space (as Aristotle already observes; cf. *Physics* IV, 1–5), while the subjective space of our immediate and lived experience appears principally to concern psychology, art or literature, or indeed phenomenology (cf. Heidegger, *Being and Time*, Sections 22–24; Merleau-Ponty 1962, Sections 14–33). Kant connects both of these conceptions, but he also distances himself from the way in which they are commonly understood. Without identifying both objective forms of mathematical and physical space with one another, or with subjective space, he simply examines the objective ‘substrate’ of all conceptions of space, one which lacks any determinacy if we abstract from the externality of objects. Since none of Kant’s four arguments concerning space is directed to any specifically qualified idea of space, such as the Euclidean three-dimensional concept, he should perhaps have spoken of spatiality or space in general rather than simply ‘space’. In his later writings Kant will distinguish between the ‘ground, for example, of the possibility of an intuition of space’ from the ‘representation of space itself’, and argue that the former alone is innate, while the latter is essentially acquired (*Discovery*, VIII: 222).

As far as ‘inner sense’ is concerned external sensations (acoustic or optical data etc.) reveal themselves as simultaneous or successive, and consequently as in time. In this connection Kant sets pure inner sensation, the feelings of pleasure or displeasure, on one side since these ‘are not a case of knowledge at all’ (B 66). It is not because of some arbitrary restriction of thematic that the first *Critique* concentrates simply on physics and mathematics. It is rather that Kant does not regard the psychology of pleasure and pain, for example, as capable of becoming a matter of cognition, i.e. of objectivity. That is why Kant says of inner intuition that ‘the representations of the *outer senses* constitute the proper material here’ (B 67).

According to a famous distinction explicitly drawn by Bergson (1889), there are two kinds of temporal series, each corresponding to one of the two conceptions of space we have indicated. The objective, physically exact temporal series orders events as earlier, later

or simultaneous (as Aristotle already observed; cf. *Physics* IV, 10–4), whereas the subjective and modal temporal series, the lived and action-oriented time of the individual, orders them as past, present or future (as Augustine already pointed out; cf. *Confessions* XI, 14ff.; for the classical conception of time cf. Plato, *Timaeus* 37c–9d and Plotinus, *Enneads* III, 7). As in the case of space, so with respect to time Kant is also solely concerned with the objective substrate which lacks any determinacy, and it would therefore be better to speak of time in general or temporality in this connection. In an instrument used for measuring time, a clock for example, the hands move while the face remains as the unmoving background. Similarly, the time in which Kant is interested is the pre-empirical meta-level background which underlies all movement, even all measurement of time. The differentiation into time-series, time-content, time-order, and scope of time (cf. B 184–5) no longer belongs to time as the pure form of intuition, but rather to the mediation of sensibility and the understanding, to the process of schematism in accordance with the four classes of categories as Kant argues later (cf. Chapter 11.3 below).

It is through spatiality that external sense contents are distinguished with respect to shape, magnitude, and relation to one another (B 37) and identified in their unique particularity (with respect to intuition, if not to sensation). Since temporality also performs a corresponding role, it is clear that the two pure forms of intuition accomplish something that concepts are incapable of doing: they determine the particular in its (sensory or intuitive) individuality. According to Leibniz's rationalist position, individuality is always exhaustively determined through reference to a subtly and precisely differentiated conceptual content (cf. *Discours de Métaphysique*, Section 8; the remarks in the letter to Arnauld of 14 July 1686). But while for Kant it is true that we recognise the 'marks' or features of things through our concepts, no enumeration, however extensive, of these marks (without reference to singular names) can ever successfully individuate anything. We can only accomplish this by specifically localising something in spatio-temporal terms. In this connection, therefore, Kant speaks of a 'singular representation' (*representatio singularis*) (*Logic*, Section I) and counters Leibniz with an argument that has also been taken up by Strawson (1959, Chapter I.1) and Tugendhat (1976, lecture 25): 'Thus in the case of two drops of water we can abstract altogether from all internal difference (of quality and quantity), and the mere fact that

they have been intuited simultaneously in different spatial positions is sufficient justification for holding them to be numerically different' (B 319f.). (For a contemporary scientific analysis of space and time cf. Hawking 1988; for a specifically philosophical discussion cf. Inwagen and Zimmermann 1998; for a discussion of Kant's views cf. Falkenstein 1989 and Scheffer 1993).

6.3 Two Priorities

Since the subject is aware of every representation of outer sense, the latter is simultaneously a representation of inner sense as well. The priority of inner sense in this respect (B 50f.) led Heidegger (1977) to see the first *Critique* as anticipating the 'fundamental ontology' presented in *Being and Time*. Nonetheless, there are reasons for doubting whether we can speak of an 'exclusive priority' in this connection, and of course it was also necessary for Heidegger himself to engage with the problem of space (*Being and Time*, Sections 22–24).

It is true that time plays a very particular role not merely in the 'Aesthetic', but also in the 'Deduction' and its treatment of transcendental apperception, and the later chapter on 'Schematism' is entirely concerned with the problem of time. But the priority which Kant ascribes to time does not lead him to treat space as a subordinate form of time or interpret it predominantly in terms of the latter. On the contrary, outer sense is immediately concerned only with space, and in such important sections of the *Critique* as those dealing with the mathematical principles or the first antinomy the forms of space and time are clearly of equal significance. The 'Aesthetic' even reverses the order of exposition that was adopted by Newton (*Principia mathematica* 1713³: Scholium I and II) and followed by Kant himself in his dissertation *On the Form and Principles of the Sensible and Intelligible Worlds*, and specifically discusses space before addressing the problem of time. And the transcendental part of the 'Aesthetic' deals rather more thoroughly with space than it does with time. In the 'General Note on the System of Principles' space is also accorded more significance than time (B 291ff.). On the one hand, outer intuitions are always required for the objective reality of the categories (B 291), while on the other, there can be no self-knowledge on the basis of merely inner consciousness 'without the aid of outer empirical intuitions' (B 293f.). In both

regards it is clear that these issues cannot be regarded as merely subsidiary themes of the first *Critique*. On the contrary, the concept of 'outer sense' fulfils at least four principal tasks, together with one subsidiary one:

Space is required (1) for the external shape and extension of things; (2) for the corresponding individuation of things; (3) for the objectivity of knowledge; (4) even for the highly disputed special case of self-knowledge. And finally, (5), we can only represent temporal sequence to ourselves on analogy with spatial sequence: 'under the image of a line, which we draw' (B 156). Whereas the second task also requires 'inner sense', the first and third are concerned exclusively with 'outer sense', and the fourth ascribes a certain priority to the latter as well. But does this contradict the priority which the 'Aesthetic' accords to temporality?

A preliminary observation is in order here. The 'General Note' we have already mentioned only appears in the second edition of the *Critique*, and those, like Heidegger, who prefer to emphasise the first edition, are led to overlook the significance of this specific alteration to the text. It was probably motivated by certain reflections which Kant only developed as he worked on the *Metaphysical Foundations of Natural Science*. In the 'Preface' to this work he claims, as in the *Critique* at B 291, that we require outer intuition 'in order to give any meaning to the pure concepts of the understanding' (IV: 478). To interpret the significance of this claim we should note that the first edition of the *Critique* actually only ascribes a relative priority to time insofar as the two pure forms of intuition, since they belong to the two different forms of inner and outer sense, are independent of one another and in principle share an equal status. The addition of the 'General Note' in the second edition introduces in turn a second and complimentary priority which is not, however, fundamentally new in character. For this argument, this (pre-eminent) interest in the objectivity of the external world, already appears in the first edition of the *Critique*, indeed in the opening sentence of the 'Metaphysical Exposition': 'By means of outer sense [...] we represent to ourselves objects as outside us' (A 22; B 37).

Thus Kant defends two complimentary priorities. On the one hand, every representation of outer sense is also presented within the unity of consciousness: inner sense brings the spatially ordered sensations, mediated by outer sense, into the mind where they are further

temporally ordered as well. The outer sense which is responsible for the perception of the external world helps to procure objective reality for all the activities of consciousness, including that of self-knowledge. Since pleasure or pain are not regarded as capable of objectivity, it is outer sense which furnishes the ‘proper material’ for inner intuition (B 67). In the first edition version of the chapter on the ‘Paralogisms of Pure Reason’ Kant expands on the same point. He indicates that all ‘appearance to outer sense has something fixed or abiding [...] whereas time, which is the sole form of our inner intuition, has nothing abiding’ about it. That is why we have so much a priori knowledge with respect to the ‘doctrine of the body’, but none whatsoever with respect to the ‘doctrine of the soul’ (A 381).

6.4 A Sensibility Independent of Experience

The ‘Metaphysical Exposition’ of the first *Critique* directly challenges the three most significant conceptions of space and time defended in his own period, all of which could be described ‘realist’ in the broad sense of the term. These conceptions ultimately derived from Descartes, Newton and Leibniz. As always, Kant develops his own conception in a systematic manner rather than through a specifically ‘historical’ argument with his own predecessors. It is this systematic conception which then permits us to identify the relevant historical ‘opponents’ to his own view. He only engages directly with Leibniz, and then only in the appendix on ‘The Amphiboly of Concepts of Reflection’ and the associated ‘Note’. Kant’s own discussion of the different conceptions of space and time does not even follow the historical sequence of the positions in question (B 37 and B 56). The fact that he begins with ‘the party of the mathematical scientists’ (Newton), then considers the party of ‘metaphysical theorists of nature’ (Descartes), and finally concludes with a discussion of Leibniz may even suggest a certain hierarchy in the sequence. If we wish to defend a realist conception of space and time, then the first position, which interprets them as ‘real existences’ or independent substances is surely the least plausible of all. It seems more convincing to claim, with the second position, that space and time are essential features or attributes, and perhaps most convincing of all to argue, with the third, that space and time express the relations between things. The principal problem with the latter view, in Kant’s eyes, is simply that

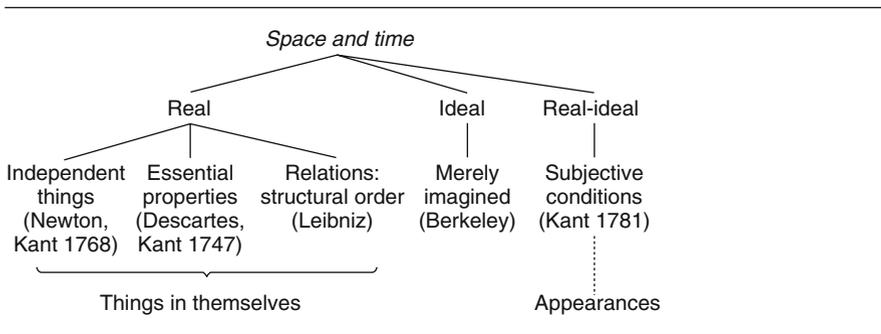
space and time are here 'also supposed to characterise things in themselves' (B 37).¹

Kant rightly ascribes the first of these conceptions, one which he had himself once shared (II: 378), to Newton who writes in the *Principia mathematica* as follows: 'I. Absolute, true and mathematical time, of itself, and from its own nature, flows equably without relation to anything external, and by another name is called duration [...] II. Absolute space, in its own nature, without relation to anything external, remains always similar and immovable' (1713³: English translation: 6). As an independent stable relational system which is quite independent of bodies, absolute space is here conceived as an empty but infinitely large vessel that encloses all things within itself (B 56).² The second conception, which Kant himself came close to endorsing in his first published essay (*Thoughts on the Estimation of Living Forces*, Section 9–10), was that defended by Descartes. He regarded space as an essential property of matter which could be abstracted from experience itself (*Principia philosophiae* II, 1, 4, 10). And finally Kant also rejects Leibniz's view, developed in explicit opposition to Newton, that space and time are ultimately certain systems of relations (*Philosophische Schriften* II: 450; cf. B 331). A fourth, 'idealist', view that regards space and time as merely imaginary (cf. B 274 with reference to Berkeley) is only indirectly repudiated by Kant insofar as he develops his own alternative philosophical programme which can be described as both idealist and realist in character (cf. Chapter 8.1 below). In the case of Descartes, Newton and Leibniz it is clear that theological considerations also continue to play a significant part in their thinking. Newton, for instance, regarded absolute space as the infinite and uniform *sensorium* of God himself (*Opticks* III, qu. 31), as something that must be infinitely extended if it was to harbour the Lord of creation who transcends all finitude and occupies the entirety of space. It marks a significant advance that Kant explicitly detaches the theory of space and time from all theology. In this respect his own doctrine is entirely secular in character.

Kant operates throughout with the pair of exhaustive disjunctions which he had employed in the preceding process of abstraction just described. On the one hand, a representation is either empirical or a priori, and on the other, it is either an intuition or a concept. His argument thus proceeds in two double steps which reverse the sequence of the preceding abstraction. (A fifth argument inserted

between these steps belongs to the transcendental exposition of the forms of intuition). It is through these arguments that he elucidates the ‘ontological’ status of space and time for transcendental philosophy: they are subjective conditions of sensibility (B 42ff. and B 49ff.). The extremely brief text here seems to resemble a summary statement of results rather than a fully elaborated argument. Yet Kant’s intention of overcoming the alternatives of rationalism and empiricism is clearly presented and defended. On the basis of his first pair of positive and negative arguments, directed against empiricism, space and time are (1) not representations which are derived by abstraction from experience, but (2) are necessary a priori representations which are also conditions of the possibility of all appearances. But according to the second pair of arguments, in opposition to the rationalist position which treats space and time as concepts, the representations in question are (3) not discursive, but (4) intuitive in character (Table 6.3).

Table 6.3



(1) According to the first negative thesis, space and time cannot be derived from abstraction from experience because – and this is the positive aspect of the claim – they ‘already underlie’ all outer or inner sensations (B 38; cf. B 46). If I am to perceive the chair as external to me and in front of the table, I must already presuppose – in addition to the representations of myself, the chair, the table – the representation of something outside me, something within which chair, table and empirical subject can assume ‘shape, magnitude and relation to one another’ (B 37) in the first place. In the first *Critique* (A 373) and

in the *Doctrine of Right* (IV: 245), Kant points out the double sense of an expression like 'outside me': it does not merely signify something that is conceptually distinct from myself, or *praeter nos*, but also something that is in a different place from myself, or *extra nos*. Space thus proves to be indispensable for all external perception. And something comparable is true of time: in order to be able to experience events as successive or simultaneous, we must already presuppose, or bring with us, the temporal ordering, or succession and simultaneity itself.

Kant's argument against Newton would thus run like this: if (absolute) space were an object in its own right which enclosed normal objects like a container, it would have to occupy a specific position in relation to these other objects, and thus already be in space itself. Similarly, if space, as Descartes claimed, were a property of things, it would have to possess shape and position, and consequently already be present in space itself. In this connection, it makes no difference whether we regard the properties themselves or their instantiations, the objects with their corresponding properties, as spatial and temporal.

(2) Kant's second, directly positive thesis, explicitly brings out the positive aspect of the first: that space is already presupposed as the a priori in which things with their properties and ordered relations are given. Likewise, time allows things to be 'now' or 'then', to be 'initially thus, and later otherwise' etc. Nor can we say that space and time provide some pre-given relational context or background to experience. For while they do constitute an order, it is one that the (receptively) intuiting subject brings with it in order to relate its perceptions to different times and places.

If we attempt to think away everything that is actually present from space and time, we are not finally left with nothing, but merely with the medium of what is outside us and external to itself, with the medium of the successive or the simultaneous: with the pure forms of intuition. And Kant claims – without any further argument it is true – that we cannot abstract further from the latter: 'We can never represent to ourselves the absence of space, although we can quite well think it as empty of objects' (B 38f.). And likewise he says: 'We cannot, in respect of appearances in general, remove time itself, though we can quite well think time as void of appearances' (B 46). Thus even the realm of sensibility there is something with which we are acquainted

'in advance', rather than on the basis of abstraction or empirical perception, namely the a priori structural moments of the subject.

It is said that the Japanese language is not centred on the individual in the western sense of the word, and it has thus been claimed that it does not recognise the intuitive form of time intrinsically related to the subject as defined by Kant in the *Critique of Pure Reason*. But the alleged 'subjectlessness' of Japanese does not actually relativise or invalidate Kant's theory of time. For the subject in question here is not an empirical individual, and, as a pure form of intuition, the time which is indispensable for any objective cognition precedes every empirical language, including the specific linguistic form of the Indo-European languages. The only thing which would speak against Kant's view here is something that appears impossible to imagine: a nature devoid of temporality.

Nonetheless, various analytically oriented interpreters of Kant have doubted the a priori character of the forms of intuition. Strawson (1959) has done so with respect to space, and Bennett (1966: 4) with respect to time. Thus, according to Strawson, if we hear a series of sounds, then we can be said to have an experience without any spatial ordering. And someone who lived entirely in an acoustic world would be unable to make sense of the concept of spatial order. But Kant here would object that if the sounds are not an auditory hallucination of the subject, but are signals of an actually existing world, and are thus an objectively valid experience, then they must at least come from outside the hearing subject itself. A creative composer can certainly 'hear out' new sequences of sound, newly create such sequences for himself, like a God in miniature as it were. But since for him too the acoustic signals of a 'real world', as in a performance of his work, come from outside, space also remains an indispensable exteriority for him. Although the sounds, considered on their own, can initially only be distinguished with respect to the acoustic parameters of pitch or loudness, we must recognise that one sound comes from this direction, while another comes from that, and this clearly presupposes space in its second aspect of externality. Space thus proves indispensable in three fundamental respects: for the objectivity of sensations, for their individuality, and for their relation to one another.

Bennett doubts the a priori character of time because there is nothing internally self-contradictory about the idea of a non-temporal world. For the assertion that all sensory data are temporal is not itself

an a priori claim. Even if time does assume a special role in our experience, it is not absolutely necessary in principle. Although it may be impossible for us to imagine time away, it is nonetheless contingent. Now Kant actually thinks that a non-temporal kind of intuition is in principle possible, although only for God or the 'original being' for whom concept and intuition are one. But of course the first *Critique* is not concerned with this kind of non-spatial, non-temporal, and purely 'intellectual intuition'. It is solely concerned with the intuition that is dependent upon external sensations which inner sense represents as successive or simultaneous. And this is precisely what time is. Kant does not hold that a non-temporal world is simply impossible, but claims that such a world is bound to conditions which are intrinsically closed for 'us human beings' (B 35). It is for us, and only for us, that Kant claims the a priori necessity of the pure forms of intuition.

It is uncontroversial to claim that space and time, as the condition of anything that can be present or given to us, furnish a certain unity in relation to a multiplicity, but the precise character of this unity is certainly disputed. Generally they have been treated, like all concepts, in terms of the relation between the logical species and its individual instances. But this conception of 'the one' as 'the universal', according to Kant's second pair of arguments, does not properly apply to space and time at all. Hence (3) they do not possess the distinctive character of discursive concepts, but (4) are essentially intuitive or perceptual in character.

(3) According to the first of Kant's second pair of arguments, again a negative one, the antecedent unity and uniqueness of space and time prevents us from treating them as conceptual in nature. As far as concepts are concerned, an individual object, like a specific chair, is a 'case' with respect to the conceptual universal, and presents itself as an independent instance of the concept. But can we object that all the points which lie on the y axis of a system of co-ordinates are a 'case' of the property of lying on the y axis, so that spatial determinations could indeed be treated as predicates, and thus as non-intuitive elements? Kant would regard the co-ordinates not as spatial determinations, but as algebraic ones ultimately dependent upon time insofar as we must traverse the co-ordinate points one after another. A second possible objection to Kant's analysis, which argues that (mathematical) sets present a non-spatial part-whole relation, can also be countered: with respect to the alternative between concept and formal intuition, Kant

would ascribe the sets to the latter. Such objections show at most that modern mathematics, which has long since developed in the direction of a universal structural theory, cannot easily be accommodated to Kant's own division between geometry and arithmetic and the way in which algebra is tacked on to this approach.

In contrast to an individual instance of a concept, any individually determined space – whether a mathematical one or, like a lecture hall, an empirical one – is always a 'part' in relation to a single (world) space. Thus the unity of space is not a universal in relation to a particular, but a whole in relation to its parts. The partial spaces in question do not exist independently in their own right, but are merely delimited as specific parts of one unitary total space. Spaces, like segments of time, are contained within one another. As a counter-argument one cannot properly appeal (with Brandt 1998: 101) to the concept of the '*omnitudo realitatis*' (B 604). For the latter is not concerned with space-time at all, but merely the concept of an exhaustively complete reality. One could of course regard partial spaces as simply relatively dependent ones, like the various components of a desk which already exist as the writing top, drawers, legs, etc. from which the desk is subsequently constructed. But in the case of space itself, according to Kant, there is no subsequent composition of parts, in the way that concepts might be put together from subsidiary concepts to form a *compositum*. There is merely a delimitation of partial spaces on the basis of the prior unity of space. And according to the 'law of the divisibility of space' every part of space, unlike a part of a desk, is once again a space (B 552; cf. B 439). Space is not a *compositum* but a *totum*, always a whole (B 446): 'It is only as thought *in it*' (B 466), in space as a totality, that the specifically delimited parts already underlie the representation of a unitary whole. Nor can we say that we can conceive an individually determined period of time, like the hour-long duration of a lecture, independently of other periods of time or of the total representation of temporal succession. On the contrary, it is only a dependent temporal segment of an underlying unitary totality of time. Whereas the concept, as a 'one over many', is a universal, space and time are in each case a kind of singular 'thing'.

(4) According to Kant's second, and positive, argument space and time are infinite magnitudes which do not contain an infinite number of representations 'under' them, but an infinite number of objects 'within' them. The concept of the desk, for example, furnishes

the common characteristic for a potentially unlimited plurality of instances. The individual desk – here the fourth argument connects up with the third – is a case of the universal concept, whereas an individually determined segment of space or time is part of an all-embracing whole, or, for physics, of the universe.

Notes

1. Christian August Crusius had already rejected all three of these options, at least with regard to the character of space: 'Firstly space should not be regarded . . . as a substance . . . Nor in addition should it be regarded as an inherent property . . . Finally, it should not be regarded as a mere relation either' (*Entwurf der nothwendigen Vernunft-Wahrheiten*, Section 49ff.).
2. The tremendous authority of Newton ensured that this conception of space continued to prevail far beyond the middle of the 19th century. It was Ernst Mach (1888: 213ff.), as both physicist and philosopher, who first succeeded in completely breaking the hold of the Newtonian conception and thereby opened the way for the new scientific developments like the theory of relativity. But he only rejected the idea of absolute space through recourse to an external argument against the possibility of any a priori knowledge whatsoever. In this connection we may note that the physicist Tim Maudlin (2002) has recently attempted to rehabilitate Newton's theory of time as something objective and ontologically primary in character, and thus as an intrinsic kind of substance.

CHAPTER 7

A TRANSCENDENTAL GEOMETRY

7.1 Mathematics, Metamathematics and Metaphysics

The metaphysical exposition of the ‘Aesthetic’ has brought a fresh perspective to the traditional question concerning the nature of space and time. But it is the transcendental exposition which first effectively introduces us to Kant’s new question concerning the possibility of certain sciences. The specific manner in which the relevant sciences, namely those of mathematics and mathematical physics, deal with space and time is, of course, the concern of the sciences themselves, but it is the concern of philosophy to show how their approach is possible in the first place. In this respect philosophy attempts to develop a double demonstration:

On the one hand, Kant binds geometry to the nature of space and arithmetic to the nature of time as pure forms of intuition and thereby builds upon the twofold result already obtained in the metaphysical exposition. Firstly, the synthetic a priori character of geometry requires an intuitive rather than a discursive object since concepts alone are incapable of extending knowledge. Merely navigating the world of the understanding cannot yield anything other than analytical propositions. Secondly, the object of geometry, namely space, cannot be empirical in character since the propositions of this science, while synthetic, are nonetheless apodictically valid (B 41).

On the other hand, Kant furnishes us with the basic components for a philosophy of mathematics and of mathematical physics. For spatiality makes geometry possible and temporality makes the a priori part of general theory of motion and, through reference to counting, arithmetic possible (*Prol.*, Section 10 and B 182). Of course, the transcendental theory of these sciences involves further elements as well, and mathematics in particular, like every form of cognition, also requires categories, which is why Kant says that we can only possess

mathematical space 'in thought' (*Prolegomena*, IV: 288). In this connection we should also recognise the importance of parts of the chapter on schematism, the first half of the 'Principles', and the first section of the chapter on the 'Discipline of Pure Reason'. But that part of the transcendental theory which is specific to geometry, namely the role of 'construction' in pure intuition (B 741), is already outlined here in the 'Aesthetic'.

Plato, as one of the first great philosophers of mathematics, ascribed the objects of mathematics to the eternal realm, but of course he regarded them as conceptual things of the understanding rather than as objects of sensuous intuition (*Republic* VI, 509d–11e). And he developed this approach, which was almost universally adopted by other thinkers (cf., for example, Augustine, *De civitate dei* XI, 29), specifically in terms of the pedagogical task of leading the soul upwards from the sensuous to the intellectual world (*Republic* VII, 517b). Kant also regards mathematics as a science of eternal objects, but he ascribes no special pedagogic value to it. His own theory merely recognises the epistemic autarchy of mathematics. Above all, however, he explicitly contradicts the entire Platonic tradition by redefining its essential relation to the domain of sensuous intuition.

Great mathematicians have often liked to present themselves as Platonists. For the specific object of their science has existed, after all, from the very beginning of the created world. This object does not appear to be something made or invented, nor to be something conventionally agreed or established; on the contrary, it is something essentially found or discovered. It is impossible to contest a popular 'demonstration' of this fact: if we transmitted a series of prime numbers into outer space, it is clear that any rational being in other galaxies would also be able both to identify them as such and to continue to the series. But the thought-experiment only confirms the a priori character of mathematics which renders it universally valid for all rational beings – something which has never really been questioned between the time of Plato and Kant. But the experiment in question decides nothing concerning the alternative of 'concept or intuition' with respect to the nature of mathematics. Kurt Gödel also regarded himself as a Platonist precisely because he assumed a special world of abstract concepts in addition to the world of physical objects. But since he believed these concepts were accessible to sensuous intuition (cf. Dawson 1999: 76), he should really have thought of himself as a Kantian.

However innovative Kant proved to be on the meta-theoretical level, he remained inevitably beholden to traditional ideas on the object-level of physics and mathematics, there where subsequent progress would be so striking. For his assertions that space possesses only three dimensions (B 40, amongst other places), that a straight line necessarily represents the shortest distance between two points (B 204), and that three points must always lie in the same plane (B 761), hold specifically for the Euclidean geometry which was still the only form of geometry recognised in his time. In this respect Kant makes a three-fold claim that can no longer be accepted in all three aspects: (1) that there is only one form of mathematical geometry, (2) that this form consists in Euclidean geometry (cf. B 16 and B 299), (3) that the propositions of this geometry ‘also incontestably’ apply to empirical intuition (B 206). Kant certainly recognises the methodological difference between mathematics which ‘produces its principles and the representation of the object [...] entirely a priori within the mind’ and ‘the appearances (the empirical objects)’ in which these principles ‘reveal their meaning’ (B 299). Thus he does not, as Carnap (1966: 180) and many others have assumed, methodically identify pure mathematical geometry with applied physical geometry. But since pure mathematical geometry is ‘incontestably’ supposed to apply to empirical intuition, it investigates spatial structures which are not merely possible but actually hold true of the world, that is, ones which can be ‘constructed’ within pure intuition. But Kant thereby overestimates the range of our pre-empirical knowledge and duplicates the exclusive rights of Euclidean geometry. For he regards both the world of pure geometry and the world in which we live as uniquely defined in Euclidean terms. (For the recent evaluation of Kant’s theory of mathematics cf. Posy 1992, for the development of his views cf. Koriako 1999, for an argument against the over-hasty criticism of Kant’s claim that the propositions of Euclidean geometry are synthetic a priori in character cf. Wolff 2001).

7.2 Does Mathematics Involve the Synthetic a Priori?

Mathematics has long been a particular object of fascination for philosophy. The attempt to derive an entire ‘system’ of thought deductively from a few axioms or fundamental principles, the so-called *mos geometricus*, had even come to represent the dominant ideal of

philosophy during the 17th and 18th centuries. Kant does not fall victim to this ideal. And nor indeed did Plato, who held that while mathematics depended upon indemonstrable propositions (*hypotheseis*), philosophy could ascend to an original source that no longer required any demonstration (*anhypothetos arche*, cf. *Republic* VI, 511b–d). Kant certainly regards mathematics, this ‘pride of human reason’ (B 492) as the model of a successful science, as the fundamental language, as it were, of all natural science, and not least as a genuine form of rational cognition that is itself specifically independent of philosophy: ‘Philosophical cognition is rational cognition out of concepts, mathematical cognition is cognition out of the construction of concepts’ (B 741). Now this Kantian approach to synthetic a priori knowledge has been challenged and indeed rejected as ‘fundamentally mistaken’ by two important lines of thought, one drawing on theoretical mathematics and the other on mathematical physics.

An alternative position represented by *theoretical mathematics*, on the basis of an analytical view of mathematics, can already be found in Leibniz and was later developed by Russell (1910) and then by Russell and Whitehead in collaboration (1910–13). This approach, via the philosophy of ‘logical empiricism’, initially became a fundamental element of analytical philosophy in general, and later an (almost) universal philosophical assumption. Leibniz grounds mathematics exclusively on ‘identical axioms’ and the principle of non-contradiction (*Nouveaux essais* IV, 7). Kant certainly agrees that geometry contains identical propositions, such as ‘for example, $a = a$, the whole is equal to itself, or $(a + b) > a$, that is, the whole is greater than its part’. But these serve merely for ‘the chain of method and not as principles’ and precisely for this reason, as formal rules of inference, they are not specific to mathematics at all. They only become mathematically significant once they ‘can be exhibited in intuition’ (B 17), that is, once they can be exemplified a priori in sensibility. The genuine principles which are specific to geometry, on the other hand, are propositions such as that which asserts that ‘the straight line is the shortest path between two points’ (B 16f.).

Any attempt to play Leibniz off against Kant must therefore ignore Kant’s differentiated account of the relevant principles and treat all of them as entirely analytic. This is precisely what Frege (1884) undertook to do for arithmetic when he defined number, the fundamental concept of mathematics, by purely logical means. And David Hilbert,

the founder of the formalist perspective that remains dominant in contemporary mathematics, argued, by recourse to axiomatisation, for the analytic character of both geometry (1909³) and arithmetic (1934).¹

Neither Frege's purely logical definition of the fundamental concept of mathematics nor Hilbert's axiomatisation are sufficient to justify the purely analytical character of geometry or arithmetic. Kant would not challenge Frege's general perspective, but he would also insist that the process of counting can only occur within time as a pure form of intuition. And just as Hilbert subsequently claimed, Kant himself agrees that 'in mathematics we have no concept whatsoever prior to the definition' (B 759). But Kant regards mathematical knowledge (including algebra: B 745 and 762) as more than analytic because he argues that it derives not simply from concepts themselves but only in relation to some corresponding intuition (B 741). There is therefore no dispute about the considerable analytic aspect of mathematics. What is at issue is the question whether mathematics is exclusively analytic in character. As far as geometry is concerned, the dispute can only be decided with reference to the nature of space, a question which the debate concerning the foundations of mathematics does not itself directly address. But if Kant's metaphysical thesis concerning space as a pure form of intuition is found convincing, then his transcendental thesis concerning the a priori synthetic character of geometry will also gain in plausibility.

On the other hand, from the perspective of theoretical physics, we find von Helmholtz (1921: 23) claiming that 'the geometrical axioms certainly tell us not merely about relations of space alone, but also simultaneously about the mechanical relationships involved in the motion of the most solid of bodies'. On this view, the relevant axioms also directly concern the empirical processes of nature and thus resemble idealised formulations of actual facts and circumstances. What counts as the 'correct' geometry is itself discovered through empirical investigation and must therefore forfeit its alleged a priori character. In this connection Einstein rightly objected (1921: 5f.) that pure geometry can only be regarded as a natural science, specifically as a branch of physics, once we include the further proposition that 'solid bodies, with respect to their possible positions, relate to one another like the bodies of Euclidean geometry'. Henri Poincaré also regarded axioms as conventions and thus considered that the question whether

space or not 'really' possesses a Euclidean structure is intrinsically meaningless (1902: 47ff.).

Both of these objections with respect to the synthetic or the a priori character of mathematics can readily be reconciled with one another. For if we contrast pure mathematical geometry with 'applied' or physical geometry directly related to experience, then mathematical geometry could be a priori valid and analytically true at the same time. Physical geometry, on the other hand, could be regarded as an empirically testable system of hypotheses concerning the properties of physical space, and consequently as a case of synthetic a posteriori truth.

Since Kant's 'Aesthetic' is principally concerned with pure mathematics, we can here leave aside the claim concerning the empirical character of applied mathematics. But the claim concerning the a priori character of pure mathematics is not nearly as uncontroversial as is commonly assumed. For there are two mathematical 'schools' that directly contest this claim: the intuitionist theory, building since 1907 on the work of L. E. Brouwer, and the constructivist theory of Paul Lorenzen (1955) and E. Bishop (1967). The intuitionist school only permits the construction of 'concepts' which are effectively developed step by step with reference to the process of counting. For Kant this approach thus presupposes time as a form of pure intuition, although Brouwer himself appeals to a kind of original intuition instead. The constructivists in turn take up Kant's basic idea concerning the construction of concepts. On their view it is not enough to know that an object, for example, a number between 1 and 2, somewhere exists. They also demand a principle through which (in a finite period of time) we can mentally construct the number in question. The difference between the constructivist and the formalist position is evident from the relevant demonstration of the infinite plurality of prime numbers. The formalist appeals to the impossibility of grasping all prime numbers as a determinate finite quantity. But the constructivist begins with the infinitely many prime numbers, extends a given quantity, discovers that this process can be repeated indefinitely, and thereby infers the infinity of prime numbers. Since this sort of constructive process necessarily transpires in pure intuition, the constructivist here ends up on Kant's side of the argument.

Even analytical philosophers like J. Hintikka (1973: 194ff.), and before him E. W. Beth (1956/57), have sometimes doubted whether

mathematics is merely analytic in character insofar as it also involves intuitions and individual representations that are non-logical elements. According to K. Lambert and C. Parson (cf. Brittan 1978: 56ff.) the axioms of geometry also include existential propositions such as ‘there exist at least two points’ which are not themselves logical truths. For this reason mathematics is valid not in ‘all possible’ worlds, as Leibniz puts it, but only in all ‘actually possible’ worlds.

In his critique of the allegedly analytic character of pure geometry Brittan (1978: 69ff.) distinguishes three senses of ‘analytic’, none of which he finds ultimately convincing. In the first place, geometry is analytic if the assumption of a contrary proposition involves it in self-contradiction. But one may challenge the axiom of parallel lines without rendering geometry self-contradictory since the non-Euclidean geometry of Reimann includes Euclidean geometry within itself as a special case. If it is extended to arithmetic, this first argument implies that different axioms can yield different, though internally non-contradictory, set theories. In the second place, geometry is analytic if its propositions can only be derived by means of definitions and logic alone. But as a system of purely logical truths, geometry would necessarily be valid in all possible worlds, and this cannot be claimed of Euclidean geometry. In the third place, pure geometry can abstract from all material senses and may thus be understood as a set of propositions which is simply subject to the criterion of non-contradiction and which cannot yet be interpreted in properly geometrical terms. Mathematics in this sense no longer deals with points, lines and areas, but merely with P’s, S’s and B’s as the elementary concepts of an axiomatised theory. It is indeed analytic insofar as its claims are derived from freely posited axioms. But we should not confuse the conceptual distinction between interpreted and uninterpreted theoretical propositions with an argument as such.

There is a further and more important objection to be considered here: that the uninterpreted propositions in question do not concern spatial relations, that they are thus ‘empty’ and ‘contentless’ with respect to spatiality, and therefore that they cannot constitute a ‘mathematics of extension’ (B 204) or a genuine geometry.² It is only the spatial interpretation, an interpretation at the first level, that produces genuine geometries out of the plurality of uninterpreted propositions. Physics selects and privileges certain aspects of these mathematically

possible geometries. Physical geometries thus arise from the mathematical geometries through an interpretation at the second level where they are applied to experience in the context of a specific empirical theory.

7.3 The Indeterminacy of Transcendental Space

Kant's exclusive claims on behalf of Euclidean geometry can obviously no longer be sustained after the modern discovery of non-Euclidean geometries and their successful application in the context of the general theory of relativity. But does this imply that the transcendental part of the 'Aesthetic', and 'in retrospect' perhaps the metaphysical part as well, must therefore be regarded as hopelessly obsolete? Is this merely another example of those supposedly 'eternal truths' which philosophy since Plato has so readily proclaimed but which have effectively already been refuted by the actual advances of science? Precisely in order to avoid this fatal conclusion Walter Bröcker (1970: 22) has distinguished between the intuitively given three-dimensional space of Euclid, which enjoys the status of a transcendental space which all physics must take as its point of departure, and the empirical space towards which physicists must advance in the specific context of scientific investigation and into which they must transform what has been discovered with respect to transcendental space. This distinction weakens Kant's thesis concerning the mathematical uniqueness of Euclidean geometry by ascribing an exceptional transcendental status to it instead. Peter Strawson (1959) pursues a similar strategy when he defends Kant against 'positivist approaches' by appeal to the idea of a specifically 'phenomenal geometry'. And according to Helmholtz (1921: 22) 'we already find ourselves, by virtue of our own bodily organisation, quite incapable of representing a fourth dimension for ourselves in any intuitive manner'. It is nonetheless true that Poincaré himself doubted that the three-dimensional character of space is actually an empirical-psychological necessity for beings like ourselves (1904: 70) (For Oscar Becker's argument in favour of the special status of Euclidean geometry, cf. Janich 2002.).

The various proposals we have mentioned here do not merely take account of our 'natural' intuition of space. They also serve to explain

why Euclidean geometry has continued to this day to remain both mathematically possible and empirically valid in the general domain of our experience. But the assumption of a special transcendental status contradicts Kant's own transcendental claim to uncover and identify elements that hold for *all* possible experience. For this approach allows experience to decide the validity of the a priori conditions of experience, and that contradicts the core argument of the first *Critique* as such.

A consistent defence of Kant would have to proceed in a radically different way. In the first place, it would accept the 'discipline of self-control' (B 814) that Kant recommends and refuse to ascribe any special transcendental status to the only geometry that was recognised in Kant's time, or indeed to any other geometry. In the second place, through a kind of 'transcendental asceticism', it would acknowledge the advantageous and important dispensation afforded by the Kantian approach: that the philosophy of space as such can proceed entirely independently of any scientific investigation of space. In the third and final place, we can read the 'Aesthetic' in terms of this asceticism and recognise that Kant actually subjected himself to the same, even if not always with the requisite degree of clarity. For in fact he never attempts to demonstrate the Euclidean axioms themselves. Indeed in his very first publication, three generations before the time of C. F. Gauss, J. Bolyai and N. J. Lobatschewsky, he explicitly acknowledged the possibility of non-Euclidean space, namely of 'an extension with other properties and dimensions' than those familiar in the 'threefold dimensions of space' (*Thoughts on the Estimation of Living Forces*: Sections 9–11). But since the 'Aesthetic' of the first *Critique* is concerned solely with the basis of all external intuition, of spatiality as such, neither Euclidean nor any other kind of geometry properly belongs to it.

The concept of transcendental space which is decisive for Kant's programme possesses no specific determinacy at all. Since this materially indeterminate space belongs on a higher logical level, as spatiality or as space in general, it consists simply in that exteriority to myself and that mutual externality that underlies all more precisely qualified representations of space. In order to distinguish clearly between transcendental and mathematical geometry Kant himself avoids making any specific mathematical claims (B 754f.), just as he concedes that the 'secure advance' of geometry proceeds without

requiring any 'certification' on the part of philosophy (B 120). The decision *for* any particular conception of space, or that *against* any other conception, cannot therefore be grounded in terms of transcendental space itself. The a priori presuppositions of geometry uncovered in the first *Critique* consist merely in the representation of spatiality, and for mathematics in the representation of temporality, and coincide precisely with the metaphysical concepts of both.

It is true that some of Kant's own further remarks are therefore methodologically problematic. Thus he describes the relationship between transcendental and geometrical space as one that 'really flows' from the other (B 40), which makes geometrical propositions appear as if they were inferences directly based upon the character of transcendental space. Kant also regards geometry as a 'brilliant example' of the way in which 'bodies of a priori synthetic knowledge can be derived from space and time' (B 55; cf. B 147). If transcendental space were a premise which actually facilitated deductive inferences, then it would indeed possess the privileged status of which many a philosopher, though not Kant himself, has perhaps dreamed: so that a mathematical treatise could begin with a specifically philosophical theorem, in this case, that of a transcendental geometry.

Kant's reference to the 'presupposed' or underlying character of space (B 38f.) is more germane to the argument. Transcendental space must be regarded not as a mathematical premise but merely as a necessary precondition. Whenever we propose specific geometrical propositions, even initial propositions or axioms, we already presuppose a transcendental geometry in the background. The object of this geometry, bare spatiality, does not itself belong to mathematics, but furnishes the horizon within which mathematicians construct spaces with specific structural features and properties. Insofar as they proceed through processes of free positing and imagination they can be said to develop an axiomatic science in Hilbert's sense. But as a system of assertions concerning spatial determinations such a science also requires a presupposition which is no longer free: a pure form of intuition as a synthetic a priori which makes no special claims but simply consists in mere spatiality. While it is true that mathematicians may forego a spatial interpretation of their axioms, this also means that they must content themselves with a geometry independent of space, with a 'geometry-free geometry' as it were. But Kant was essentially

concerned with geometry as a science of space which must also be applicable to the empirical realm, and thus with a geometry that the science of physics can employ. And here we must also acknowledge the role of the synthetic a priori in the science of mathematics.

Kant himself recognises the intrinsic difference between transcendental and Euclidean space insofar as he does not deploy the three-dimensional character of Euclidean space as a specific argument for the possibility of geometry. He merely treats this character as an example of those apodictically certain propositions which constitute geometry in its entirety (B 41). The three dimensions are here regarded as a predicate of mathematical rather than transcendental claims. Transcendental claims, for their part, are independent of all mathematical geometry and therefore have nothing to contribute to the later debate concerning the ‘alternatives’ of Euclidean or non-Euclidean geometry. On the other hand, Kant himself overlooks the difference between transcendental and Euclidean space when he regards the object which is claimed to possess ‘only three dimensions’ (B 41) simply as ‘space’ itself. At a time when mathematics and physics alike only recognised a *single* form of geometry, namely Euclidean geometry, the difference in question was of course more difficult to identify. Since the relevant distinction is methodological in character, it remains valid even when, as in Kant’s time, it is not effectively recognised as such. But the mathematical possibility of Euclidean geometry can only be decided upon by the mathematician through recourse to the appropriate ‘construction’, and its physical validity can only be decided upon through recourse to experience which is independent of any specific mathematical commitments.

Although the ‘Aesthetic’ forfeits some of its significance in the light of these considerations, it is by no means irrelevant to mathematical theory and has two arguments to contribute to the debate surrounding the foundations of mathematics. Kant’s first direct argument expressly counters certain fundamental claims of Plato and Leibniz: geometry, as a theory of spatiality, is a science of space as a pure form of intuition. This approach concurs with that of the constructivists insofar as it also treats constructive principles concerning spatiality as the basis for the propositions of a (genuine) geometry. But these constructive principles are not derived from a transcendental space which is neither three-dimensional nor four-dimensional, neither linear nor curved. Space in this sense is entirely indeterminate from a mathematical

point of view and permits different theoretical commitments and corresponding different systems of constructive principles. Kant's second indirect argument, which lends support to the axiomatic interpretation of geometry, also follows from the mathematical indeterminacy of transcendental space: the initial elementary propositions of geometry, as freely posited propositions, exhibit a certain decisionistic character. And both arguments taken together strongly suggest an idea that further investigation into the foundations of mathematics could productively explore in detail: namely that the axiomatic and constructivist theories of geometry should not simply be regarded as mutually exclusive alternatives, but should rather be mediated with one another along the lines suggested by Kant.

In an analogous manner we can see that mathematical geometry also forfeits some of its epistemic significance. According to Kant, the claims of pure geometry are 'undeniably' valid for empirical intuition (B 206). In fact mathematics merely develops possible spatial structures, while the spatial structures that hold in the actual world require additional empirical considerations.

Notes

1. Hilbert attempted to ground mathematics in an entirely immanent manner. Responding expressly to the antinomies of set theory, widely interpreted at the time as a crisis in the foundations of mathematics, Hilbert developed a theory of proof which was intended to secure the non-contradictory articulation of formal systems. This hope was dashed by Gödel's claims concerning incompleteness since non-contradiction can never be demonstrated within the parameters of the formal system itself (cf. Buldt et al. 2002: especially 147–61; Schoenfield 1967: 209–14).
2. Frege suggested, in a letter to Hilbert, that the latter was expressly attempting to liberate geometry from spatial intuition altogether and turn it into a purely logical science like arithmetic (cf. Gabriel et al. 1980: 70). This approach was specifically rejected by certain mathematicians such as Felix Klein (Klein 1895/1921–23, vol. 2: 232–40). Remarkably enough Hilbert actually opens his work *The Foundations of Geometry* with the following quotation from Kant (B 730): 'Thus all human knowledge begins with intuitions, proceeds from thence to concepts, and ends with ideas'. Hilbert claims that each of his five groups of axioms (the axioms of incidence, order, congruence, parallels, continuity) express 'certain interrelated and fundamental facts about our own intuition' (Hilbert 1909³: 2).

CHAPTER 8

SECOND ASSESSMENT: SENSIBILITY AND WORLD

Any systematic attempt to assess the continuing value of Kant's 'Aesthetic' must concern itself directly with three crucial themes of the first *Critique*: the difference between appearance and thing in itself (8.1), the specific contribution of philosophy to the sciences (8.2), and, intrinsically connected with both issues, the decisive task of walking the tightrope between an excessive claim or an excessive doubt with regard to 'eternal truth' (8.3).

8.1 An Idealism Beyond the Alternative to Realism

The ancient dispute between idealism and realism has recently flared up once again within contemporary philosophy. The realist position insists that the external world with all its constituent elements, and the corresponding states of affairs, exists entirely independently of the knowing subject. It also holds that some of these states of affairs can objectively be known as such. The idealist position, on the other hand, regards the world, and all its corresponding states of affairs, as in some way dependent upon the subject itself.

The 'Aesthetic' would appear to support the party of idealism in this dispute since Kant claims that space and time are constitutive for knowledge and yet are also something which the knowing subject itself brings to experience (B 37f. and 51). In truth Kant develops a sophisticated mediation of positions which he expressly describes as 'transcendental' (B 518f.) or sometimes as 'critical' idealism (*Prol.*, IV: 375). Because all of our knowledge is directed to appearances rather than to things in themselves, space and time can be characterised as both empirically real and transcendently ideal. Simplifying the matter somewhat, the prior theorem of the two stems of human knowledge implies that there can be no world without sensible experience,

and the principal theorem of the 'Aesthetic', the pure forms of intuition that make objectivity possible, implies there can be no world without a priori sensibility.

Since empirical knowledge depends on sensations, and these in turn are dependent on the subjective forms of intuition, space and time can be subjective and yet possess 'empirical reality' (B 44, taken together with B 52). On the one hand, space and time 'already lie a priori within the mind' (B 34) in advance of all experience, while, on the other hand, they are constitutive for experience itself. This conjunction of transcendental ideality, which we can describe as the 'contribution of theoretical subjectivity', with empirical reality, as the condition of the possibility of objectivity, dissolves and replaces both speculative-cosmological and empirical-physical theories of space and time.

Because no objects of outer intuition are possible without reference to space, Kant also contradicts a position which did not figure in the above presentation of philosophical alternatives: namely the 'dogmatic' idealism of Berkeley which treats space and all its things as merely imaginary in character. For Kant, on the contrary, the two forms of intuition in each case underlie two forms of objective knowledge: the empirical knowledge which depends upon spatio-temporal sensation, and the mathematical knowledge which, in the case of geometry, presupposes the pure form of space and, in the case of arithmetic, presupposes the pure form of time. But Kant is nonetheless an empirical realist (A 370ff.) in a weaker rather than a stronger sense. For he demonstrates the empirical reality not for the 'objective' forms of intuition of physics and mathematics, but merely for the transcendental space and the time which provide the pre-mathematical condition of these sciences.

Kant's critique of dogmatic idealism, however, does not lead him to endorse the obvious alternative position of a transcendental realism which treats 'space and time as something given in itself (independently of our sensibility)' (A 369; cf. B 519). Since this position regards space and time as independent of the knowing subject, and thus as things in themselves, it expressly contradicts the conclusions of the metaphysical exposition of the 'Aesthetic'. The original approach which he developed there furnishes the first part of Kant's philosophy of subjectivity. The idea of the Copernican Turn, initially introduced simply as a hypothesis (B xixff.), is first carried through in

the 'Aesthetic', with respect to sensibility, and subsequently employed, in the chapter on the 'Antinomies', to resolve the problem of the cosmological dialectic (B 518ff.). As a whole the Copernican Turn has a threefold significance: in the 'Preface' to the B edition it is presented as a suggestion (hypothesis), in the 'Aesthetic' and the 'Analytic' as knowledge (as a confirmed thesis), and in the chapter on the 'Antinomies' as the premise of a specific argument.

Now the acknowledgement of a certain subjective contribution or accomplishment in the sphere of perception is nothing new. Thus, what we perceive, how we perceive, and, finally, how far we are moved or affected by what we perceive, also partly depends on the activity of 'attention'. But all such contributions and accomplishments are entirely empirical in character, whereas Kant is exclusively concerned with the pre-empirical structural elements of knowledge. Aristotle, of course, had already asked whether time might not be something subjective since the past and the future are specifically thought through 'an act of the soul' (*prosenoon* – cf. *On the Soul* III, 6, 430b). Philosophy has thus long been aware of the possible argument for the subjective character of time. But Aristotle nonetheless rejects this approach. He certainly regards the soul, which we may interpret here as (theoretical) subjectivity, as a necessary condition of time, but only insofar as time, as a plurality of temporal units, is tied to the process of numbering, and this in turn depends upon the mind as the agent of numbering (*Physics* IV, 14, 223a 22–9). The fact that Aristotle failed to anticipate the idea of pure forms of intuition may well be connected with his particular understanding of mathematical objects in general. Since he clearly regarded the latter as abstractions from our experience of nature, rather than as constructions on the basis of a prior and original form of intuition, he develops a merely physical theory of time: time cannot exist without the movement of bodies, in the last analysis, without the circular movement of the fixed stars. And Aristotle's general approach to the question of space (*topos*) is very similar (*Physics* IV, 1–5). (For a brief exposition of Aristotle's theory of time cf. Höffe 1999²/2003: 128–30.)

Even Saint Augustine's highly significant contribution to the theory of time is still a long way from Kant's original approach. Saint Augustine 'discovered', and indeed vividly described, subjective time when he claimed in the *Confessions* (XI, Sections xx and xxvi) that the three temporal modes of the past, the present and the future

could only properly be found within the soul. But precisely because he opposes subjective time, which can only be intimately experienced as such, to objective and essentially measurable time, he too is unable to recognise time as a pure form of intuition that constitutes objectivity itself.

It did not take long for serious reservations to arise concerning Kant's own analysis. It was soon objected that the Aesthetic had not sufficiently grounded or clarified the twofold status of empirical reality and transcendental ideality. According to the Aristotelian perspective of Friedrich Adolph Trendelenburg (1967), Kant had overlooked the possibility that space could be both a subjective form of intuition and an objective property of things in themselves. Thus the process of knowledge, faced with the inexhaustible plurality of objective structures in the world, could simply have filtered out the ones which correspond to our specific cognitive faculties and abilities. This approach rejects the total reduction of the objective world to the subjective conditions of knowledge. It clearly contradicts the core claim of the epistemic revolution proposed in the first *Critique*: that there cannot be any antecedent objective world precisely because all objectivity is constituted by an a priori subjectivity. Trendelenburg's view of space, given his commitment to its independent reality in itself, also implies the transcendental realism which Kant expressly repudiates at B 42 and B 49.

According to Karl Vaihinger (1892, II: 290f.), Kant has wrongly assumed that 'the a priori is also purely subjective' in character. Inasmuch as the a priori of space and time is also supposed to encompass the mathematical determinations of both, this a priori does not actually possess a purely subjective character, but, insofar as it involves a construction of concepts, is itself objective. But the transcendental concepts which are decisive for the Aesthetic exclude all mathematical concepts. Exclusively concerned as they are with mere spatiality and mere temporality, such transcendental concepts furnish the non-empirical presuppositions of all mathematical and all physical determinations and thus, as a specific contribution on the part of theoretical subjectivity, possess a subjective character.

With regard to Paul Guyer's objection (1987: 362f.) that Kant makes exaggerated claims for the necessity of geometrical propositions, we

should bear two points in mind. On the one hand, the argument concerning geometry first appears in the ‘transcendental’ exposition of the Aesthetic, and thus plays no part in the demonstration of space and time as pure forms of intuition that is presented in the ‘metaphysical’ exposition. On the other hand, and above all, we should realise that the ‘transcendental’ exposition is not concerned with geometrical propositions themselves, but simply with showing how they are possible at all, and in this respect a weaker concept of their necessity is all that is required.

According to Peter Rohs (1973) and Henry Allison (1983: 102–12), the position of transcendental idealism can only be salvaged by recourse to considerations that go far beyond the first *Critique* itself. In this connection M. Willaschek (1997) proposes an ‘externalist’ reading of Kant’s argument: an intuition, or more precisely: sensation as the material of intuition, is produced through the affection of an object and also depends upon the object with respect to its (intentional) content. A material dependence of this kind actually appears plausible because theoretical subjectivity merely contributes the forms of intuition which require empirical experience to receive any substantive content. But we have already indicated the relevant argument against this externalist interpretation: while Kant certainly uses the terms ‘effect’ and ‘affection’, he regards the element responsible for the allegedly causal transaction expressly as a thing in itself. It is therefore essentially withdrawn from the categories, as the constitutive moments of appearance, and thus from the domain of causality as well.

8.2 Only Human Beings Pursue Mathematics

It is not some kind of rhetorical exaggeration when Kant declares that the pure forms of intuition are ‘nothing’ insofar as they are ‘considered in themselves’ (B 44, or B 52), but is simply the obverse expression of their subjectivity: spatiality and temporality have no absolute reality (B 50ff.) and are bound to an intuition entirely dependent upon sensibility. Since Kant describes this as ‘the human standpoint’ (B 42), we might be tempted to think that he is limiting the validity of his claims to a single biological species. But he does not speak of a

dependence upon the specific character of the human senses or the structure of the human brain in this connection, but simply, as we have already emphasised, of a dependence upon receptivity itself.

Newton's conception of space as the *sensorium* of God clearly belongs among the views explicitly criticised by Kant. Kant acknowledges Newton's physics as the very model of exact science without thereby subscribing to his preliminary or additional philosophical assumptions. As forms of receptive intuition, space and time are entirely alien to the idea of a divine consciousness, a view which has radical consequences of its own: even if the original divine being recognises spatial relations and temporal processes, such a being would not know them in spatial or temporal terms as such and would not therefore require the corresponding sciences of geometry, arithmetic or the general theory of motion. This directly challenges the ancient saying which, according to Plutarch (*Quaestiones conviviales* VIII, prob. b), reflected a central conviction of Plato's thought: *ho theos geometrei* – which we might freely render as 'God pursues mathematics'. According to Plato's *Timaeus* (53cff.), the world itself is geometrically structured. And Kepler of course still enthusiastically endorsed the Platonic motto: 'What else remains except to say with Plato, 'God is always a geometer', and in this structure of moving stars he has inscribed solids within spheres and spheres within solids, until no further solid was left which was not robed outside and inside with moving spheres' (*Mysterium cosmographicum*, Chapter II; English translation: 97). Kant essentially transforms the Platonic motto to read *ho anthropos mono geometrei*: 'Only the human being pursues mathematics'.

A number of further typically speculative questions naturally arise in this connection: if the ultimate being cannot engage in mathematics, does this not effectively limit the perfection which essentially seems to belong to the very concept of such a being? Or, if we are to preserve the concept of perfection, are there perhaps forms of original intuition which allow the possibility of mathematics from the perspective of the ultimate being as well? Or are there no forms of intuition underlying the mathematical constructions of the original being? Since we have no objective knowledge concerning the original being, Kant refuses to consider such questions, but simply claims that with we cannot form 'the slightest conception of the possibility' (B 312) of a non-sensuous kind of intuition.

8.3 Walking a Perilous Tightrope

Kant doubtless fails to live up to the task of building a cosmopolitan epistemic republic or constructing a wholly appropriate philosophy for the age of the sciences when he over-hastily commits himself to the current state of the sciences in his own day and declares the axioms of Euclidean geometry to be apodictically certain and exclusively binding with respect to physics. But these particular claims, as we have seen, do not themselves invalidate Kant's doctrine of the pure forms of intuition as a synthetic a priori condition of experience.

Since transcendental space is entirely undetermined in any substantive respects, we could say that the world of geometry is structured as three sequential stages or partial worlds. These stages can be read either as 'rising' towards or, and preferably in our view, as 'descending' from the perspective of a transcendental geometry: (1) transcendental geometry treats that which is external to us and is exteriority as such, namely the transcendental space which underlies all scientific or pre-scientific determinacy; (2) the science of mathematics constructs potentially conceivable kinds of space; (3) physical geometry treats actual space. In this structure each successive stage is related to the preceding one, even though it cannot be derived from it. The mathematical geometries do not, as Kant himself puts it, 'flow from' the transcendental critique of reason itself. And the geometries deployed in physical theories of nature depend on our empirical knowledge as well as on their constructibility in mathematical terms. And a similar limitation must be conceded in the other direction: the specific insights of physical theory cannot furnish arguments either for or against mathematical claims and propositions.

As far as an initial assessment of the relationship between transcendental philosophy and mathematics is concerned, there are four essential points which should be recognised. Taken together, they reduce the scope of the argumentative claims of the first *Critique*, and thus restrict the range of its contribution to the theory of science, and in this sense can be said to contribute to a certain de-transcendentalisation of the Kantian approach (cf. Chapter 24.1 below). But far from dramatically proclaiming the death of transcendental philosophy itself, without submitting its claims to careful analysis, we are thereby simply restricting such philosophy to its own proper calling. Since this restriction still corresponds to the general

programme of the first *Critique* and the specific arguments it presents, Kant's philosophical claim is certainly slightly weakened, but weakened precisely in order to strengthen its basic point:

Firstly, we do not attempt to answer the question whether mathematical geometry involves synthetic a priori knowledge with a simple 'yes or no'. Since transcendental space is indifferent to any specific axioms with respect to space, these axioms and the mathematical geometries that correspond to them can only be described as synthetic in a weak sense of the term. But a theory which is concerned not solely with concepts, but also with the construction of concepts, possesses a more than simply analytic character. And since these constructions are produced independently of empirical elements, of sensations, the synthetic aspect in question is also a priori in character.

Secondly, since transcendental space is indifferent to any one specific geometry, it is open to any form of geometry whatsoever as long as it is internally consistent. Like the political world republic we have discussed elsewhere (cf. Höffe 2002², Chapter 4.4.), the epistemic world republic with which we are here concerned also permits a 'right to difference', or in this context the right to different mathematical geometries. Since Kant's Aesthetic provides for the possibility of different ways of objectivising space, it leaves the task of determining the latter entirely to work of the sciences themselves. The intrinsically modest character of philosophical legislation here corresponds to a virtually unrestricted epistemic freedom on the part of the sciences.

Thirdly, mathematical geometry possesses a specifically cognitive character only in an extremely limited sense. Instead of determining the spatial structure of the reality we can experience, it furnishes a range of mathematically possible geometries from which physics can choose in accordance with experience (through reference to observation, experiment and theory). Mathematical geometry thus concedes to physics an intrinsic right to variety and difference, just as transcendental geometry does with respect to mathematics: as far as the universe is concerned, from the world of atomic particles through the world of everyday reality to the world of astronomy, we do not need to assume a single physical geometry at all. The right to difference thus includes the right to treat space and time as unified rather than as separate, as in the theory of relativity, or even to assume an eleven-dimensional world, with ten dimensions of space and one dimension of time, as in the so-called 'string theory' of contemporary

physics. The question whether the classical Newtonian or the modern relativity-based conception of space and time is substantively appropriate, or indeed whether in a certain sense both are appropriate, is to be decided not by philosophy, but only by the relevant science, and in this case by physics.

Fourthly, all these points imply that Kant's 'Aesthetic', whether we are speaking of the metaphysical or the transcendental part, is not intrinsically bound to the current state of the sciences of mathematics or physics. The advantage of the approach advocated here is also effectively demanded by the positive aspect of Kant's 'Dialectic' and the associated theory of the regulative ideas of reason: indifferent as it is to changes in mathematics as well as in physics, transcendental philosophy remains open, in relation to the individual sciences, to the idea of a permanently ongoing process of research and investigation.

Part III
A Transcendental Grammar

CHAPTER 9

CATEGORIES

9.1 A New Kind of Logic

Kant understands ‘logic’ in the literal sense as the theory of thought, and thus as the theory of the understanding as the faculty which is essentially complementary to sensibility. His ‘transcendental logic’ is not concerned, as logic typically is, with the structures of formal inference, but with a kind of substantive knowledge. In this connection he investigates the pre-empirical contribution of the understanding, namely those ‘pure concepts’ which he follows Aristotle in calling ‘categories’. The philosophers of early modernity demoted Aristotle’s so-called *organon*, his canonic writings on logic and theory of scientific knowledge, to the status of the ‘ancient organon’, treating it as a sterile art of demonstration that was incapable of yielding fresh knowledge¹ and that should therefore be replaced by an art of discovery. Their attempt must nonetheless be regarded as a failure since neither Bacon in his *New Organon*, nor Giordano Bruno previously, nor Descartes, Leibniz, Vico, or Wolff subsequently, actually succeeded in developing a new art of discovery that could properly be compared with the older art of demonstration.

Compared with the ambitious aim that had animated them, the attempts to develop such a new approach, like the proposed ‘combinatoric’, soon proved lacking in any significant innovative potential. Only Kant’s new transcendental logic² can really merit comparison with traditional logic insofar as it is carefully developed in detail as something capable of being taught and learnt. In this context it was Kant’s more modest alternative, rather than the audacious programme for a universal logic of scientific research, that eventually proved successful. Kant undertakes to furnish no *organon* for fresh knowledge, ‘no universal art of discovery [...] with the help of which we could discover otherwise hidden truths’ (*Logic*, IX: 20). Kant’s alternative contents

itself with revealing the criterion for determining the possibility of all knowledge and its respective limits. It is solely within the framework of the categories that Kant develops a kind of *ars inveniendi* in terms of his theory of the regulative principles that guide scientific research (cf. Chapter 20.1 below). The general articulation of his transcendental logic follows the German tradition of Aristotelian thought³ and its distinction between the three higher cognitive faculties: the understanding, the power of judgement, and reason, and their corresponding logical objects: concepts, judgements, and inferences. But since Kant also investigates reason under two specific aspects, his 'logic' as a whole consist of four parts: the two-part 'Analytic', the doctrine of the pure concepts of the understanding and synthetic a priori judgements, and the two-part 'Dialectic', the doctrine of ideas and rational inferences.

In spite of its familiar title, Kant's 'Analytic' undertakes 'a hitherto rarely attempted task'. It is not concerned with the procedure of analysing or 'dissecting the content of concepts' (B 90), something long practised since Plato and Aristotle, nor, we may add, with the analytical method of Descartes which undertook to analyse each problem into as many subordinate parts as possible. Kant's specific task is rather to analyse the faculty of the understanding itself. The content of the latter, the pure concepts of the understanding, thereby acquires a new epistemic status, one that again mediates between rationalism and empiricism. Reflecting the contemporary biological debates with which he was familiar, Kant treats the pure concepts in question as dispositions or potentials, whereas rationalism considered them as an innate and already completed collection of powers and empiricism regarded them as simply acquired. But innate dispositions require experience if they are to develop. In the first *Critique* the relevant concepts are 'presented in their purity, liberated from the empirical conditions that attach to them' (B 91).

The pure concepts which are here identified are the fundamental forms for any possible relation to an object: 'the principles without which no object can be thought' (B 87). Insofar as truth consists in the correspondence of knowledge and its object, these concepts are indispensable for all truth, and it is this which makes the new 'Analytic' into a 'logic of truth' (B 87; cf. Chapter 12.2 below). Precisely because the complementary aspect of sensibility is missing here, the 'Analytic' is solely concerned with the necessary but not sufficient conditions of

knowledge. The 'Dialectic' which follows upon this part of the text shows how the attempt to transcend the realm of possible experience inevitably entangles itself in contradictions. Thus the logic of truth is thus succeeded by the logic of alleged truth, or the 'logic of illusion'. Claims which transcend the horizon of experience escape the alternative of 'true or false'.

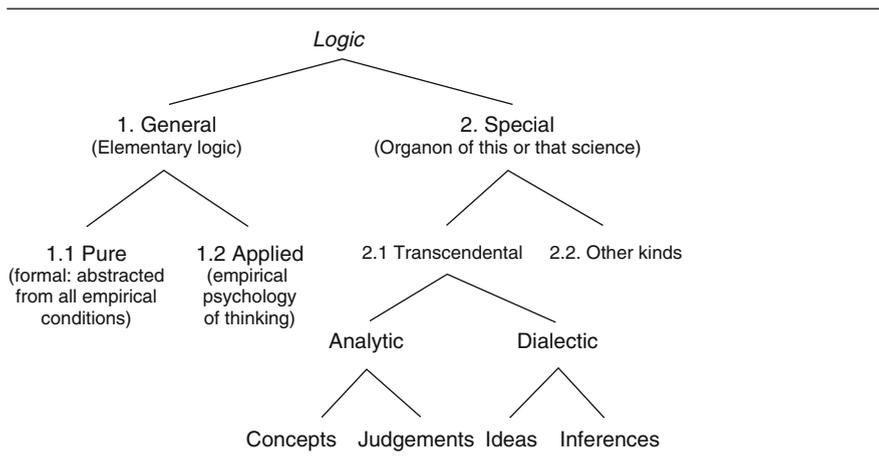
In this connection Kant also identifies the specific character of formal logic, which he calls pure and general logic (B 77–9). And here we indirectly learn why the early modern critique of the 'ancient *organon*' and the quest for a new art of discovery were bound to fail. Since pure logic is concerned with the absolutely necessary rules of thought, it abstracts from 'all empirical conditions' (B 77) and to appeal to psychological principles in this connection would be absurd. A psychology of thought, an 'applied logic' as it was also called, can certainly help to clear the mind of certain prejudices or prepossessions. But it only shows 'how thought proceeds' and its entirely contingent laws can 'never provide a true and demonstrated science' (B 79). The psychology of thought is a merely descriptive science, while (formal) logic is a normative discipline which does not investigate 'how we think, but how we ought to think' (*Logic*, IX: 14). It is nonetheless remarkable how far the 'psychologistic' conception of logic grew in influence during the 19th century, astonishingly enough through the work of Kantians like Jakob Friedrich Fries (1811) and Friedrich Eduard Beneke (1833 and 1845). According to John Stuart Mill even the fundamental logical laws like the principle of contradiction and the axioms of mathematics are propositions that are based upon experience (1843: II 5, especially Sections 4 ff.; III 24, Sections 5 and 7). Kant already clearly recognised what the 'Kantian' Frege pointed out in insisting that the laws of logic in truth are 'not psychological laws of holding something for true, but laws of being true' (1893: xvi).

Since formal logic is solely concerned with logical form, it is senseless to reproach it for its failure to provide material innovation of any kind. And since cases of such innovation are only furnished by specifically oriented scientific research, an allegedly material logic with no connection to such research is not a particularly promising prospect. It is more productive to pursue a logic which explicitly addresses itself to a more comprehensive question that is independent of specific questions of research, but which does not therefore lead us to

expect any particular innovations in specific areas of research. In this sense we can say that Kant's transcendental logic is certainly concerned with content, is a material logic, but one which leaves *concrete* content itself to the relevant special sciences. For transcendental logic lacks two indispensable elements in this respect: on the one hand, the sensuous contribution which must supplement the work of the understanding, and on the other, the conceptual construction that is required for mathematics and the concrete experience that is required for the natural sciences. But Kant's 'Analytic' expressly raises the more fundamental question how thought in general can relate to real objects, and specifically claims in this connection that a comprehensive material logic can only take the form of a transcendental logic – the only kind of material logic that Kant holds to be possible.

Where precisely Kant locates his transcendental logic within the systematic context of other possible logics is not immediately obvious. Close consideration of the question suggests the following: since Kant's transcendental logic investigates something which general logic 'has nothing to do with', namely 'the origin of our cognition of objects insofar as this cannot be ascribed to objects themselves' (B 80), it is expressly directed to the mere understanding (*Logic*, IX: 15) as its specific object, and thus belongs to the domain of special logic. It is thus a two-part special logic belonging to metaphysics. The first part of tran-

Table 9.1



scendental logic, the ‘Analytic’, which deals with categories and principles, can be ascribed to ‘general metaphysics’, while the second part, the ‘Dialectic’, which deals with rational ideas, can be ascribed to ‘special metaphysics’ (Table 9.1):

9.2 Pure Concepts

The domain of intuition mediates, in a material sense, a manifold of unstructured sensations (optic, acoustic, ...) which, in a formal sense, first assume a certain order through space and time. Before they can appear as an objective thing these initially spatio-temporally ordered sensations require a concept – and here this means not a word or a name, but a rule which establishes (1) unity and (2) determinacy. The concept of a desk, for example, connects elements such as a smooth writing surface and a supporting base into the determinate unity of the relevant item of furniture. The synthesis (connection) accomplished here does not arise from the sensations, but is produced by the autonomous activity (spontaneity) of the understanding. The thinking activity here does not subsequently plaster certain labels, as it were, onto an already structured world, but rather confers a well-determined unity upon a previously indeterminate and unconnected ‘something’. Without thought there is as yet no world for us at all. The ‘Analytic’ thus reinforces what we already know from the ‘Aesthetic’: that human thought, in contrast with divine thought, enjoys no direct access to reality. Our thought is discursive: it is mediated by concepts rather than being immediately intuitive in character (B 93).

Since concepts are rules they signify something general, even in the case of empirical concepts. The concept of the desk, for example, signifies the relevant piece of furniture, however it is produced or whatever it is made of. Empirical concepts arise through a threefold process of synthesis: the apprehension of representations in the mind, the reproduction through the imagination, and recognition through the concept (A 97). Kant claims that, in addition to such everyday empirical concepts, there are concepts which, even with respect to their content, arise from the understanding itself. These concepts also confer unity and determinacy, not indeed on a manifold of sensations, but on a manifold of concepts (in a judgement). They are second-level rules of unity and determinacy. Kant seeks to furnish a complete list of

such 'elementary concepts', including the 'true *original concepts* of the pure understanding' (B 107), by reference to what he calls the 'table of categories'.

In the fourth chapter of his own treatise *The Categories* Aristotle enumerates ten basic categories: essence or substance, quantity, quality, relation, time, place, position, condition, action, and passion. (Elsewhere he simply contents himself with lists of six, seven or eight categories respectively; cf. *Metaphysics* V, 7 and XII, 1, and *Nicomachean Ethics* I, 4). Since the 'penetrating Aristotle'⁴ lacked a relevant fundamental principle, Kant reproaches him for listing the categories in a merely 'rhapsodic' and 'haphazard' fashion, and thus also for including modes of sensibility (time, place, position) and derivative concepts (action and passion), and with neglecting other pure concepts (B 106f.). This criticism effectively presupposes that Aristotle was pursuing the same goal as Kant himself: that of furnishing a complete doctrine of pure cognition with respect to the understanding. In fact Aristotle simply took an individual object such as Socrates and enumerated the various meaningful forms of assertion that could be made about the latter and which he derived, in a strikingly modern manner, by abstracting from our actual linguistic practice (cf. Höffe 1999²/2003, Chapter 11.1). Aristotelian categories are simply those elementary meaningful expressions which, either as subject or predicate, are capable of signifying something (*semainein*), but they are not collected or enumerated systematically: Socrates is a human being, is just so tall, is learned, is older than Plato etc. Since Aristotle was principally interested in identifying the most general classes of possible assertions, he cannot really be charged with including modes of sensibility in his list, even if he should not have included 'derivative concepts' as well.

Of course many thinkers had already attempted to identify certain fundamental concepts as *ideae simplices* (Descartes), as 'simple ideas' (Locke), or as the basic alphabet of human thought (Leibniz). But Kant was the first effectively to succeed in this enterprise, which is why one of his very earliest reviewers rightly acknowledged this as 'one of the greatest proofs of his remarkable penetration' (Schulze 1785). Once again Kant attempts to resolve the old dispute between rationalists and empiricists by articulating a fundamentally new position as an alternative to both traditions. Against the empiricists he shows that the relevant concepts are not derived from experience, but rather make it possible in the first place: whenever the manifold of sensory

impressions is brought into an objective unity grounded in the objects themselves (in the judgement, for example, that 'bodies themselves are heavy'), we are always inevitably dealing with a categorial unity. But this claim also essentially limits the range and application of the categories and thus, for two specific reasons, challenges the rationalist position as well. On the one hand, the understanding always requires a corresponding intuition, which implies that there can be no knowledge beyond the limits of possible experience. On the other hand, objectivity only comes about through the contribution of certain subjective achievements, which implies that things in themselves remain unknowable. Like the pure forms of intuition, the categories are not, in the traditional fashion of the highest genera, the culminating peaks of an intellectual hierarchy. For they specifically prescribe a certain order to the (partly mathematical and partly empirical) order of the first level of experience. The categories do not furnish fundamental building blocks *out of* which a thought is composed, as a word is composed out of syllables, but provide the rules *for* the composition of thoughts. They do not furnish the alphabet of thought, but rather the intrinsic core or 'transcendental grammar' of thought (cf. *Met.* L₂, XXVIII: 576).

In a way that is analogous to the argument of the 'Aesthetic', the 'Analytic' pursues its ultimate argument in two principal steps which are preceded in turn by two (barely adumbrated) preliminary steps. The whole argument therefore consists in four steps. First of all, the introductory process of abstraction isolates thought from intuition, and then isolates the pure from the empirical moment of thought (intimated in reverse order at B 74f. and B 89). Once the pure understanding has been clearly identified, the first principal step of the argument, the metaphysical deduction, expounds the full list of categories (the *quid facti* question: what are the elementary concepts of the pure understanding?). The second principal step, the transcendental deduction, then justifies the relevant categories as subjective yet indispensable for the constitution of things as objective appearances (the *quid juris* question). The first or 'metaphysical' part of the deduction is entitled the 'clue for the discovery of the categories', while the second or 'transcendental' part of the deduction is simply entitled 'deduction'. But paragraphs 13, 14, and 26 of the latter, and its second section, are also qualified as 'transcendental' in the title. Thus it is clear that Kant uses the term 'deduction' both as the generic expression for

the metaphysical and the transcendental deductions taken together and as an abbreviated title for the transcendental deduction in particular. And we should also recognise, to complicate matters further, that the transcendental deduction is only substantively concluded in the 'Analytic of Principles'. For since Kant also effectively claims to provide a 'deduction' first with respect to the pure forms of intuition and subsequently with respect to the ideas of reason, we must acknowledge that the first *Critique* as a whole actually contains three deductions.

9.3 The Table of Judgements

The metaphysical deduction, the first principal step of Kant's argument, pursues a complex and winding course which can helpfully be broken down into five subsidiary steps. The first two are concerned with the preliminary question: what precisely is a category? The other three address themselves to the fundamental question: what constitutes the complete list or 'table' of categories? Once Kant has clarified the meaning of a concept of the understanding, and that of an 'original concept' or 'category', he can attempt the demonstration proper, with its three specific aims, the first two of which are effectively intertwined. Kant shows that the pure understanding possesses a content of its own, systematically derives the categories from a common principle, which forms the 'clue to the discovery of all pure concepts of the understanding', and finally employs this clue to furnish the systematic, complete and internally organised presentation of the categories.

Since the task of the understanding is to bring a manifold, unconnected 'in itself', to a well-determined unity, the *first step of the argument* is to identify the corresponding intellectual activity (cf. *Prol.*, Section 39). This activity consists in judging. The latter is not regarded empirically or psychologically as an individual performance of judgement, but is interpreted logically as the fundamental epistemic accomplishment which connects several representations, those of 'body' and 'heavy' for example, to form a determinate unity, in this case: the claim that bodies are heavy. The basic linguistic paradigm of the judgement – the assertion or proposition involved – is a sentence in subject-predicate form (S is P): 'the body is heavy'. The understanding, which up to this point has simply been regarded as the faculty of thinking (B 75), is now presented as the faculty of judging,

and every concept is likewise presented as a predicate of possible judgements (B 94).

If *pure* and, at the same time, elementary concepts of the understanding are supposed to be constitutive for experience, then we must also be able, according to the *second step of the argument*, to identify them in all judgements of experience. In the example of 'The body is heavy' the copula 'is' brings two representations into an objective unity in the sense that they are now 'connected in the object, that is, without regard to the state of the subject'. The situation is different with respect to the subjective unity expressed if I say: 'When I hold a body, then I feel the pressure of weight' (B 142). The two judgements are not distinguished with regard to their respective exactness, as if one possessed a precise specification of weight which the other perhaps lacked. The difference lies rather in the fact that in the second subjective judgement an empirical subject associates the body with the pressure it feels when holding the object. The objective judgement, on the other hand, declares the weight to be a property which it refers to a substance, thereby invoking the category of substance and accident.

One might object here that the subjective judgement could surely be reformulated as an objective proposition of the form 'S is P': 'The person who holds a body is someone who feels the pressure of weight'. Such re-formulation is of course quite possible, but it provides no support to the objection since it fundamentally changes the meaning of the proposition. The new formulation no longer deals with the physics of bodies, but with the psychology of persons holding such bodies, and is only objective in this context. The new subject ('The person who holds a body') is directly connected through the copula with the new predicate ('someone who feels the pressure of weight'), and without any law of association, to form a unity, once again a unity of substance and accident, and thus satisfies Kant's criterion for objectivity. It refers 'without regard to the state of the subject' (B 142) to the actual character of an object.

The *third step of the argument* turns to the principal issue at stake: we identify judging, independent of experience, by abstracting from all content and concentrating on the form of judging itself. The connecting that is independent of, but indispensable for, experience is thus discovered in the pure forms of judgement. These in turn depend upon the corresponding faculty, the pure understanding, and the first aim of the discussion is thereby accomplished: the pure understanding

is not simply empty. At the same time Kant anticipates his second and even third aim: since traditional formal logic already abstracts from all content, it prepares the path for the new transcendental logic and provides the 'clue to the discovery of all pure concepts of the understanding', though only the clue insofar as Kant merely finds himself confronted with the already 'accomplished but not entirely satisfactory work of the logicians' (*Prolegomena*, IV: 323). Kant does not mean by this that the logicians had actually made mistakes, but that they had failed to produce a complete account of the matter. But if the forms of judgement can be enumerated completely in a properly organised manner, then we may be able to expect the same thing of the categories.

The principle which underlies the *fourth step of the argument* has been a subject of considerable dispute amongst interpreters. On one understanding of Kant's procedure, we can derive the table of judgements from those synthetic a priori judgements which constitute the system of the principles of the pure understanding (Cohen 1885²: 408). But the very structure of the first *Critique* itself already militates against this insofar as it only develops the system of principles subsequent to, and indeed on the basis of, the doctrine of the categories.

An alternative reading identifies the faculty of judgement with the original synthetic unity of apperception since Kant explicitly claims that 'this faculty is the understanding itself' (B 133 footnote). But once again the structure of the *Critique* speaks against this attempt to derive the categories from the 'synthetic unity of apperception' as the 'principle of generation' (Reich 1948²: 48, 57f.; Ebbinghaus 1932: 95–7), given the irreversible order of the argument which proceeds from the metaphysical to the transcendental deduction. Transcendental apperception belongs to the required second step of the argument, namely the 'transcendental' demonstration that all objective knowledge depends on categories, a demonstration which already presupposes that the metaphysical discovery of the categories has been successfully accomplished.

According to a third reading (discussed by Krüger 1968: 336f.; Lenk 1968: 19; Patzig 1976²: 50ff.), the transcendental deduction recognises that the claim to completeness that was raised in the metaphysical deduction cannot actually be redeemed. This reading seems especially implausible since Kant appears particularly proud of the allegedly systematic and exhaustive character of the table of categories (*Prolegomena*, Section 39), and although he certainly reworks the transcendental

deduction in the B edition, he does not deny the claim to completeness that characterises the metaphysical deduction. Through reference to the table of categories the *Critique* goes on to develop further fundamental doctrines such as the theory of schematism, the complete system of principles of the understanding, and the articulated account of the paralogisms and the antinomies. It is quite true that Kant says: 'This peculiarity of our understanding, that it can produce a priori unity of apperception solely by means of the categories, and by such and so many, is as little capable of further explanation as to why we have just these and no other functions of judgement, or why space and time are the only forms of our possible intuition' (B 145f.). But this observation does not withdraw the demand to provide a complete account of the categories. The reference to 'further explanation' here merely adverts to the earlier explanations which Kant has already validated, including the previous arguments for providing such a systematic and complete account. But the immediately preceding expression 'just as little' also repudiates the possibility of any further investigation here, especially with regard to the quasi-anthropological question why human beings are constituted in such a way that our developed understanding operates with precisely these twelve categories and our sensibility involves space and time as the two forms of pure intuition. For Kant this character of the human faculty of cognition is a kind of metaphysical fact that he himself refuses to investigate any further.

Since the faculty of judging lies in the understanding, the pure forms of the latter are the forms of judgement. And these are supplied in their entirety by formal logic which ignores all material content (specifically by the theory of judgement rather than the theory of inference). Thus we are led to the fourth and most convincing reading of Kant's argument: that the table of the pure forms of the understanding, the table of judgements, is itself the principle of the metaphysical deduction. This is why Kant, appealing to traditional logic, undertakes to set out all the possible forms of judgement. Thus for every judgement, with respect to its form, we can ask four elementary questions, each of which permits three possible answers. The table of judgements therefore consists of four classes (or legitimate kinds of claim): quantity, quality, relation and modality, with three options or 'moments' in each case, and thus twelve elements as a whole. In the Busolt transcripts of his lectures on logic Kant provides an example

of all four such judgement claims: 'All human beings are mortal. This judgement is affirmative in quality, universal in quantity, categorical in relation, and assertoric in modality' (XXIV: 662).

There are certain judgements which are difficult to accommodate in Kant's table, even though they fulfil the criterion of objectively valid unity: judgements of identity ('The morning star is the evening star'), mathematical equations (' $7 + 5 = 12$ '), and singular judgements of relation ('Munich is larger than Stuttgart'). For each of the first two classes of judgement Kant introduces an extra moment which he tries to justify, remarkably, by appeal to the requirements of transcendental logic, although the latter can play no role in the table of judgements since formal logic alone is responsible for the latter. But for Kant these are the 'moments of thought in general' (B 96) which correspond to the mere form of the understanding, and are therefore not merely admissible, but even decisive for the table of judgements. This reference to the 'mere form of the understanding' does not anticipate transcendental logic from within purely formal logic. Kant here remains within formal logic, though the logic of judgement rather than that of inference, and points out certain defects of 'standard' logic which, fixated as it on the process of inference, overlooks specific distinctions which are important for the logic of 'judgement' (B 95–7). The *Critique* therefore does not simply introduce these new moments for particularly interested reasons or through considerations relating to material content, but because he finds that they are already suggested by the forms of judgement themselves. And this is why he also discusses them specifically in his *Logic* (Sections 21–22).

Thus Kant presents the singular quantitative judgement 'Caius is mortal' as a new moment because it shares with universal judgements a feature which is lacking in particular judgements ('Some human beings are Athenians'): 'In both cases the predicate holds of the subject without exception [...] For there is only a single Caius' (*Logic*, Section 21). The second new moment, the infinite qualitative judgement (for example: 'The soul is non-mortal') represents a specific form of judgement because, although it clearly affirms something, it lacks the characteristic positive determinacy of an affirmative judgement. Its 'positive' content consists in a negation: for Kant the soul belongs to 'the infinite number of things which remain over when I take away all that is mortal' (B 97), although the concept of the subject is not thereby 'extended in the slightest or determined affirmatively'. Thus

while the infinite judgement lacks positive affirmative force, it is not, in contrast with a negative judgement, completely without an affirmative aspect. But the positive content which it still possesses does not consist, as Wolff (1995: 292) assumes, in an existential assertion. For the categories of quality are concerned not with existence or non-existence, but with substantive content. The argument will prove important in the second problem of the ‘deduction’ (cf. Chapter 10.4 below) and in the first part of the ‘Dialectic’, the chapter on the ‘Paralogisms’ (cf. Chapter 17.2 below): ‘immortal’ suggests a positive determinacy which in truth is lacking. Thus a kind of judgement which is not required by the logic of inference once again reveals itself to be indispensable for the logic of judgement (cf. B 98 and 307; for the presuppositions involved in Kant’s table of judgements cf. Tonelli 1966).

We can also elucidate a further point here: the second category of relation is concerned with a logical sequence which does not really correspond to the ‘if-then’ relation, the material conditional \rightarrow , that is familiar in modern logic. For the category in question is concerned with the relationship of ground and consequent. Kant refers here to an ‘ideal’ example: ‘if there is a perfect justice, the obstinately wicked are punished’ (B 98). The conditional in modern logic, on the other hand, possesses a purely truth-functional character. Being indifferent to the relation of ground and consequence, it can affirm the truth of materially unconnected (‘meaningless’) propositions like ‘If Berlin is the capital of Germany, then $2 + 3 = 5$ ’.

Many critics of course have held that Kant failed to present the forms of judgements in a complete or immanently organised fashion. Thus from Reinhold (1789: 448), through Fichte (1794), Salomon Maimon (1794: 23) and Hegel (*Werke*, III: 182 and XX: 344), up to Frege (in the *Begriffsschrift*) and Strawson (1966: 78ff.), Kant’s objection to Aristotle has repeatedly been turned against himself, and the *Critique* has been reproached for its allegedly contradictory, incomplete and inadequately justified character in this regard. And it is true that Kant offers a largely finished table of judgements which he briefly discusses when it specifically diverges from the usual presentations of the time, but otherwise hardly undertakes to ground explicitly as such. Nonetheless the standard criticism of Kant in this respect is overdrawn. Aristotle may not have accomplished something he was never really interested in doing, namely furnishing an inventory of the pure and elementary concepts of the understanding, but Kant did succeed

with respect to at least three of the four aspects he himself specifies (as we may argue against the defence of Aristotle in Oehler 1985²: 129): the elements of the table of categories belong to the understanding and not to intuition; they are not derived from experience and therefore possess a priori character; finally, they are elementary in the sense of being conceptual sources for a variety of further concepts. And the fourth aspect he mentions at least presents a plausible argument: that the organisation of the table of categories clearly and reversibly reflects the enumerated forms of judgement insofar as a category corresponds to each form of judgement and a form of judgement corresponds to each category.

According to Nietzsche the Kantian table of judgements itself depends on 'the coils of grammar (the metaphysics of the people)' in which previous theorists of knowledge, including Kant, have long been 'entangled' (*Joyful Science*, V, 354). But Kant is concerned with formal logic rather than with historically conditioned linguistic structures. Strawson's criticisms (1966: 74–82), on the other hand, are based on a modern logic which does not, for example, regard the disjunctive judgement as an elementary form of judgement since it can be reduced to the connection between contraposition and negation. Nonetheless, the systematic attempts to reconstruct Kant's argument have shown that his table of judgements and the table of categories co-ordinated with it are far more solidly based than one might initially suspect.

A rigorous grounding, in the Kantian sense, would have to demonstrate two things: that the four fundamental questions that Kant broaches in this context are the only relevant ones, and that Kant's three specific responses are possible to each of them.⁵ With regard to the elementary judgement 'S is P' and Kant's own example 'All bodies are divisible', the four questions, and to some extent their subdivisions, and not least the sequence in which he presents them, can certainly be defended (cf. Brandt 1991: 45ff., but particularly Wolff 1995: Chapters 1 and 2, who rejects Frege's criticism; cf. also Heinrichs 1986: Chapter 1 and Longuenesse 1993).

Firstly, the judgement requires a *quantification* which determines the predicate's domain of application. And here we must recognise the twofold division into 'all' and 'some, or at least one', even if the second option, the existential quantifier $\exists x$, can be 'defined' entirely by reference to negation and the universal quantifier $\forall x$, and thus

need not be introduced in its own right. Kant's further option, the 'singular' judgement, is not merely unproblematic in terms of formal logic, but is plausibly grounded: the relevant subject is not of 'the usual' sort, namely a concept in the sense of a general term covering a plurality of instances, but a 'singular' term like Caius (*Logic*, Section 21).

Secondly, the copula ('is') decides the *quality* of the asserted subject-predicate relation. Once again we need, at the least, a twofold division, in this case that of assertion and negation. Here too, as we have seen, Kant's argument for a new third moment is by no means implausible (for Kant's categories of quality it still instructive to consult Maier 1930).

Thirdly, the judgement involves a connection (*relation*), with the formal complication that it is only in the first option that subject and predicate are related, while otherwise several propositions are related to one another: the hypothetical judgements involve two propositions, and the disjunctive judgements 'two or more' propositions (B 99). In all three options the relation of the copula is also expressed, without granting any specific determinacy to the relation, and this rather supports Kant's own subdivision.

Finally, the first three claims only concern the asserted state of affairs so that the 'value of the copula in relation to thought in general' (B 100), or the claim of *modality*, which the judgement raises with respect to a state of affairs is still lacking: 'It is possible/actual/necessary that S is P'.

We must therefore draw the following provisional conclusion: even if there are many details which can still be criticised, Kant's table of judgements is far more convincing than much of the subsequent and apparently sophisticated criticism suggests. Kant can thus rightly be regarded as a noteworthy meta-logician insofar as he explicitly attempted to systematise the body of formal logic that prevailed at the time.

9.4 The Table of Categories

The fifth and final step of the argument co-ordinates each form of judgement with the corresponding category, in which S stands for the subject and P stands for the predicate in a subject-predicate

proposition. According to the table of categories there are three times four basic concepts of the pure understanding, twelve concepts that are both determinately related to and clearly distinguished from one another. Most of them can already be found in the traditional ontology, in the works of Wolff and Baumgarten for example. The originality of Kant's approach lies not in the table itself, but in the 'derivation' of the categories and the sevenfold elucidation of their function which he provides: (1) Kant clarifies the very notion of a fundamental concept – such a concept belongs to the grammar rather than the alphabet of thought. The table of categories thus acquires the character of a transcendental grammar; (2) this clarification allows him to reduce the considerable variety of fundamental concepts already acknowledged at the time to a basic core; (3) he provides a convincing articulation of this basic core of concepts; (4) he co-ordinates the core of fundamental concepts with a range of equally pure but nonetheless derived concepts, thus co-ordinating the fundamental concept of causality, for example, with the concepts of force, activity and passivity; (5) he abstracts from everything that belongs either to intuition, and thus to the 'Aesthetic', or to the realm of ideas, and thus to the 'Dialectic'. The triplicity of each class of categories is grounded in his general argument that the synthetic divisions of a priori concepts are necessarily trichotomous since synthetic unity always involves a condition, a conditioned and a concept that unites both (cf. CJ, V: 197, footnote); (6) this trichotomous organisation also prepares the way for the subsequent idealist dialectic insofar as 'the third category always arises from the connection of the second with the first one of its class' (B 110). Thus 'allness (totality) is nothing but plurality regarded as a unity, limitation nothing but reality connected with negation' (B 111); (7) last, but not least, he holds that the first two classes of categories are directed to objects of (pure or empirical) intuition, whereas the last two groups of categories are directed to the existence of these objects. In the former case he speaks of mathematical categories, in the latter case of dynamical categories (B 110f.).

In most cases the co-ordination of the category with the relevant form of judgement already strikes us as immediately convincing, but in some cases, such as the relation of cause-effect we must look more carefully to grasp the connection (Table 9.2).

Grammatically speaking, the statement that 'the sun warms the stone' is certainly an assertoric proposition. But with regard to the

Table 9.2

<i>Table of Judgements</i>	<i>Table of Categories</i>
1. Quantity	
Universal (all S are P)	Unity
Particular (some S are P)	Plurality
Singular (an individual is P)	Allness (Totality)
2. Quality	
Affirmative (S is P)	Reality
Negative (S is not P)	Negation
Infinite (S is not-P)	Limitation
3. Relation	
Categorical (S is P)	Inherence and Subsistence (substance and accident)
Hypothetical (If S is P, then Q is R)	Causality and Dependence (cause and effect)
Disjunctive (S is either P or Q or R)	Community (reciprocity between agent and patient)
4. Modality	
Problematic (It is possible that S is P)	Possibility–Impossibility
Assertoric (It is actual that S is P)	Existence–Non-existence
Apodictic (It is necessary that S is P)	Necessity–Contingency

content it affirms an irreversible sequence and an additional causal implication: the stone becomes warm not only *after* exposure to the sunshine, but also *because* of the latter. This implies that the subsequent event, under given conditions, only transpires ‘under the presupposition’ of the preceding event, thus only transpires hypothetically.

With respect to the first and third category of quantity, we would prefer to reverse Kant’s arrangement today and co-ordinate universal judgements with the category of totality, and singular judgements with the category of unity (Brandt 1991: 75ff.; Longuenesse 1993: 280). This reversal would start from the extension of concepts and correctly emphasise that the totality (the ‘allness’) of exemplars of ‘the human being’ fulfils the condition of the predicate ‘mortal’. But since he is interested in substantive knowledge, Kant relates the categories

to the content of concepts which stands 'in inverse relation' to their extension. 'For the more a concept contains *under* itself (= its extension), the less it contains *within* itself, and vice versa' (*Logic*, Section 7). Thus in the example from Kant's lectures on logic, the proposition that 'All human beings are mortal', we are not to ascribe mortality to some human beings and non-mortality to others, but to recognise that all human beings form a unity with respect to the mortality, a unity (cf. B 114) to which mortality specifically belongs. In the judgement 'Caius is mortal', on the other hand, the subject is mortal as a whole, consequently in the totality ('allness') of the elements contained in 'Caius', and not merely in respect of some of them.

With regard to the category of reality we should note it belongs in the class of quality rather in that of modality. For in relation to Kant's subsequent critique of the ontological proof for the existence of God (B 620ff.), we must recognise that this category does not refer to 'actual existence' since only *objective* reality implies 'existence' (B 597). We are literally concerned, with respect to an affirmative judgement, with the *realitas*, the substantive content of something, with 'that which corresponds to a sensation in general' (B 182).

Notes

1. In this connection commentators generally refer to the *Prior Analytics* and the *Posterior Analytics*, but tend to overlook the innovative potential of Aristotle's discussion of the art of argument in the *Topics*.
2. The question whether transcendental logic is properly a logic at all can best be answered by reference to the literal meaning of the word 'logic' and to the three dimensions of logic distinguished by Frege (1918/19): its purpose, its validity and its ontological status. Kant's transcendental logic meets all three criteria. With respect to purpose, it is also concerned with truth; with respect to validity, it involves rules or laws (the 'principles'); and with respect to ontological status, the laws in question concern synthetic judgements as the logical entities to which these laws or rules apply.
3. Cf. Meier's *Auszug aus der Vernunftlehre* of 1752 (since the time of Thomasius and Wolff it was customary to refer to 'Logic' as *Vernunftlehre* or the 'doctrine of reason'). Cf. also Kant's (brief) history of logic (*Logic*, IX: 20ff.) and his various lectures on logic (*Logik Politz*, XXIV: 509; *Logik Busolt*, XXIV: 613) where he specifically praises Wolff, although he neglects Peter Ramus (but cf. B 172, footnote) and the 'Port Royal' logic of Arnauld. The *Organon* (1764) and *Architektonik* (1771) of Johann Heinrich Lambert already contain all of the types of judgement distinguished by Kant (cf. Schulthess 1981: 277–9), though without any comparable attempt at systematic derivation or justification.

4. For further evidence of Kant's high regard for Aristotle in this respect cf. *On an Elevated Tone that has recently Arisen*, VIII: 393.
5. Kant's argument for the necessity of trichotomous divisions (cf. Chapter 9.4 immediately below), for the distinction between the condition, the conditioned and the connection involved, rather puts in question M. Wolff's attempt (1995: 13ff.) to interpret the three possibilities within each class of categories as non-exclusive in character.

THE PROBLEM OF JUSTIFICATION

According to his own testimony, the transcendental deduction cost Kant ‘the greatest labour – labour, as I hope, not unrewarded’ (B xvi). After at least three preliminary attempts, he was still not entirely satisfied with the fourth version which he published in the first edition of the *Critique* in 1781, and he undertook a fifth version for the second edition of 1787. This effort at re-formulation alone reveals how long and hard he struggled with a question that had been central since Descartes. Even the final version of the B edition hardly succeeds in presenting the kind of lucid overview which would permit the reader to follow the argument step by step, to grasp its various ramifications, or to consider and respond to plausible looking objections. The winding intricacies of the text, the disorienting references back and forth which mark the course of the argument, raise considerable difficulties for any attempt to present a clear and coherent interpretation of this section of the work. Thus Schopenhauer (*Werke*, II: 529), Heidegger (1929a: Chapter 6) and most recently Kitcher (1990: 61–90) have all preferred the version of the deduction provided in the A edition.

I shall not attempt here to compare the details of the two versions (cf. Pippin 1982: Chapter 6), but concentrate instead upon the B text since Kant himself clearly considered the significant changes made in the second edition to be necessary. Compared with the original version of the A text, Kant introduces three innovations. He no longer argues the case in terms of the threefold synthesis of intuition, imagination (‘recollection’) and concepts. For he now bases the argument on transcendental self-consciousness and its two functions with respect to identity and objective unity. And he also treats space and time not merely as forms of intuition, but also as formal intuitions, something which is of considerable importance for his theory of mathematics (cf. Chapter 7 above).

10.1 The Aim of the Argument

The 13 numbered sections of the B deduction proper (Sections 15–27) can initially be structured in terms of a double plot. The more perspicuous heading which Kant provides for this part of the text (B 116) suggests a division into two parts: an introductory section (Sections 13f.) and the main body of the argument (Sections 15ff.). Within the principal argument, the less obvious division (B 144f. and B 159) marks off Sections 20–21 from Section 26, although this still leaves open the question whether the argumentation itself falls into two parts (Sections 15–21 and 22–27). It also remains an open question whether Kant is attempting to develop two arguments for a single thesis or to offer a *single* proof in two steps. Before trying to decide between these alternatives, we should probably speak of two *parts* of a proof which nevertheless, on careful inspection, reveal themselves as a number of individual proof *steps*. If we take the introduction and the concluding Section 27 together with the main argument, we can articulate the whole text in four parts:

The introduction (Sections 13–14) specifies the aim of the argument, one which corresponds to Kant's general epistemic revolution in seeking the origin of the categories in the subject rather in the objects of experience. The second step, part one of the ensuing proof (Sections 15–21), has a threefold character. In three subsidiary steps Kant begins by explicating transcendental self-consciousness as the origin of all objective unification in experience (Sections 15–17): the activity of connection that is required for all knowledge can only be 'performed by the subject itself' (Section 15), and this corresponds to transcendental self-consciousness (Section 16) which in turn forms the 'highest principle of all employment of the understanding' (Section 17). The next two sections qualify transcendental self-consciousness as objective unity (Section 18) and present the categories, without explicitly mentioning the term, as the necessary conditions of such unity (Section 19). After an initial summary of the argument (Section 20), Kant goes on to show how all sensuous intuition can only be made into objective cognition through the transcendental self-consciousness and the categories (Section 21).

One might easily think that the aim of the argument has already been reached at this point. But in fact all that has been shown is that

the pure concepts of the understanding are necessary for experience. It has not yet been demonstrated that these concepts apply to experience as a whole and to nothing but the field of experience. The third step, part two of the proof (Sections 22–26), explicitly takes up this remaining task and therefore represents an independent proof step in its own right. With respect to four problem cases Kant both restricts the application of the categories to the objects of possible experience (B 166; cf. the heading of Section 22) and explains how the categories are valid, within possible experience, for all objects, and particularly for mathematics. The first problem concerns mathematics which is not already of itself a case of knowledge, but ‘merely serves the possibility of empirical cognition’ (Section 22). The second problem concerns the possibility of non-sensuous intuition and is thus simply eliminated (Section 23). The third problem, concerning transcendental self-consciousness, reveals that the latter does not represent any kind of self-knowledge (Sections 24–25). The fourth problem, concerning the connecting process of perception in which experience consists, can only be fully clarified through careful interpretation (Section 26).

Finally the fourth step (Section 27) summarises the ‘result’ of the preceding argument.

It is striking that at no stage does the ‘deduction refer to any individual categories, or even to any specific classes of category, but only to categories in general, to what we might call mere categoriality itself. One might therefore think that Kant is now qualifying his earlier claim to completeness with regard to the table of categories. But since the ‘system of all principles’ requires individual categories it is clear that the task which is described as the transcendental deduction extends beyond the part of the text that explicitly bears that title. The proffered ‘solution’ of the (Copernican) ‘enigma’ that nature must conform to laws which nonetheless cannot be ‘derived’ from nature itself (B 163) here merely appeals to an indeterminate categoriality and is only properly completed in the ‘system of all principles’. It is there that Kant shows that the synthesis accomplished by transcendental self-consciousness with respect to the manifold of intuition consists in extensive magnitude (cf. Chapter 13.2 below), with respect to perception consists in intensive magnitude (cf. Chapter 13.3 below), and with respect to experience consists in the necessary connection of perceptions (cf. Chapter 14 below).

The point which Kant was essentially attempting to demonstrate had been clear to him for some considerable time and was already expressed at least a decade before the composition of the first *Critique* (*Letters*: No. 70/42). Insofar as it corresponds to the epistemic revolution of which we have spoken, the argument can be articulated in three parts which attempt to answer three questions: firstly, how is that concepts which arise solely from the subject itself can still properly apply to the objective world?; further, how is that elements which belong to the non-sensible faculty of the understanding can nonetheless be valid for objects of the sensuous world?; and finally, how can elements independent of experience nevertheless constitute experience itself? Taken together, these questions essentially amount to the single question: how can the pure concepts of the understanding relate to the objective world in the first place? Given the suspicion that the attempt to authorise and justify such an argument may appear overambitious, there are three further questions that demand to be addressed in this connection.

The first arises from the appeal to legal right which lies in the very title of the 'deduction'. Does it imply that Kant is weakening the claims of his argument in some way? A court that must decide upon disputed claims to rightful possession cannot accept an imprecise legal demonstration in such a matter, and this is why Bacon already demands the 'lawful evidence' of incontestable proofs with respect to science in his *Novum Organum* (I, 98). Thus Kant is not here attempting to limit the *formal* claim of his argument, but merely to specify the precise *content* of the latter. Whereas the metaphysical deduction first reveals our actual possession of something, the transcendental deduction must also demonstrate our right to claim this possession. And this requires more than any empirical deduction can ever provide – one which merely indicates, as with Locke, the 'occasioning causes' of the categories we deploy, but fails to demonstrate our 'right' to apply them (B 117).

The second question concerns the range of the argument: is Kant merely attempting to prove that our objective relations to the world also include certain categorially determined ones, or, more strongly, that all our relations to the world require the categories, that no objective relation to the world is possible without them and that no legitimate application of the categories is possible without an objective relation to the world? The heading provided for the synoptic

Section 20: 'All sensible intuitions stand under the categories', clearly seems to imply the second and stronger interpretation of Kant's claim.

Systematic considerations, as well as those relating specifically to Kant, also suggest a third question: does cognition initially arise independently of the subject or does perception itself already conform to concepts, perhaps even pure concepts, and thus to certain subjective requirements? By appeal to the exemplary argument that we perceive far more colour shades than we actually possess colour concepts, Gareth Evans (1982: 226f.) claims that perception provides us with substantive pre-conceptual information, even if this can be further elaborated through our concepts. John McDowell (1994: Lecture IV) contests this view with the argument that by means of the indexical expression 'that shade' we can always designate whatever shade we wish over and beyond the colour expressions that we already have. We can thus always find new expressions for the relevant shades. McDowell's point can certainly be challenged by reference to the fact that while such subsequent expressions do transform non-conceptual contents into conceptual ones, the relevant perceptions already exist in their own right so that, with Evans, we must speak of a non-conceptual perceptual content in the first place. And the actual number of colour concepts is contingent in itself. It is also at least clear since the chapter on 'sense certainty' in Hegel's *Phenomenology of Spirit* that a term like 'this shade of colour' can only express something that is entirely indeterminate. And in turn we can also object to Evans that the perceptual content may, in addition to the non-conceptual aspect, also involve a conceptual dimension. Even if we do not perceive optical sensations as a precisely determined colour shade, we can still perceive them 'as coloured', even as a specific 'shade of red' or as a 'bluish red' or as 'something reddish', and this certainly involves a concept, even if it is only a 'crude and confused' one (cf. B 103).

Assuming that we do not merely sensuously intuit a certain shape in purely spatial terms, but also perceive it 'as something', then we also require, according to Kant, some active contribution on the part of the understanding. But in contrast to McDowell (1994: 9ff. and 29), this does not yet suffice, on its own, to support the claim that conceptuality is already active within the domain of sensibility. For the latter as such is merely passive. As soon as concepts are present, thought is already at work, which is why any supposedly passive employment of thought

contradicts its very essence as activity. And anyway we should recognise that the *Critique* is not interested in empirical concepts like shades of colour, but only in the pure concepts which it claims are themselves indispensable for perception (B 161).

This claim, it is true, rather conflicts with the argument of the *Prolegomena* (Sections 18–20) which regards the judgements of perception as subjective and contrasts them in this respect with the exclusive objectivity of the judgements of experience. In Kant's own example that 'if the sun shines on the stone, it becomes warm', the empirical subject certainly connects two events, the shining of the sun and the warming of the stone, but it does not assert the inner relationship between them both. This relationship only consists subsequently in the connecting and associating activity of the subject. For an objective experience or for a judgement of experience (here Kant makes no distinction between the two), the subject must withdraw into the background and allow the relationship in question to speak for itself: 'The sun warms the stone'. The subject cannot of course withdraw into the background completely. For the inner relationship is only established by means of both the accompanying 'I think' and a specific category, in this case that of cause, that is implicit in the verbal expression 'warms': the sun is the cause of the warming.

Are the judgements of perception, in contradiction with the passage we have cited (B 161), therefore subjective? Before reproaching Kant with downright contradiction we should consider his examples with care: 'the empirical intuition of a house', which becomes 'a perception . . . through apprehension of the manifold', and the perception of 'the freezing of water'. In the first case we encounter the underlying category of magnitude, 'the synthesis of the homogeneous in an intuition in general', and in the second case the category of cause insofar as I perceive 'two states (those of fluidity and solidity)' (B 162) in a non-reversible temporal sequence. Not all perceptions therefore stand under the categories, although some clearly do.

The argument of the *Prolegomena* (Section 19, footnote) suggests this line of thought when it distinguishes judgements of perception which could not 'ever become judgements of experience' from those which become 'judgements of experience by superadded concepts of the understanding', and thus become objective. At first sight Kant's examples of judgements of perception incapable of objectivity, i.e. 'the room is warm, sugar sweet, and wormwood nasty', do not seem any

different from those which are because the predicate 'warm' is here ascribed to the subject 'room' as accident to substance. But one would be mistaken to think so, according to Kant's implicit claim, since the predicates 'warm', 'sweet' or 'nasty' do not properly lend themselves to a direct connection with the relevant logical subjects 'room', 'sugar' or 'wormwood'. For it is to such predicates of taste or feeling that Kant here denies the capacity for objectivity (cf. his reference to the 'taste of a wine' in the footnote at A 28).¹

Contrary to first impressions, therefore, the judgements of perception that are incapable of objectivity are abbreviated expressions for what is 'merely a reference of our perception to a subject' (*Prolog.* Section 18). Even if everyone agrees that a room is warm, they are not thereby making a judgement about the room, but only about the feeling of warmth which the room produces in them. An objective judgement does not speak, with 'greater precision' as it were, of some quality as 'lukewarm' or 'extremely warm'. On the contrary, it introduces an intensive magnitude, an objective predicate that is no longer subjective: 'The temperature of the room is 19°C'. Even the judgement of perception 'If the sun shines upon the stone, the stone becomes warm' employs a predicate that is capable of objectivity since we can ascribe the process of warming to the sun rather than ascribing something merely to a percipient subject. On the other hand, the judgement of perception 'When I touch the stone I have a sensation of warmth' is subjective, whereas the relevant objective judgement of experience would take the form 'The stone is warm' (*Logic*, Section 40). In this connection we can thus distinguish three levels, the first of which can also be further divided:

Level 1 A: perception that is incapable of objectivity

The room is warm, the sugar is sweet, the wormwood is nasty

Level 1 B: perception that is capable of objectivity

I hold a stone; I feel the pressure of weight – The sun is shining; the stone becomes warm – In perceiving a tower I thereby perceive a red colour; on touching the stone, I have a sensation of warmth.

Level 1 C: objective perception

The temperature of the room is 19°C

Level 2: subjective connection according to laws of association

If I hold a body, I feel the pressure of weight – If the sun shines upon the stone, the stone becomes warm.

Level 3: objective connection by means of a category

The body is heavy; the tower is red; the stone is warm (category of substance and accident) – The sun warms the stone; the water freezes (category of causality).

10.2 Transcendental Self-Consciousness

1. *The 'I think'*: The first third of part proof I undertakes to identify the origin of all combination of the manifold once again by exclusion: if we remove everything that is incapable of effecting combination (matter and the pure forms of intuition), the domain of receptive sensibility falls away and leaves us with the faculty of understanding. Self-activity, the accomplishment of the understanding, 'cannot be given through objects, but can only be accomplished by the subject itself' (B 130). If we further disregard the question of categorial determinacy and concentrate entirely upon self-activity as such, it may 'easily be observed' that the latter is 'originally' – with respect to its cognitively constitutive origin – 'one and equipollent for all combination' (B 130) and consists in 'the ground of the unity of diverse concepts in judgements' (B 131). Even analysis presupposes an activity of combination since 'where the understanding has not previously combined, it cannot dissolve', as Kant indicates with reference to a manifold of sensory impressions combined in a concept and a manifold of concepts combined in a judgement. Synthesis enjoys epistemological priority and all analysis is secondary. If we ask whether Kant is referring only to conscious rather than unconscious combination, or in the case of the former only to the combination of concepts in judgements rather than that of the manifold of intuition in concepts, the answer is unambiguous: the issue concerns 'all combination' (B 130).

Thus Kant has established two points that are essential to part proof I. The original unity is shown to be synthetic and to occupy a logically higher level than all categorial unity, including the category of unity, and thus to be a priori since the category of unity itself already possesses a pre-empirical character.

With regard to the further question concerning the ultimate ground of unity, the answer is provided in Section 16: since all combination 'can only be accomplished by the subject itself' (Section 15),

this accomplishment, conceptualised for itself, is the 'I think' that 'must be *able* to accompany all my representations' (B 131). We must consider every element involved here:

Representations, considered as the 'unity of something', are not immediately given. Since they are an achievement of thought, Kant speaks of the '*I think*' rather than of the '*I intuit*'. And since the unity is accomplished not by some alien agency, but by the owner and bearer of the representations in question, we must specifically say '*I think*'. But the principal representation does not itself consist in the 'I think'. On the contrary, a judgement *p*, such as 'the body is heavy', is merely 'accompanied' by the spontaneous act in which '*I conjoin* one representation [body] with another [heavy], and am conscious of the synthesis of them' (B 133). Every judgement *p* presupposes an 'I think that *p*', where thinking is not a performative act of 'asserting' ('I assert that *p*'). It signifies rather that the combination established in the objective judgement *p* is traced back to the subject rather than to the object. In accordance with Kant's reference to the 'I think' which is *able* to accompany all my representations, the accompanying 'I think' remains in the background: in the judgement *p* the judging subject is not actually conscious of its own 'accompanying' achievement, but it can always in principle become so. 'All' my representations, whether they be sensuous intuitions or non-sensuous concepts, can be accompanied precisely as 'my' representations. For whatever someone else represents is equally accompanied by the appurtenant 'I think'.

The 'I think' is often interpreted as a matter of ascribing mental states to oneself from the standpoint of the first person singular (for example Carl 1998: 192). It is then objected that we can have a feeling of pain that is devoid of any reference to the ego, or if there is such reference, that is still devoid of all self-cognition. Both of these points actually go beyond Kant's attempt to frame a theory which can account for the objective knowledge of the external world. This theory does not consider subjective inner representations such as our sensations of pain. But we are concerned with representations which the 'I think' must be able to accompany, but precisely only 'able' to do so. Kant does not make the empirical (in principle falsifiable) claim that all representations are actually self-owned and united in an empirical consciousness. But he does defend the pre-empirical thesis that all representations require an accompanying unity-bestowing consciousness

if they are to be capable of objectivity. He is not concerned with the process of mental self-ascription, but merely with the Copernican Turn itself:

Objective cognition is only possible by virtue of an a priori *subjectivity*. The genuine origin of this subjectivity does not lie in the pure forms of intuition or in the concepts of the understanding, but in the process through which the understanding combines the manifold into unity, a process for which the thinking subject enjoys a doubly privileged authority. On the one hand, representations are necessarily one's own because cognition involves the act of combination which the thinking subject itself must accomplish. Thus 'I think' essentially means 'I combine'. On the other hand, all 'my' representations are 'one' (B 135). Now since the (objective) unity of all representations is nature, with the 'I think' we are simultaneously concerned with both the subjective unity of cognition and the objective unity of the object.

As a self-consciousness that is devoid of material content, Kant describes this original unity as 'pure' and 'original apperception' (B 132); as the condition of the possibility of empirical self-consciousness he also calls it 'transcendental apperception' (a 107) in the first edition, and in the second edition the 'transcendental unity of self-consciousness' (B 132), or more simply transcendental self-consciousness.² The 'empirical subject which accompanies different representations', judging now this object and now that, 'is in itself diverse'. This subject lacks unity in its constant change. It only acquires the 'identity of the subject' through a pre-empirical contribution that does not change, through that combining of representations in one consciousness whereby 'I represent to myself the identity of the consciousness throughout these representations' (B 133). This representation is a synthetic unity of self-consciousness insofar as it accomplishes such combination, it is an original unity of self-consciousness insofar as it essentially, but not temporally, precedes all combination, and it is a non-empirical unity of self-consciousness insofar as it is presupposed in all empirical cognition, including that of empirical self-consciousness (from amongst the copious literature on this issue cf., for example, Sturma 1985, Kitcher 1999 and Deppermann 2001; for a criticism of Kant that is not entirely convincing cf. Guyer 1987 and Frank 1991).

With the final and third section of part proof I, Kant explicitly ascribes a singular and superlative status to transcendental self-consciousness. The first edition speaks of it as 'the radical faculty of all our knowledge' (A 114), where Kant understands 'radical' literally in the sense of 'from the root'. In the second edition he describes it as 'the highest point, to which we must ascribe all employment of the understanding, even the whole of logic, and conformably therewith, transcendental philosophy' (B 134, footnote).

Now according to Kant's central theorem of the two stems of human knowledge, the contributions of sensibility cannot be reduced in any way to those of the understanding, so transcendental self-consciousness can hardly be described in absolutely superlative terms as the highest point as such. As the passage in question indicates, it is merely the highest point for the employment of the understanding. For the 'Aesthetic' enjoys its own superlative status as the supreme principle of the possibility of all intuition in its relation to sensibility: 'that all the manifold of intuition' stands 'under the formal conditions of space and time' (B 136). But the supreme principle of the understanding does relativise this first principle. Since everything manifold, including the manifold of intuition, stands 'under the formal conditions of the original-synthetic unity of apperception' (*ibid.*), this unity is valid not merely for the 'Logic', but for transcendental philosophy as a whole. The understanding thereby receives its third and most elevated definition and determination. It must be recognised not only as the faculty complementary to sensibility, but also as the prior faculty of judging and for this reason, albeit always in relation to intuition, as the faculty of all cognition (B 137).

Although the expressions 'original unity' or 'transcendental unity' sound extremely technical, they have nothing to do with an esoteric philosophy that is remote from the world. They simply indicate that everything manifold must first be combined before it can become an object of cognition. And this requires an elementary unifying contribution on the part of thought. At the first level, the manifold of sensuous impressions is brought into the unity of a concept, that of a body or of weight for example. At the second level, concepts are combined by means of the categories into the unity of an objective judgement: 'The body is heavy'. And at the elementary third level, the knowledge of the object, with its potential reference to the self, comes to the unity of transcendental self-consciousness. The partial phrase 'I think', with

which Kant translates the *cogito* of Descartes, is the potentially accompanying representation which underlies all other representations, with all their changing content, as their self-identical condition.

One may ask why Kant did not undertake to provide a metaphysical deduction for the 'I think' as well as for the categories. He might have made use of the same 'clue', that of the understanding as the faculty of judging, though he would also have had to distinguish two levels, namely the forms of judgement enumerated in the table of judgements and the act of judging in the sense of combining the manifold. Analogously to the pure concepts, he would have to introduce a pure process of judging, something which would also have brought out its character as an activity even more clearly. And this in turn would have reduced the burden placed upon the transcendental deduction. Since Section 15 actually comes rather close to this task, it could have been located within the metaphysical deduction and elaborated accordingly in that context. The transcendental deduction could then have concentrated instead upon the indispensability of the original activity of combination.

As Kant actually develops the two principal parts of the argument, he effectively produces a certain thematic displacement. In the metaphysical deduction he only speaks about the categories, rather than about the process of original combination. The latter, on the other hand, occupies the foreground of the transcendental deduction, whereas the categories hardly make any appearance there at all. The thematic displacement consists in the fact that, with respect to the two sides of the activity of the understanding, the metaphysical deduction exclusively presents the aspect of determinacy, or the categories, while the transcendental deduction concentrates upon the establishment of unity.

2. *The connection with the categories.* The first step in part proof I certainly brings us to transcendental self-consciousness, but it also obscures the essential connection with the categories. The second step (Sections 18–19) begins by contrasting objective unity with the subjective, empirical and contingent unity of consciousness which determines inner sense in accordance with the laws of association (Section 18). For 'empirical representations which frequently follow one another produce a habit in the mind when those are generated which also cause others to arise' (*Anthropology*, Section 31 B). Accomplished as it is by the reproductive imagination, an associatively determined

unity is only valid relative to the judging subject, whereas in the case of objective unity the judging subject is present only in the background as the accompanying 'I think' (Section 19). If it does emerge into the foreground, it destroys the objectivity since the unity no longer lies in the 'concept of the object' and 'only subjective validity' remains (B 139f.).

Thus the twofold argument presented in Section 19 no longer determines the judgement as the 'representation of a logical relation of certain concepts' as it was presented in traditional (formal) logic (for example, Meier 1752, Section 292), but defines it epistemologically and transcendently as the 'way in which given cognitions are brought to the *objective* unity of apperception' (B 141). Here the copula is directed to the unity that lies in the object itself: 'it, the body, *is* heavy' (B 142). According to the metaphysical deduction, to which Kant himself appeals, objectivity is due to a connection of the categories. That is why, as the second partial argument claims, objective unity requires 'the principles of objective determination', i.e. the categories, which shows that, in addition to transcendental self-consciousness, they are also the condition of all objectivity.

3. *Provisional result.* In spite of certain other specific questions which still remain unresolved, one purpose of the transcendental deduction is achieved and the third step in part proof I (Sections 20–21) draws the relevant conclusion: 'Thus the manifold in a given intuition also necessarily stands under the categories'. The categories, which according to the metaphysical deduction are certainly pure concepts, but could still simply be matters of *mere* thought, are now revealed as matters of *cognition*, and the subjectivity of pure thought is revealed as a necessary component of objectivity.

10.3 Excursus: Kant and Descartes

Descartes has been regarded, since Hegel, as the 'hero' who 'first constitutes the ground of philosophy anew' as 'the true inaugurator of modern philosophy by making thought into its basic principle' (*Werke*, XX: 123). It is quite true that since Descartes philosophy has been profoundly influenced by the idea of the subject as the ultimate principle of all knowledge. But this idea has certainly not always enjoyed such approval. In French philosophy during the 18th century, for example,

Descartes was principally 'recognised only as a mathematician and a defender of reason in general' (Rodis-Lewis 1966: 335). In the first *Critique*, however, Kant certainly takes Descartes seriously as a metaphysician and takes up the idea of the active role of the subject in producing knowledge. Hegel followed Kant in this respect and thus revealed himself once again as a kind of Kantian. But Kant first liberated the idea from the rationalist metaphysical framework of Descartes and provided it with a new transcendental grounding. This transformed the original idea and gave it a more radical and convincing methodological significance in the process. Ever since Ryle (1949) the analytical tradition in the philosophy of mind, with its emphatically anti-Cartesian approach, has thought of itself as marking a new theoretical departure. But in fact the radical criticism of Descartes already begins with Kant, even if his own arguments have long been neglected or ignored.

It is quite true that the 'deduction' only engages indirectly with Descartes, and that Kant's explicit criticisms are only presented later in 'The Refutation of Idealism' (B 274f.), and especially in the chapter on the 'Paralogisms', which in both of its versions refers specifically to 'Cartesius' (A355, A367 and B 422, footnote). But important arguments against the Cartesian approach are already raised in the 'deduction', which can be read as an implicit commentary on Descartes and clearly distances itself from his position in five respects (for other differences, as well as certain similarities, cf. Chapter 17.3.2 below):

1. Whereas the Cartesian *cogito* is supposed to provide us with material knowledge, Kant's transcendental subject is 'a representation completely devoid of content' (cf. B 404). It is not interpreted in temporal terms. As the condition of inner sense, it is not subject to time as the form of intuition that governs inner sense, and thus has nothing to do with memory (in this connection contrast Mohr 1991: 146ff.). The transcendental unity of consciousness is not the empirical unity of consciousness, which, considered as the sum of the actual contents of my consciousness, is potentially accessible to a good memory. But it is this transcendental unity which makes the unity of empirical consciousness possible. The fact that I may forget or falsely remember something belongs to the empirical, not to the transcendental unity of consciousness. Nor does the latter constitute the identity of a person, as Evans assumes (1982: 213f.). Any attempt to ascribe material content to transcendental apperception mistakes its true significance as the bare accompanying representation of the 'I think'. It does not

contain any content of thought, but consists simply in the formal structure of thought as the process of combination itself. It is not therefore some sort of origin from which we could derive any substantive claims of indubitable certainty. This kind of 'ultimate grounding' may have been attempted (perhaps!) by Descartes, Fichte or Husserl, but it is certainly not Kantian. The first *Critique* already emphatically rejects such foundationalism and we did not have to wait for the philosophy of the 20th century in this respect. Kant's highest point or ultimate origin is the emptiest and most meagre representation we possess, one from which, given its total lack of content, no material knowledge can ever be acquired.

2. This transcendental moment which underlies all knowledge is not a substance. Kant scrupulously avoids the substantialistic Cartesian language of the personal thinking substance or thing (*res*), and speaks instead of the 'I think' which is thought, but is not known. As the foundation of all the categories, including that of substance, it is not itself a substance, but an utterly simple subject, something essentially singular that cannot be dissolved into a plurality of subjects (B 407). It is the logical (or 'thinking') I as distinct from the psychological I (*Progress*, XX: 270). This transcendental subject designates no object, but rather the task and the ability of first-person synthesis which only transpires in the background.

3. Considered immediately on its own, Kant's 'I think' is only responsible for the contribution of the understanding. For genuine knowledge we require the equally essential contribution of intuition. But the understanding also brings the manifold of intuition into a unity.

4. For Descartes the real foundation of truth lies in God, and the subject presents a merely transitional step in the appeal to God. Kant, on the other hand, dispenses with every theological foundation. Insofar as philosophy attempts to provide a foundation for science in general, it finds this foundation in a secularised metaphysics.

5. Kant's insight that the subjectivity of thought (and that of intuition as well) is indispensable to objectivity, namely the unity of subjectivity and objectivity, overcomes Cartesian dualism with its two worlds of subjective thought (*res cogitans*) and objective, spatially extended things (*res extensae*).

The first three elements of Kant's alternative programme can all be found, in reverse order, in the famous introductory sentence of

Section 16: 'The *I think* must be *able* to accompany all my representations'. Let us take them in this order:

3. As an entirely spontaneous process the 'I think' lacks the moment of intuition that is indispensable for all knowledge. That a representation is 'mine' is something that can only be thought, and not intuited.
2. The 'I think' that can potentially accompany all my representations does not consist in an independent 'I' that could be treated as a substrate or substance in which we might identify individual representations as so many fluctuating features, sometimes united with and sometimes distinguished from one another. It is simply a representation of thinking and thus an 'act of spontaneity'.
1. Kant's 'I think' is a representation of a quite unique kind and possesses a conceptual rather than an intuitive character. It is not the concept of a class of objects, but of something singular that, unlike standard singular instances, can never be given in intuition. For it lacks the characteristic feature of intuition that consists precisely in being the representation of a manifold. By virtue of this lack the 'I think' is an utterly simple and empty representation.

That the 'I think' can accompany my representations indicates the simple and yet fundamental circumstance that representations are not *my* representations by virtue of the represented content, but solely because I represent them for myself, that is, because I 'make them mine' even as I think them. That these representations are 'in me' and simultaneously 'for me', that I am 'the subject of thoughts' and the 'ground of thinking' (B 429), is not of course something that should be taken in an empirical or psychological sense. The 'I think' possesses a necessity which clearly exposes the empirical and psychological interpretation as a mistake.

The repudiation of all empirical and also of all rationalist-Cartesian psychology in this connection does not therefore license us to reject all psychology, and especially not transcendental psychology (cf. Chapter 17.1 below). Kitcher provides a detailed analysis of Kantian psychology, although her argument is not particularly convincing when she interprets it as a methodological reflection on empirical-psychological investigation, rather in the manner of contemporary cognitive sciences (in this regard cf. Brook 1994). This reduces the transcendental subject to a functional system of materially connected mental states (Kitcher 1990: 122) and clearly does greater justice to

Hume's associationist psychology and to the naturalistic trend of modern epistemology than it does to the Kantian critique of all such approaches. Kitcher attempts a Humean interpretation of Kant which leaves little of the critical philosophy itself intact. In this interpretation, undertaken from the perspective of the theory of science, transcendental psychology is turned into an abstract, higher-level, but still ultimately empirical theory of empirical knowledge and experience. But whereas the empirical I lives and is embodied in the world at some particular time, Kant's transcendental 'I think' finds its appropriate methodological place prior to all experience, but is nonetheless presupposed whenever we attempt to understand the latter. (For the historical background to Kant's concept of the subject and the development of his theory cf. Klemme 1996.)

There is also another objection according to which Kant assumes as something self-evident that thinking is a personal process. But the very alternative of personal consciousness or impersonal consciousness misses the point of Kant's reflections altogether. For the accompanying 'I think' and the subject which brings about all combination are pre-empirical elements, not persons that we might then attempt to contrast with the idea of an impersonal consciousness ('it thinks').

10.4 Keeping to the Limits of Experience

Kant's part proof I has revealed three things: for the purpose of objective knowledge the manifold requires an activity of combination which is grounded in the transcendental 'I think', and needs categorial articulation if it is to possess any further determinacy. The *modi cogitandi*, the categories, thus reveal themselves as *modi essendi*, and the *Critique* shows once again that the theory of knowledge and the theory of the object are simply two sides of the same philosophical enterprise.

Given this conclusion, one may well ask why Kant was not satisfied with the initial deduction. *One* problem here is easy to identify: up to this point only the objective validity of categoriality itself has been shown, rather than that of the individual categories. And in this sense one could perhaps assume, with philosophers like Quine (1960: Sections 1f.), that different conceptual frameworks might be required to grasp the nature of reality. But the metaphysical deduction already clearly excludes this approach at the level of the categories. It is true

that the requisite further analysis of the individual categories (B 147: 'solely with regard to their specific character and number') is only provided later in the chapters on the 'Schematism' and the 'System of Principles'. Thus for part proof II (Sections 22–27) we require further arguments, in the course of which, as we have indicated, either one task of the proof is accomplished from a further perspective, or the single proof is completed in a second partial step. In the first case the point of the argument is already accomplished by the end of the first part of the proof, while in the second case it is only finally accomplished at the end of the second part.

The congruence between the conclusions of Section 26 and the result presented in Section 20 speaks in favour of the first interpretation, but the remarks in Section 21 that suggest that Kant will proceed to show something new, as indeed he does, speaks in favour of the second interpretation. But we still need to explain the specific character of this new contribution. According to Dieter Henrich (1973 and 1976), Kant initially only demonstrates, in the first part of the argument, the necessity of the categories for sensible intuitions which 'already contain unity', and then, in the second part, generalises the point for all sensible intuition. But this interpretation seems to be contradicted by Kant's own summary of the first part proof: namely the claim that a given intuition, that necessarily stands under the categories (B 143), does not need to contain unity already. As Wagner (1980) already argued, building on Brouillet (1975), part proof I shows that the unity of sensible intuition is due to the categories, while part II argues that there is no sensible intuition that does not stand under the categories. Thus it is not just experience, as a connection of perceptions (B 161), but its component parts, the perceptions themselves, which are already grounded in the categories.

Both interpretations speak of the unity of sensible experience without adding any qualifying reference to objectivity. Walker (1978: Chapter VI) also fails to make the requisite reference to objectivity here. Kant himself distinguishes between the subjective expression of the feeling of the pressure of weight and the objective expression that 'it, the body *is* heavy' and makes the transcendental 'I think', together with the categories, responsible not just for any unity, but for an explicitly objective as opposed to merely subjective unity. This suggests that we should attempt a different, or at least a differently accentuated, interpretation of the argument:

The title of Section 20 claims that all sensible intuitions only acquire the status of objective knowledge by means of the categories. Part proof II can only strengthen this conclusion in two respects: by showing that the categories can be employed for the construction of objective reality as a whole and that they can indeed only be employed for this purpose. This interpretation emphasises two elements which stand behind both part proofs: the theorem of the two stems of knowledge and the opposition between rationalism and empiricism. At the beginning of part proof I Kant himself argues by appeal to the opposition between sensibility and the understanding, and he recalls this fundamental distinction at the beginning of part proof II (B 146). Part I demonstrates, against empiricism, that the manifold of intuition can only become an object of knowledge by means of the categories and thereby ascribes objective validity to the categories in general. Part proof II, on the other hand, emphasises, against rationalism, the restricted range of the application of the categories. Against the presumption that genuine knowledge could be derived from the categories alone, Kant explicitly declares the latter to be mere forms of thought which possess no objective reality in the absence of 'sensible and empirical intuition' (B 149). The footnote to Section 27 clearly points out that 'for *thought* the categories [...] have an unlimited field. It is only the *knowledge* of that which we think, the determining of the object, that requires intuition' (B 167). Taken together, part proofs I and II explain that the world of categorial judgements coincides with the world of possible experience. Once again the fundamental point of the 'Copernican Turn' is decisive: we can have knowledge only of appearances that are mediated by both sensibility and the understanding, not of things in themselves.

In order to challenge the claims of rationalism, part proof II explicitly confronts four standard objections or problem cases to which the rationalist position might naturally appeal. According to the first problem case (Section 22), the science of pure mathematics, in which the great rationalist thinkers like Descartes and Leibniz had so excelled, appears to furnish precisely what Kant has denied: categorial knowledge of an object independent of experience. Kant here concedes *one* point and thus implicitly extends the theory of mathematics already presented in the 'Aesthetic': categories are indeed 'applied' in the field of mathematics. Geometry, for example, is not already made possible simply through the pure intuition of space, but only through an intuitive representation which involves a synthesis of the manifold

mediated by the categories. In Euclidean geometry, for example, we can make a subjective judgement: 'If I construct a triangle, the sum of its angles is 180° ', but the objective judgement that: 'The sum of the angles of the triangle *is* 180° ', makes use of the four classes of the categories. For the judgement is universal in respect of quantity, affirmative in respect of quality, categorical in respect of relation, and apodictic in respect of modality. The judgement therefore clearly applies the categories of unity, reality, inherence-subsistence, and necessity.

But this application does not allow us, according to Kant, to infer anything with respect to knowledge beyond the domain of possible experience. For in the absence of the matter of intuition mathematics only provides us with 'a priori knowledge of objects ... only with respect to their form' (B 147). The question whether there are objects which can be empirically intuited in accordance with mathematical assertions, and the subsequent question concerning which of the mathematically possible representations of space and time are valid for these things and for nature as the sum of such things, cannot be decided by mathematics as a species of merely formal knowledge (B 299). Since mathematical propositions do concern their own objects, such as triangles for example, the world of the categories certainly does coincide with the world of objective assertions, but not with the world of experience. We must therefore distinguish between two concepts of objectivity. A claim is objective in the weaker sense if it applies to the relevant state of affairs independently of whether we are speaking of physics (the weight of bodies) or mathematics (the sum of the angles in a triangle). In the second, and stronger sense a claim is only objective if it applies, by virtue of the addition of sensible intuition, to a world that can actually be experienced. In this regard the first sense of 'objective' remains valid, but it must be supplemented by a further element that is only given by reference to the claims of physics.

According to the second problem case (Section 23), we can make objective assertions about objects of non-sensible intuition if we spell out the predicates implied in the idea of the 'non-sensible' and ascribe it to a particular kind of object. But with respect to such an object, like the soul, it is only possible to affirm negative determinations – the object is not extended and does not exhibit duration in time – which yield 'no real knowledge' (B 149), and this only supports Kant in introducing limitative judgements as a specific kind of judgement (cf. Chapter 9.3).

The third problem case (Sections 24–25) recalls the *cogito* argument of Descartes and directly challenges the epistemic revolution at the heart of the first *Critique*. According to this third approach we must recognise that transcendental self-consciousness implies and involves knowledge of *oneself*, and thus presents at least one case of knowledge that is independent of all empirical experience and yet is also valid in its own right. If this objection were justified, there would be *one* case of genuine knowledge that is not merely a knowledge of appearances, and this alone would suffice, in this respect at least, to rehabilitate the rationalist metaphysical approach of Descartes. But Kant emphatically argues that transcendental apperception is simply the *consciousness* of oneself, of the fact *that* I am, and not the *knowledge* of *what* I am. For on the one hand we find the ‘I’ as the merely the formal ‘vehicle of all concepts in general’ (B 399), as an empty consciousness that accompanies all our concepts, while on the other we find the objective ‘I’ or real self, the object of inner experience as a matter of empirical introspection or self-examination. Thus all knowledge of the self also requires intuition and the categorial connection which this involves. The subject cannot therefore even know itself as a thing in itself, and this can only confirm the essentially phenomenal character of all real knowledge (B 152f.).

After he has dealt with the fourth problem case, that concerned with perception (cf. Chapter 10.1 below), Kant concludes part proof II and draws the relevant conclusion (Section 26): ‘the categories are conditions of the possibility of experience, and are therefore valid a priori for all objects of experience’ (B 161). The categories are thus capable of ‘prescribing, as it were, the law to nature’ (B 159). Given the thoroughgoing correlation between subjectivity and objectivity, we cannot explain the transcendental structures of subjectivity without simultaneously grasping the pre-empirical features of objectivity. Nor, for the same reason, can we understand the ‘deduction’ without simultaneously considering the lawfulness of nature that is implicit in the categories, the pre-empirical presuppositions of the actual empirical laws of nature. It is only to be expected, therefore, that Kant returns to the question of the synthetic unity of apperception when he finally completes the ‘deduction’ in the chapter on ‘The System of All Principles of Pure Understanding’. The transcendental ‘I think’ is at once the unity of self-consciousness and the unity of nature, and thus both subjectivity and objectivity in one.

The final 'Outcome of this Deduction' furnishes a twofold conclusion (Section 27). Our interpretation of the argument is supported by the fact that Kant here presents us once again with the two parts of his proof. The first part is encapsulated in the remark: 'We cannot *think* an object save through the categories', while the second part is encapsulated in the claim that we cannot *know* an object so thought save through intuitions corresponding to these concepts' (B 165). Kant immediately underlines the full 'Copernican' significance of this general conclusion: since experience is dependent on pre-empirical concepts, namely the categories, it is not experience which makes these concepts possible, but these concepts which make experience possible. Thus we must recognise 'that the categories contain, on the side of the understanding, the grounds of the possibility of experience in general' (B 166f.).

Notes

1. In this connection Kant presents much the same account in the later *Critique of Judgment*. It is true that in this work he explicitly introduces 'judgements of taste' that are capable of a certain 'objectivity'. But he specifically restricts them to aesthetic judgements concerning the beautiful and the sublime since they abstract from the sensuously 'agreeable', which is already declared to be purely subjective in the *Prolegomena* (Section 19–20). On the other hand, Kant there treats pleasure and pain in the same way as colour, heat and light: they can all be objectified with respect to specific degrees of intensity (*Prol.*, Section 26, footnote).
2. The term 'apperception' goes back to Leibniz who developed the concept as analogous to that of 'perception', which is the inner state of the monad insofar as it represents external objects. Leibniz defines 'apperception' as 'the consciousness or reflexive knowledge of this inner state' (*Principes de la nature et de la grâce*, Section 4). In the first *Critique* the rather infrequently used term *Perzeption* refers to a 'representation accompanied by consciousness' (B 376). The more commonly employed term *Apperzeption*, on the other hand, refers to what Kant variously describes as 'consciousness of oneself' (B 68), 'self-consciousness' (B 132), 'perception of oneself' [*Wahrnehmung seiner selbst*] (B 400) and 'inner perception' [*innere Wahrnehmung*] (B 401). Transcendental apperception is therefore the same as transcendental self-consciousness.

THE INCOMPLETE DEDUCTION

11.1 A Third Faculty?

Once the ‘deduction’ has revealed the a priori elements of the understanding that are constitutive for knowledge, it looks as though the first part of the ‘Analytic’ is entirely complete. Nonetheless, Kant does not proceed immediately to the second part, but introduces a discussion which perhaps appears to delay the progress of the main argument yet also raises the reader’s interest and expectation: for he now thematises a third faculty of cognition (the ‘power of judgement’) which mediates between sensibility and the understanding and once again involves pre-empirical elements, namely what he calls ‘transcendental schemata’. The fact that there is no mention of the latter in Kant’s *Reflections* from the 1770s would suggest that they represent a final elaboration of his thought (Smith 1923²: 334). But even if he only recognises the necessity for transcendental schemata at a relatively late stage, the problem in question was already implicitly raised much earlier once Kant had drawn a sharp distinction between the faculties of sensibility and the understanding and thus rejected the view of Leibniz, Wolff and Baumgarten that all cognition could be regarded as a continuum. This emphatic distinction of Kant’s produces a gulf that it is the function of the power of judgement to bridge. Kant’s doctrine of the ‘schematism’ is a direct consequence of his mature acknowledgement of the indispensable role of sensibility.

In the first part of the ‘Analytic’ Kant exposes the conditions under which the pure concepts of the understanding can be applied to pure sensibility. The far more extensive second part of the ‘Analytic’, almost twice as long as the ‘deduction’, specifically develops the judgements which the understanding makes a priori under the presupposition of the transcendental schemata. It is thus only once he has presented the principles of the pure understanding that Kant can declare that his

'Logic' is effectively completed: 'We have now not merely explored the territory of pure understanding, and carefully surveyed every part of it, but have also measured its extent, and assigned everything in it its rightful place' (B 294). The following part (Chapter III of the 'Analytic of Principles'), which was not mentioned in the prospective outline of this section of the text (B 175), is a kind of supplementary discussion which, like the 'Conclusions' in Section 6 the 'Aesthetic', thematises the distinction between empirical reality and transcendental ideality. With reference to the distinction between 'Phenomena and Noumena' in the title of the chapter, Kant here formulates the 'Copernican' conclusion of the entire 'Analytic': a justification of the pure understanding which simultaneously identifies its limits in terms of a necessary relation to sensibility. Kant finally completes his discussion with an explicit 'Appendix' on 'The Amphiboly of Concepts of Reflection' and its lengthy concluding 'Note'.

A specific 'faculty of subsuming under rules' (B 171), namely of passing from the universal to the particular (*Logic*, Section 81), or what he will later describe as the 'determining power of judgement' (*CJ*, V: 179), is thus clearly required for Kant's argument. At least three objections have been raised to Kant's treatment of this question in the first *Critique*, along with the accusation that his presentation of the doctrine is obscure and confused (cf. Jacobi, *Werke* II: 532 and III: 96 for an early example of this criticism; cf. also Walsh 1957: 95). Firstly, in accordance with the theorem of the two stems of knowledge, sensibility and the understanding appear to stand to one another as 'matter' and 'form', as a relation in which the understanding brings an indeterminate material content to unity and determinacy. But given the intrinsic correlation between matter and form, no gulf between sensibility and the understanding arises in the first place, and the third faculty of cognition and the accompanying 'schematism' would seem to be redundant (for example Adickes 1889: 171, Note 1). For a 'deduction', assuming it is successful, has already shown that the categories are applicable (Prichard 1909: 141ff.; according to Warnock 1949 to 'possess a concept' is generally to know how to apply it). And there is therefore only a place for a third faculty if the two other faculties have already forfeited their entirely correlative character and the direct co-operation between them has thereby been impaired. Secondly, the chapter on the 'schematism' solves its indispensable task with respect to the applicability of the categories so successfully that

the preceding part of argument, the transcendental deduction itself, thereby becomes redundant (Paton 1936, vol. II: 17ff.). Thirdly, it has been claimed that the 'schematism' can only be justified if it leads to the position of an 'absolute idealism' which fundamentally contradicts the rest of the first *Critique* (Daval 1951: 295).

But these objections are only valid on the double assumption that the basic problem of the transcendental deduction has already been completely resolved at this point and that the power or faculty of judgement occupies an equal status alongside, or more precisely between, the two faculties of sensibility and the understanding. But the transcendental task of demonstrating the objectivity of the pure elements of cognition already speaks against the first assumption. Although this task has already been discharged with respect to sensibility, it has not yet been entirely completed for the theory of the understanding. For while the transcendental exposition of the 'Aesthetic' has shown that the two pure forms of intuition are indispensable for all knowledge and moreover make the specific science of mathematics possible in the first place, the corresponding theory of the understanding, specifically the 'deduction', has certainly shown that what we have called 'categoriality' is equally indispensable. But it has not yet demonstrated this specifically either for the individual categories or for that 'pure natural science' that Kant had announced in the 'Introduction' (B 20). The task of furnishing a metaphysics through the examination of the sciences, the demonstration that, alongside mathematics, there is another science which also includes a synthetic a priori dimension, has not even been broached yet.

The chapter on the 'Principles of the Pure Understanding' is devoted to precisely this task. But this requires a further intermediate argument which doubly complicates the transcendental part of the 'Logic', as distinct from that of the 'Aesthetic'. Firstly, there are two synthetic a priori dimensions to the understanding: the categories and transcendental apperception. Secondly, the indispensability of the categories is initially demonstrated only in the context of transcendental apperception, and then only briefly. The 'deduction' only shows *that* pure concepts indeed relate to sensuous intuitions, but it does not show *how* the categories, despite their purely intellectual character, can nonetheless be applied to the domain of sensibility. The correlative relationship of sensibility and the understanding is therefore qualified by the recognition of their heterogeneity, and this is precisely why

the 'schematism' is required. The latter neither repeats nor replaces the preceding 'deduction', but in conjunction with the principles of the pure understanding it furnishes the 'Analytic' with a coping stone that decisively resolves the question concerning the fundamental character and role of the synthetic a priori (for the schematism cf. Butts 1984: 151ff.; Leiber 1996 and Hunter 2000).

Excursus: In the 20th century Martin Heidegger was surely the only great philosopher who, in addition to elaborating his own thought, also made a fresh contribution to reflection concerning major phases of the history of philosophy itself. In his readings of Kant, as in other cases, Heidegger's own philosophising succeeded in casting new and sometimes dramatic light on the relevant texts, even though his approach also threw other aspects and features into the shade. This rather unequal illumination produced a certain one-sidedness, and even distortion, in some respects. Against the background of *Being and Time*, Heidegger sought in his study *Kant and the Problem of Metaphysics* to develop 'the idea of a fundamental ontology through an interpretation of the *Critique of Pure Reason*'. In this connection he properly emphasises the fundamental importance of sensuous intuition in Kant's thought (Heidegger 1991, Section 4: 21ff.), but also argued, less convincingly, that time enjoys priority over space (Section 9: 47) and that the 'I think' is effectively the same as time (Section 35: 191), although he was quite right to subject the chapter on the 'schematism' to a particularly close analysis (Sections 18–23: 85–113). Challenging the widespread view that this part of Kant's text revealed a considerable degree of 'confusion and lack of overall unity', Heidegger claimed the doctrine of the schematism was 'incomparably perspicuous in its structure'.

Heidegger contrasts the 'schema' with the 'image' in the three senses of the latter which Kant also employs: 'as the immediate look of a being, as the at-hand, likeness-taking look of a being, and as the look of something in general'. Heidegger explains that 'what is thematically represented in the making-sensible is neither the empirical look nor the isolated concept, but is rather the "listing" of the rule governing the providing of the image' (Section 20). For the 'image still has the appearance of a something individual, while the schema has the unity of the general rule governing many various presentations "as its intention"'. From this Heidegger derives his principal thesis: 'According to its essence, all conceptual representing is schematism' (Section 21).

However convincing these observations may be, we cannot say the same for Heidegger's philosophical conclusion in this connection: that the doctrine of schematism with respect to the pure concepts of the understanding furnishes the decisive step for grounding a *metaphysica generalis*, i.e. the original science that investigates the first grounds of human knowledge (1991: 107). In fact for Kant the doctrine is only *one* component of a complex theoretical structure that culminates in the 'System of All Principles of Pure Understanding'. And indeed Heidegger corrected his original interpretation seven years later in the lectures on Kant's 'Principles' which he published as the *Question concerning the Thing*. One may try and interpret the first *Critique* in general from the perspective of the 'schematism' (Lachièze-Rey 1931), or consider the latter to be 'one of the finest aspects of Kant's philosophy' (Hegel, *Werke* XX: 347f.), or follow those who, with Heidegger, emphasise its unique significance (Gram 1968: Chapters 4–5; Allison 1969). Indeed Kant himself regards the 'schematism' as 'one of the most important doctrines' (*Reflections*: 6359). But we can only do justice to the first *Critique* as a whole if we recognise the schematism as certainly indispensable for his argument, but precisely as one indispensable aspect amongst several others.

11.2 The Subsidiary Faculty of Judgement

Let us return to the assumptions that lie behind the criticisms we have mentioned. If the second assumption, namely that the 'power of judgement' is an equally valid cognitive faculty in its own right, then we would certainly expect it to be introduced in the 'Aesthetic' (Section 1) or in the first section of the 'Introduction' to the 'Transcendental Logic' (B 74f.) as a third fundamental source of knowledge. But this is not the case since the power of judgement is not presented as a *source* of knowledge on the same level as sensibility and the understanding, but simply as a *faculty* of knowledge.

If the power of judgement were on the same level, then the part of the text that is dedicated to it would, like the 'Aesthetic' and the 'Analytic of Concepts', consist of one preliminary step, followed by two principal steps. In fact the argument does fall into three specific steps: Kant first isolates the pure power of judgement, then seeks in the chapter on the 'schematism' to identify its a priori elements, before

finally developing the principles which 'follow a priori' from the pure concepts of the understanding (B 175). Nonetheless, he deviates from the precise pattern he had earlier adopted because, in the present context, the power of judgement possesses a merely subsidiary significance. The location of the discussion of the power of judgement within the theory of the understanding also shows that it is subsidiary merely to the understanding, not to sensibility as well. The (determining) power of judgement certainly has one side that is related to the understanding and another side related to sensibility. But since sensibility is entirely receptive, and the understanding alone is active, the power of judgement is only required for the field of the understanding since the rules of the latter, like rules in general, cannot simply apply themselves to concrete cases. Where this requisite power of judgement is deficient, we are presented with 'what is ordinarily called stupidity, and for such a failing there is no remedy' (B 172, footnote).

A physician, for example, who has acquired his diagnostic and therapeutic knowledge through extended study must also be able to apply it appropriately to specific cases. And something similar is true for a craftsman, a teacher, an engineer, and especially for a judge. In all these examples, we can see that the knowledge of the relevant rules, knowing *that* the rules are such and such, does not simply coincide with the 'know how' that is required to apply them properly. For it is one thing to grasp the general rule or principle in the abstract, another to decide 'whether a case *in concreto* falls under it' (B 173).

In order to bring both sides involved, the general concept and the concretely given case, the power of judgement requires a representation which exhibits both an intuitive and conceptual character. This is what Kant calls a 'schema' (in Section 4 of the Dissertation on *The Form and Principles of the Sensible and the Intelligible World* he also calls it an *adumbratio* or silhouette). This dual character of the schema, which enables it to render intuitions in a conceptual manner or render concepts in a sensuous manner, forbids us to identify it with either an image or a concept (in contrast to Pippin 1976). For, if we take Kant's own example of the 'dog', the (empirical) concept is a general rule, the image provides the 'look' of an individual dog, while the schema is the general 'figure' which the imagination furnishes for the relevant concept (cf. B 179f.). The schema is thus the 'universal procedure of imagination in providing an image for a concept' (B 179f.). It is only this combination of conceptual universality and sensible figure which allows us to grasp all species, mongrels, or age groups of the animal in

question as so many cases of 'dog'. The schema is therefore a method which enables us to elaborate upon the individual case and to decide which empirical concept we should employ with respect to which constellation of sensible intuitions.

11.3 Transcendental Schemata

There are schemata not only for empirical concepts, but also for the pure sensible concepts of geometry and arithmetic. For example, we can have a universal intuition of a triangle which holds equally for 'all triangles, whether right-angled, obtuse-angled, etc.' (B 180). But what is both decisive and problematic for the first *Critique* is essentially the third group of schemata: those for pure concepts of the understanding, namely the pure schemata which, as conditions of objectivity, Kant also calls transcendental schemata. In contrast to empirical judgements, no particular talent is required here since transcendental judging has always already transpired whenever we judge empirically. But such transcendental judging does require intuitively mediated concepts and conceptually mediated intuitions, and both in pure form. Given the double character of the sensible-intellectual schemata, we may well ask why Kant discusses them in the context of his specific theory of concepts, rather than assigning a special place to them between the 'Aesthetic' and the 'Transcendental Logic' for example.

The answer to this question lies in that subsidiary function with respect to the understanding which we have already mentioned. Their mediating function can be fulfilled only in relation to the understanding, and not to intuition.¹ Without reference to the sensuously given the categories remain pure *forms* of thought which as yet represent 'no object'. The transcendental schemata assume the double task of legitimation and limitation, of realisation or restriction (B 187): since the categories relate to sensibility through schematisation, they acquire an objective meaning or significance ('realisation'), although this latter is limited to the domain of sensibility or possible experience ('restriction'). It is thus only in relation to the sensuous domain that the categories acquire cognitive significance.

If the sensible aspect of the transcendental schemata is to be pure, they must refer back to pure intuition, though not indeed to space as the form of outer sense. Since the pure unity required for the category

can only be provided by inner sense the transcendental schemata consist exclusively in temporal determinations in accordance with a priori rules (B 184). As determinations of time they accord with pure intuition and as a priori rules they accord with the categories. This double accordance furnishes criteria which permit us to decide which category should be applied to which temporal constellation of sensible impressions. Prior to their schematisation the categories themselves remain abstract and fall easy prey to illicit and extravagant use of reason. It is only through schematisation that they first become concrete, both capable of proper employment and specifically limited in their employment.

And something similar is true for the representation of time deployed in the 'Aesthetic'. Mere succession and coexistence is not yet capable of any application. For this we require time that is richer in content, that is not merely intuitively but also conceptually structured through mediation with the categories. Thus the transcendental temporality of intuition gives way to the transcendental temporality of experience. The latter is not indeed simply identical with either mathematical or physical time, but marks the necessary intermediate step in this direction. The first schema makes possible arithmetic through reference to number, while the other schemata make possible intensive and extensive measurement and the laws of physics. Corresponding to the four classes of categories, there are four possibilities for the pure schematisation of time: with regard to the two mathematical classes (quantity and quality) Kant introduces only one schema in each case. He does not elucidate the point any further here, but his argument can easily be made convincing. It is clear, therefore, that the chapter on the 'Schematism' can by no means be regarded as an arbitrary addition to the first *Critique*, but is firmly rooted in its central problematic:

The concept of magnitude, which comprises the categories of quantity, involves unity, plurality and totality. The schema of magnitude once again lies in number as the representation 'which comprises the successive addition of homogeneous units' (B 182). The number concepts (1,2,3,4 ...) are generated insofar as we schematise the category of quantity in relation to time as a form of intuition. It might initially be objected that we can surely count not only a sequence that unfolds in time, but also things that exist simultaneously, or even things which, like the categories, do not arise in time at all. But this is to overlook that the transcendental schemata

derive from pure temporality, or mere succession, not from the measurable time which first becomes possible only through the process of schematisation itself. Independently of what is counted, counting as such intuits pure succession: first 'one'; then another 'one' that together with the preceding yields 'two'; then another 'one' that together with the preceding yields 'three', and so on.

Kant is also right in indicating only a single schema for the three categories of quality. For reality fills time with a certain quantum (degree or magnitude) of sensation. The rejection of reality in negation corresponds to empty time, while limitation involves no position with respect to reality. In all three cases, therefore, we employ the same schema: that of filled or unfilled, empty, time.

For the two dynamic classes of categories, on the other hand, Kant provides three schemata in each case. With respect to relation, the time-series, these are permanence (duration), temporal sequence (succession), and simultaneity. With respect to modality, the scope of time, it is the circumstance that an object exists either at some time ('possibility'), at a particular time ('actuality'), or at all times ('necessity'). Let us take the schemata of substance and causality as our example: for an empirical process like that of the street becoming wet, in order to claim that the street has undergone a change, we must be able to recognise the street in both its dry and its wet state as the same subject that underlies the process, as the substance that undergoes an alteration of 'accidents' and is dry at first and is subsequently wet. Since recognition of the subject presupposes a duration through time, the relevant schema here is the permanence of the real in time 'which thus abides while all else changes' (B 183). We cannot perceive time as such, but we certainly can perceive a substance through its changing accidents.

If we wish, on the other hand, to apply the category of causality to a manifold of intuition, we must assert more than a mere succession of events in time, such as: 'it rains, the street subsequently becomes wet'. We must also assert that the sequence of events is grounded in the objective situation, and not merely in our own subjective sensation. But that, in turn, is only possible where the events transpire in accordance with a rule, such as: 'rain causes wetness'. The schema of causality therefore consists in a sequence in the manifold that is subject to a rule.

Note

1. Kant's examination of the power of judgement in the third *Critique* is somewhat different in a number of respects. For there he is not primarily concerned with the 'determining' power of judgement which subsumes the particular under an already given universal, such as a general rule. For the task of the 'reflective' power of judgement, on the contrary, is to search out a relevant universal for the given particular. Kant addresses this task in relation to two questions whose putative objectivity plays no role in the chapter on the 'Schematism': namely with respect to aesthetic judgements (those concerning the beautiful and the sublime) and teleological judgements (those concerning the concept of end or purpose) in relation to the realm of organic nature, the unity of nature in general, and the unity of nature and freedom. In the context of the first *Critique* the concept of purposiveness (cf. Chapter 20.2 below) nonetheless plays a significant role with respect to the 'final purpose of the natural dialectic of human reason' (B 697ff.), as does the concept of end with respect to the ideal of the highest good (cf. Chapter 20.2 below) and the architectonic of pure reason (cf. Chapter 22.1 below).

THIRD ASSESSMENT: UNDERSTANDING AND WORLD (1)

The text of the ‘Transcendental Analytic’ up to and including the chapter on the ‘Schematism’ is so rich in observations and insights that it already merits an initial provisional assessment, even though the ‘Analytic’ itself is still far from concluded. Our assessment will concentrate on three central issues: the fundamental concepts of the understanding (12.1), the theory of truth (12.2.), and the critique of epistemological naturalism.

12.1 Fundamental Concepts

In everyday speech, and even in the domain of science, the term ‘category’ is frequently used in a very broad sense simply to refer to a particularly important concept, or what we could call a ‘fundamental’ concept. It is not the least of Kant’s achievements that he succeeded precisely in exposing and clarifying the role and character of such concepts. There are two respects in which categories can be recognised as fundamental concepts in the strict sense of the expression. They are ‘original concepts’ [*Stamm-begriffe*], as Kant calls them, which cannot themselves be derived from simpler or more primitive concepts and they are indispensable for all objective thought. Although contemporary philosophy hardly regards the search for fundamental concepts as its principal task, it nonetheless recognises at least two kinds of concepts that are comparable in this respect. That we typically ‘quantify’ our assertions – certain predicates apply either to ‘all’ objects or to ‘some objects, or at least one’ – points directly to Kant’s first categorial class of ‘quantity’. It is even easier to recognise Kant’s fourth categorial class, that of ‘modality’, since we naturally regard our assertions as being possibly true, or as actually true, or as necessarily true. And since we are interested in acquiring substantive knowledge of the world, we

also require the further associated categorial class of 'quality'. And as soon as we attempt to learn about the relations between objects, we discover that the last remaining categorial class of 'relation' also has its legitimate function. All four of Kant's categorial classes thus appear philosophically plausible, even if contemporary thinkers might 'sort' the concepts of qualities and relations differently, in terms of single or many-placed predicates for example.

12.2 Three Approaches to Truth

If we are considering truth in terms of the objective validity of assertions, there are three basic theoretical perspectives which have been adopted: those associated with 'correspondence', 'coherence' and 'consensus'. If any one of these perspectives is defended in exclusive terms, we are naturally confronted with three competing theories of truth. And these respective approaches to the problem of truth may well throw up three different kinds of question: semantic questions concerning the meaning of the expression 'true', ontological questions concerning, for example, the subjective, objective or relational property of assertions, and epistemological questions concerning the criteria of truth (for a good synopsis of the contemporary debate cf. Schantz 2002). But the way in which the first *Critique* approaches the problem of truth does not content itself with simply addressing a single basic question. Kant begins, semantically, by considering the meaning of the expression truth, then treats it, ontologically in this respect, as equivalent to objectivity, and also sets up a criterion of truth, albeit a transcendental rather than a customary one.

Epistemologically regarded, for the correspondence theory of truth an assertion is true if it agrees with ('corresponds' to) reality, for the coherence theory it is true if it 'coheres' with other, and perhaps all other, assertions, and for the consensus theory it is true if it finds the 'agreement' of other, or ultimately all other, participants in the enquiry. According to the first *Critique* all three perspectives have some right, albeit no exclusive right, in determining the character of truth. And while it is clear that the concept of correspondence enjoys a certain privileged right in Kant's eyes, it is not defended in the naive-realist manner which protagonists of the coherence and consensus theories of truth typically criticise. On the contrary, the new and revolutionary 'Copernican' form of Kant's argument criticises the critics

who understand the notion of ‘correspondence’ in terms of a relatively naive realism.

According to Kant the ‘nominal definition’ [*Namenserklärung*] of truth as ‘the agreement of knowledge with its object’ (B 82) furnishes a semantic argument in favour of the correspondence theory. At the same time Kant declares that, ontologically speaking, truth is a two-term relation where one side consists in cognition, in a judgement (cf. B 848 f.) and the other consists in the objective state of affairs, insofar as truth involves ‘objective validity’ (B 816). Now it might be argued that Kant is not actually offering the ‘nominal definition’ of truth in his own name (cf., for example, Prauss 1973: 74). But Kant explicitly says that this definition is ‘assumed as granted’ here (B 82). And indeed he repeats the definition on several occasions (B 196 f.; 236; 296; 671), defends it in his various lectures on logic (for example, *Logic*, IX: 50f.), and substantiates it with the claim that the ground of objective judgements lies in the object itself (for example, B 849).

Of course the nominal definition on its own does not suffice to explain or clarify the problem. It is not a solution, but merely a statement of the task to be undertaken. And Kant claims that the solution immediately proffered by the correspondence theory of truth involves a vicious circle (or ‘sophism’ [*Diallele*] as he says at B 82; for further development of the argument cf. *Logic*, IX: 50): to be regarded as true, our knowledge must agree with the object which I can only compare with my knowledge precisely through knowing it. My knowledge must therefore be able to confirm itself, although this contradicts the required agreement with an object that is supposed to be independent of the process of knowing. The theory of correspondence thus initially seems to fail and this impels us to consider other alternatives.

If we consider one of the alternatives here and take consensus as our criterion, and specifically as a purely empirical and comparative criterion, then an assertion is true to the degree that it meets with consensus. But this would make truth into a child of its time: dependent upon the current state of knowledge, as well as upon the errors and prejudices of a particular culture or epoch. Strictly speaking, it is difficult to see how we could even speak of errors and prejudices in this connection. For there would be no criterion insofar as whatever enjoys the overwhelming agreement of a given culture would have to be regarded as not merely factually true, but as true by definition. But of course the history of science offers abundant counter examples of significant changes and even revolutionary innovations which, in the

name of truth, have emphatically rejected almost universally shared assumptions, and indeed quite fundamental assumptions. One only has to think of the geocentric conception of the world or of the exclusive claims to validity that have been made on behalf of Euclidean geometry or Newtonian physics. And philosophers of course have always claimed to overcome certain errors, just as Kant claimed to overcome the objectivistic conception of knowledge as a relation of correspondence or agreement with things in themselves.

The very idea of truth thus implies a certain anti-relativist potential. In order to meet such objections, the sophisticated versions of the consensus theory lay down two relevant conditions: we ascribe truth only to that which successfully finds agreement over time, and not indeed merely the agreement of anyone whatever, but rather that of the relevant experts or specialists. But even when the theory is qualified in this way, it still requires a further moment besides the consensual dimension itself, namely the relation to that about which we can come to an agreement: the objective state of affairs in question. Without this 'relation to the world' the community of consensus could never amount to more than a merely intellectual play of ideas. Even if many thinking subjects were involved in making claims in this connection, Kant would describe such assertions as subjective, perhaps also as multi-subjective, but would deny them genuine objectivity. If the consensus theory of truth therefore acknowledges this essential relation to the world, it thereby renounces its alleged epistemological autarchy. It relinquishes its own exclusive right in favour of a merely partial and complementary right.

Kant defends an emphatically non-relativistic form of consensus. He liberates the idea of agreement from any qualifications that might weaken it and expressly demands validity 'for everyone' (B 849f.; *Prolegomena*, Section 18). The criterion he recognises is that consensus of all in which 'the judgements of each and every understanding must be in agreement with one another (*consentientia uni terio, consentiunt inter se*)', in which 'holding something to be true is to be found valid for all human reason', in which there can be an 'agreement of all judgements' (B 848f.). The Latin formula which Kant here inserts in brackets uses the verb *consentire* (to agree with others) and it should thus be evident that the consensus theory of truth was not something first discovered in American pragmatism and subsequently adopted and developed by the second generation of the Frankfurt School. Kant

already defends this approach in an important substantive respect, and does so quite explicitly. And in a thoroughly modern vein he even introduces a 'touchstone' familiar to contemporary theory of language and communicative discourse: 'the possibility of communicating' (B 848) our truth claims.

Self-evident though the significance of consensus and communicability remains for Kant, he nonetheless explicitly restricts their ultimate status. He only permits them a certain complementary rather than original right in the matter of truth, one that is derived from a 'common ground, namely the object' (B 849). Indirectly therefore he would reproach the protagonists of consensus with providing an inadequate basis for the theory of truth: for an assertion is not true because everyone gives their agreement to it, but everyone gives their agreement to it by virtue of its 'agreement with the object'. Consensus arises from the correspondence and one is 'compelled to assent through the weight of the evidence' (B 615). Consensus does not enjoy the status of a ground, but rather that of a consequence of truth. Hence it can serve only as a secondary, rather than a primary criterion of truth (for a critique of Habermas's consensus theory of truth, cf. Höffe 1979).

The principal alternative to an account of truth in terms of correspondence, the coherence theory of truth, is defended in contemporary thought on the basis of various considerations and in a variety of forms. But all versions of the theory argue that the justification of assertions cannot be provided piecemeal, but only by reference to an entire system of assertions. Kant also presents this basic thought at different levels of the argument with a growing degree of emphasis. The first level, of course, involves analytic coherence as the criterion of consistency or absence of self-contradiction. It is true that Kant explicitly introduces it as the highest principle of all analytic judgements, but it must also hold for the internal relationship between all judgements. The second level, that of the most modest form of a specifically synthetic coherence, can be discovered in the 'I think' which must be able to accompany all my representations. By virtue of this *ability* the 'I think' involves what is only a potential rather than an actual coherence, and one that is also entirely indeterminate. The relationship of all representations and judgements consists merely in their connectability in a *single* thinking subject in which all my representations constitute a *single* experience (B 135). But there is a second aspect here: the subjective unity of the 'I think' corresponds to the objective

unity of all objects, the sum of which constitutes the world or 'nature'. On the third level, this initially potential coherence is made determinate through the categories, through their schematisation, and finally through the transcendental laws of nature, in particular through the analogies which establish the interconnection in question (cf. Part IV below). The third analogy even explicitly states that all substances stand, at least mediately if not necessarily immediately, in thoroughgoing reciprocity (B 256). For otherwise we should be unable to recognise any objective validity with respect to events.

On the fourth level, it is only through the empirical investigation of nature that we discover that 'interconnection according to universal laws' that we entitle nature and that furnishes the 'criterion of empirical truth' (B 479). This interconnection is never finally 'given' in its complete actuality, but it is always 'given over' to us as a task for knowledge. On the fifth level, therefore, we see that the systematic culmination of Kant's commitment to coherence consists in a philosophy of research which presupposes, for example, the 'systematic unity of manifold forces' and even more general laws of nature under which the specific laws of nature stand. At the sixth level, we can recognise a diachronic dimension of coherence in the circumstance that cognitive assertions are valid 'for any time' (*Prol.*, Section 18), and not merely for a given moment. It is only in this complex six-level form that we can concur with the view of Smith (1923: xxxviif. and 36) that Kant rather than Hegel is the real founder of the 'theory' of coherence. Nevertheless we must still add, in the seventh place, that Kant does not defend the idea of coherence in an exclusive or even pre-eminent sense, but insists on connecting it back explicitly to the thought of correspondence, even if the latter is itself conceived in an entirely new way.

The concept of truth is not the governing concept of the first *Critique*. One must therefore grasp the new solution which Kant provides for the aforementioned problem of the circularity of the account of truth in terms of correspondence. There are two sides to Kant's solution. On the negative, and modest, side of the argument, he regards the very question concerning a secure and universal criterion of truth as intrinsically 'absurd' precisely because truth concerns the substantive content of knowledge, a content from which a universal criterion inevitably abstracts (B 83). The positive side of the solution consists in Kant's epistemic revolution itself which makes objectivity dependent upon subjective contributions which are independent of experience.

That is why Kant believes that the correspondence theory of truth, in its naive-realist interpretation, cannot possibly succeed. In contrast to this approach, the first *Critique* does not identify objects as bodily components of the world since for Kant it is precisely judgements, propositional claims or assertions about states of affairs, that provide the fundamental element of cognition and are the bearer of truth. Nor does it regard knowledge as the picture or reflection of a reality independent of the process of cognition. On the contrary, Kant combines objective and subjective aspects in a way which leads to a *paradoxical* interpretation of correspondence:

Truth is measured against an object that is nonetheless essentially permeated by subjective additions and contributions. The sophisticated theory of unified experience which emerges from this approach acknowledges the significance of consensus from the first. Knowledge is built upon something that is given independently of individual subjects, something that affects the senses but is incapable of truth insofar as it remains unstructured. But knowledge equally rests upon pre-empirical contributions which are therefore valid for all individual subjects. This is why knowledge can become a matter of agreement on the part of everyone, can be communicated in language, in short, is capable of inviting universal consensus. In the second place, Kant's theory integrates the implications of the concept of coherence. The entirety of knowledge and the entirety of objects, namely the world or nature, constitute a unity through categories, schemata and principles that are universally shared and through the way in which reason orients empirical research to the ideas of unity and coherence.

Kant's well-founded considerations therefore imply, epistemologically speaking, that truth consists in a correspondence that is *capable of consensus and is oriented to coherence*. Correspondence constitutes the ultimate criterion that grounds the community of knowing subjects, renders them capable of consensus, and bestows coherence upon their ongoing empirical research. Of course, this orientating role only enjoys the status of a regulative idea, and hence cannot on its own furnish a secure or universal criterion. In the context of the connection between correspondence and coherence that Kant himself suggests, it is particularly interesting to note that he introduces a comparative concept of truth: 'The greater the number of true consequences that follow from a given concept [i.e. the aspect of coherence], the more criteria there are of its objective reality [i.e. the aspect of

correspondence]'. And he immediately goes on to speak of truth in terms of 'accordance with itself [i.e. coherence] and with experience [i.e. correspondence]' (B 114f.).

The supposed alternatives of correspondence and consensus thus appear in Kant merely as moments within a complex theory of truth in which correspondence enjoys a specifically material priority. But this presupposes that we should understand correspondence as subjective-objective in character and relinquish the attempt to find a secure and universal criterion of truth. It is through insight into the character of truth, and not by virtue of any thematic modesty, that the first *Critique* contents itself with investigating (transcendental) conditions which tell us when we may legitimately raise truth claims and when not: there, on the one hand, we discover the 'land of truth', that of experience, and here, on the other hand, beyond all experience, we merely find the 'wide and stormy ocean, the native home of illusion' (B 294f.).

One of the most advanced contemporary theories of truth, the discourse theory developed by Robert Brandom (1994) in the spirit of American pragmatism, sets aside the (allegedly) descriptive question about the nature of truth and simply addresses the performative question about how the members of a linguistic community come to treat something as true. Like a number of analytic philosophers before him, Brandom also defends a moderate holism which combines a discourse theory (basically a qualified theory of consensus) with a coherence theory: to speak (or to know) is to justify certain propositions in terms of other propositions. To dispose over some determinate conceptual content is therefore to play a determinate role in the making of inferences (the theory of 'inferential semantics'). Language, as the totality of all propositions, thus becomes a complex structural network of reciprocal implications. Thus a parrot, even if it utters the sounds 'That is a plum' when presented with the relevant object, cannot properly be described as possessing language or knowledge. For it does not know that this utterance furnishes a reason for the further utterance: 'That is a fruit and not a nut'. But whenever we make or contest a certain claim, according to Brandom, we are navigating a normatively structured 'space of reasons' which we already share with the whole community of discourse and language.

If we ignore the framework of the specific philosophy of language involved, it is clear that Brandom's basic idea concurs with Kant's fundamental thesis that it is only through the understanding, the faculty

responsible for the giving of grounds and reasons, that we can explore the 'land of truth' (B 294). From the perspective of the first *Critique*, on the other hand, two of Brandom's other claims inevitably appear problematic: namely that we know the world as it is in itself and that there is no already given, even if conceptually unstructured, world of sensible intuition. For if we merely and exclusively navigate a world of reasons, we can produce only analytic rather than synthetic propositions. If we relinquish these two claims, then Brandom's pragmatic theory of discourse appears as a sophisticated variation of Kant's Copernican theory of correspondence: the space of reasons is comparable to the world of the understanding, one that, without the domain of sensibility, would remain a purely subjective form of thought, one incapable of acquiring any objective knowledge of the world.

Brandom does not, of course, shirk the relevant question as to how the community of discourse succeeds in reaching out to that external realm that is always indispensably implied and acknowledged in propositions that are oriented towards truth and objectivity. But his answer, content as it is with simply distinguishing between speaker and interpreter, in the last analysis still remains within the intersubjective world of language and does not really succeed in establishing a relation to the objective world. In response to this question Brandom (1999) rightly claims that he is solely concerned with the *use* of our available concepts, including such things as principles and schemata. The original title of his book *Making it Explicit* reveals this modest enterprise as a deliberate programme, something that is somewhat obscured by the German translation of the work under the title of 'Expressive Reason', though it is clearly indicated once again in his more recent book *Articulating Reasons* (2000). Essentially concerned with developing what we could describe as a fundamental hermeneutics, Brandom merely undertakes to clarify and illuminate the way in which competent speakers actually proceed in interpreting experience. He thus contents himself with a (new form of) hermeneutic circle, thereby succeeding in clarifying the praxis of argumentation to a considerable degree, but failing to ground the claim to truth or objectivity that belongs to the praxis of grounding itself. Compared with the first *Critique*, Brandom avoids the two more radical questions posed by Kant. The first asks how the understanding (or the community of discourse in Brandom's terms) can go out beyond itself to sensibility and the (entirely unstructured) external affection involved in

the latter. The second asks whether we can avoid acknowledging something like a transcendental grammar, namely a set of indispensable but pre-empirical fundamental concepts.

12.3 A Critique of Naturalism

The view that empirical knowledge must be traced back exclusively to natural circumstances and states of affairs, which should themselves be investigated in entirely empirical terms, would be described today as naturalism¹, and the programme associated with it as the project of naturalisation (cf. Quine 1971²: Chapter). Naturalism as a general approach involves a large family of related views and perspectives (for the older debate cf. Kornblith 1997³ for the more recent debate cf. Keil/Schnädelbach 2000), though most of these are largely irrelevant for a theory of knowledge conceived as a contribution to what we have called fundamental philosophy.

The various forms of genetic naturalism, in particular, are all quite unproblematic from the point of view of the philosophy of knowledge. The kind of universal genetic naturalism that is concerned with knowledge in general explains the emergence (the genesis) of knowledge on the basis of purely natural factors, such as certain dispositions and potential abilities, which have developed phylogenetically and ontogenetically in the course of nature. This general approach has acquired increasing significance and visibility through the achievements of the relevant cognitive sciences. There is no problem in principle with this approach which poses no special challenges for a philosophy of knowledge, as Kant himself, with his talk of 'seeds and dispositions' (B 91), would also accept. Nor is any special challenge posed by that kind of genetic naturalism, a variant of epistemological psychologism, which concentrates not upon the justification of claims and propositions, but upon the relations between the belief states of individual empirical subjects (cf. Koppelberg 2000; for anti-naturalist arguments this position cf., amongst others, Bezuidenhout 1996). It is noteworthy that this approach draws its examples not from the sciences, as Kant does in relation to mathematical physics, but typically selects questions from the everyday world, such as people's opinions or beliefs concerning who was probably responsible for a murder. Where we are concerned with the origin of personal opinions, with what leads people to maintain or to change them, it is obvious that specific psychological factors

are involved. But when our opinions or beliefs are relevant to issues of right or justice, in relation to the statements of a witness in court for example, such psychological factors must of course be bracketed out in turn. For specific opinions or beliefs about someone or something may have been inspired merely by hearsay. Before the court, however, we are supposed to pay due regard only to objective arguments and considerations that are independent of such beliefs.

A philosophy of knowledge is not directed, therefore, against genetic naturalism, but only against that further form of 'logical' naturalism which recognises only natural factors as relevant even with respect to the issue of validity. It is astonishing to note that this kind of naturalism still typically takes Descartes as a principal point of contrast (for example Bieri 1981: 20f.; Kornblith 1999), almost as if, after three centuries of philosophical reflection on the problem of knowledge, even the contribution of Kant's *Critique* could effectively be ignored. For Kant's theory is explicitly anti-Cartesian, although it is also uncompromisingly anti-naturalist, as we can clearly see from the three commitments to autonomy it involves. Firstly, Kant's theory addresses an independent issue in its own right: the pre-empirical conditions of empirical experience (its thematic autonomy). Secondly, assuming that these conditions can be identified, it furnishes an autonomous domain of investigation independent of any empirical science, such as physics, biology and psychology (its disciplinary autonomy). Thirdly, these forms of thematic and disciplinary autonomy are only possible on the basis of a twofold non-empirical procedure: the demonstration, at once metaphysical and transcendental, of the relevant pre-empirical conditions (methodological autonomy).

The naturalist philosopher interprets the positive self-understanding of the anti-naturalist wholly negatively, as a rejection of any co-operation with the cognitive sciences from the enormously developed experience of which there is clearly so much to be learnt. But in fact there is no such general rejection, except with respect to a single narrowly-focussed, but nonetheless fundamental, question. This question enquires back beyond the problem with which most naturalist thinkers are principally concerned, back beyond the structural elements of scientific praxis such as induction, hypothesis-formation, explanation and specifically formulated theory. The theory of knowledge, as it is framed by fundamental philosophy, asks whether empirical experience is constituted through identifiable pre-empirical aspects.

It is clear that empirical experience itself cannot answer this question. How could one ever come to an empirically based decision concerning such pre-empirical aspects? Logically speaking, objective knowledge is a normative concept which cannot be redeemed through the descriptive propositions of the empirical sciences if we are to avoid the naturalistic fallacy of deriving an 'ought' from an 'is'. How could empirical experience strengthen or contest the insight that the fundamental unity of thought capable of truth is an articulated whole, a statement or proposition, that 'truth' implies a knowing of the actual world, a knowing which involves the essential co-operation of concepts and intuitions? Again, if a naturalistic theory of knowledge investigates the process which promises to yield true beliefs (Goldman 1986: 2), the anti-naturalistic theory of knowledge elaborated by fundamental philosophy is concerned with answering the prior normative question what 'true' signifies in this connection, with identifying the theoretical factors of validity which are necessarily presupposed with regard to all true claims or assertions.

From the perspective of the first *Critique*, logical naturalism can only be regarded as another form of empiricism that can therefore only appear implausible to the extent that we find Kant's Copernican Turn convincing. Kant makes no attempt to counter this position by appeal to factors beyond nature itself (what Kant calls 'hyperphysical' considerations) which he explicitly discredits as 'enthusiasm' or condemns as a manifestation of 'idle' reason (B 801)². Insofar as he only recognises exclusively natural explanations for the events in nature he can even be said to defend a methodological naturalism, though one that is grounded in an epistemological anti-naturalism: pre-natural factors are constitutive for natural explanations, including the exclusive right which they claim for themselves, and pre-empirical factors are constitutive for empirical experience.

The 'Aesthetic' has already presented the first basic argument against logical naturalism: the essential bond between experience and the two pure forms of intuition. While the further specific determination of the latter depends on experience, their fundamental form does not. The conclusions that have also been reached in the 'Analytic' only serve to strengthen this original counter-argument. For even if some of the detailed and specialist criticisms of Kant may be justified, he has nonetheless clearly revealed three further pre-empirical elements which are constitutive for empirical experience: the synthetic

achievements of the 'I think', the categories which confer determinacy upon this synthesis, and the transcendental schemata which permit us to apply the categories to appearances in general.

All these elements are relatively formal, and thus materially weaker in character than many naturalists assume before proceeding, quite understandably, to raise certain naturalistic objections. With respect to intuition, for example, the 'Aesthetic' has merely shown that spatiality and temporality as such enjoy pre-empirical validity. And with respect to time the chapter on the 'Schematism' has done the same for the four further options of the time-series, the time-content, the time-order and the scope of time. And in the discussion of the 'Principles', with respect to substance and causality for example, the pre-empirical element will prove so slender that co-operation with the cognitive sciences is not merely useful, but actually demanded as far as 'everything else' is concerned.

Notes

1. The naturalist programme originally derives from the associationist psychology of the 18th and the specific psychological researches of the 19th century (cf. Hatfield 1990). Kant himself employs the expression 'naturalism' in a different sense from its contemporary meaning. In Kant it refers to a position that is intrinsically hostile to reason and rejects all scientific enquiry (cf. *Logic*, IX: 26): an attitude for which 'nature on its own suffices' (*Prol.*, Section 60; cf. B 883) and which complacently describes itself as a sound and healthy form of reason.
2. In the *Dreams of a Ghost-Seer* (II: 331) Kant had already claimed that the appeal to 'immaterial principles' is simply an 'expedient of idle reason'.

Part IV

Transcendental Laws of Nature

The end of the 'Analytic' also presents its systematic completion. The constructive culmination of the first *Critique* lies in the system of synthetic principles with which Kant develops the genuinely philosophical theory of science which he began to unfold in the 'Aesthetic' and the chapter on the 'Schematism' and completes with his conception of transcendental laws of nature. It is a conception which may easily provoke objections from the natural scientists themselves since it approaches nature from a perspective which no longer falls within the sphere of competence which has been increasingly extended, and sometimes imperialistically demanded, by the practitioners of natural science. For in Kant's view it is the philosopher, rather than the natural scientist, who is ultimately responsible for articulating those 'original laws' (B 263) which explain how there can be a science of nature at all, and thereby how this science assumes the specific and basic form that it does, one essentially involving, for example, the mathematical formulation of causal laws. This initially provocative claim can nonetheless be accommodated within the overall secularising tendency of the modern age. Descartes and Leibniz, the two philosophers who made such important contributions to mathematics and the physical sciences, both still justified the mathematical approach to nature by reference to God. Thus Descartes ultimately relates the basic laws of nature (*Principia philosophiae*, II: 36–42), and indirectly the mathematical structure of the world as well (*Le monde*: 31–3), to the attributes of God himself. Similarly Leibniz notes in the manuscript *Dialogus* of 1677 (*Philosophische Schriften*, IV: 30): 'Cum DEUS calculat et cogitationem exercet, fit mundus' [The world comes to be through the calculating and thinking of God]. And Newton also

insists upon grounding ultimate truths in the nature of God (*Principia mathematica* 1713²). It is really only with Kant, who was neither a mathematician nor a physicist himself, that all theological foundations of this kind were finally repudiated. For Kant declares that mathematics is the 'master of nature' (B 753) and claims that 'in every specific theory of nature we can only encounter *genuine* science insofar as we encounter mathematics within it' (*Foundations*, IV: 470); cf. also *Monadology*, I: 475, where Kant already argues that there is no scientific knowledge 'without the mediation of geometry').

Though some later critics have regarded the causal-mathematical cognition of nature, or at least the dominance of this conception, as less than entirely rational, Kant sees it as the work of reason itself. This view naturally provokes a threefold objection: why should the essential character of science be grounded (1) exclusively upon mathematics, (2) exclusively upon causal explanation, and (3) exclusively even upon Newtonian physics as the once paradigmatic case of science? Has Kant simply fallen victim to a dogmatic 'physicalism' or perhaps even 'Newtonianism' which has long since been readily abandoned in the subsequent history of science and philosophy? We shall examine the two 'mathematical' principles (Chapter 13) and first two 'dynamical' principles (Chapter 14) that Kant presents, and discuss these objections as we proceed (as well as in the following interim assessment in Chapter 15).

CHAPTER 13

MATHEMATISATION

13.1 Transcendental Grounding Principles

The transcendental schemata permit the actual application of the categories to experience. The ‘System of all Principles’ develops the most general propositions which the pure understanding is capable of furnishing upon this basis. In the strict sense of the expression *Grundsätze*, literally ‘grounding propositions’, these principles ‘contain in themselves the grounds of other judgements’, although they are not themselves ‘grounded in higher and more universal modes of knowledge’ (B 188).

Kant only discusses the principle of contradiction, the fundamental principle of all analytical judgements, for the sake of theoretical completeness and precisely as a means of profiling and contrasting his own position (B 190ff.). By means of the formulation that ‘no predicate contradictory of a thing can belong to it’ Kant wishes to reveal the methodological status of the principle of contradiction more clearly than is evident from the traditional formulation of the principle: ‘It is impossible that something should *at one and the same time* both be and not be’. For in this formulation ‘the apodictic certainty, expressed through the word “impossible”, is superfluously added’ (B 191). And the expression ‘at one and the same time’ would also limit the principle to ‘time relations’, something which is not permissible for ‘a purely logical principle’ (B 192).

Many commentators have traced this formulation of the principle of contradiction back to Aristotle, who would thus be exposed to Kant’s criticisms in this respect. Aristotle actually says: ‘It is impossible that the same thing be predicated and not predicated of the same thing at the same time’ (*Metaphysics* IV, 3: 1005b 19f.). But in this formulation the expression ‘at the same time’ [*hama*] should be read not in temporal terms, as simultaneity, but in explicatory terms, as a matter of logical equivalence (cf. Aristotle’s briefer formulation at b23f.).

Far from falling victim to Kant's criticism, Aristotle actually furnishes a dialogical demonstration of the principle through a fundamental reflection that has never been improved upon. For he draws our attention here to a minimal commitment, a certain determinacy ('this, not that'), to which we necessarily make appeal in theoretical debates and practical life alike. Someone who has embarked upon a certain path, for example, does not have to plunge into a ravine simply because he encounters one along the way. Kant does not explicitly ascribe this broader and more practical significance to the principle of contradiction, but is solely concerned to engage with the rationalist tradition of Leibniz and Wolff. Whereas these thinkers had regarded the principle of contradiction, together with the principle of sufficient reason, as a logico-ontological principle, the first *Critique* reduces it to the status of a merely formal-logical principle, and rightly emphasises that it simply provides a 'contrast' for clarifying those 'synthetic judgements with which alone strictly we have to deal' (B 189).

The crucial basic principles with which Kant is concerned consist in those fundamental and utterly universal laws of nature which make our experience of nature possible in the first place and, in the case of the *analogies*, attain the full significance of transcendental laws of nature. As rules for the objective employment of the categories, these principles arise from the application of the categories through the mediation of the schemata. They can therefore be derived under the guidance of the table of categories itself. The four classes of the latter thus correspond to four, increasingly substantive, levels of knowledge: those of intuition, perception, experience, and empirical thought in general. The first three levels prefigure the initial stages of Hegel's *Phenomenology of Spirit*: sense-certainty, perception, and understanding. But whereas Hegel treats these principally as preliminary stages which fail to live up to the elevated claim of (absolute) truth, Kant recognises the truth that belongs to these different levels in each case and thus provides his own theory of the a priori with a sharper definition.

The four forms of knowledge correspond to four different kinds of a priori certainty or 'evidence'. Thus intuition refers us to 'axioms' and perception refers us to 'anticipations'. And both levels involve an 'intuitive' certainty, one that can be exhibited in relation to sensible intuition. That is why Kant describes these principles as 'mathematical'. Experience, on the other hand, corresponds to the 'analogies', while empirical thought in general corresponds to the 'postulates'.

And both these levels share that purely ‘discursive’ certainty that can only be expressed through concepts. The second group must fulfil the difficult task of establishing a necessary relation between events which are nonetheless merely factual (contingent) in character. Kant describes these principles as ‘dynamical’ because they determine the relations of appearances in time. Since they are directed, for example, to the relations of substance and accidents, or to causal relations, they furnish what Kant elsewhere calls ‘the authentic laws of nature’ (*Prol.*, Section 25), and thus demote the mathematical principles to a preliminary level. On the other hand, it is the latter which possess a greater, namely constitutive, significance, whereas the dynamical principles must content themselves with a regulative significance.

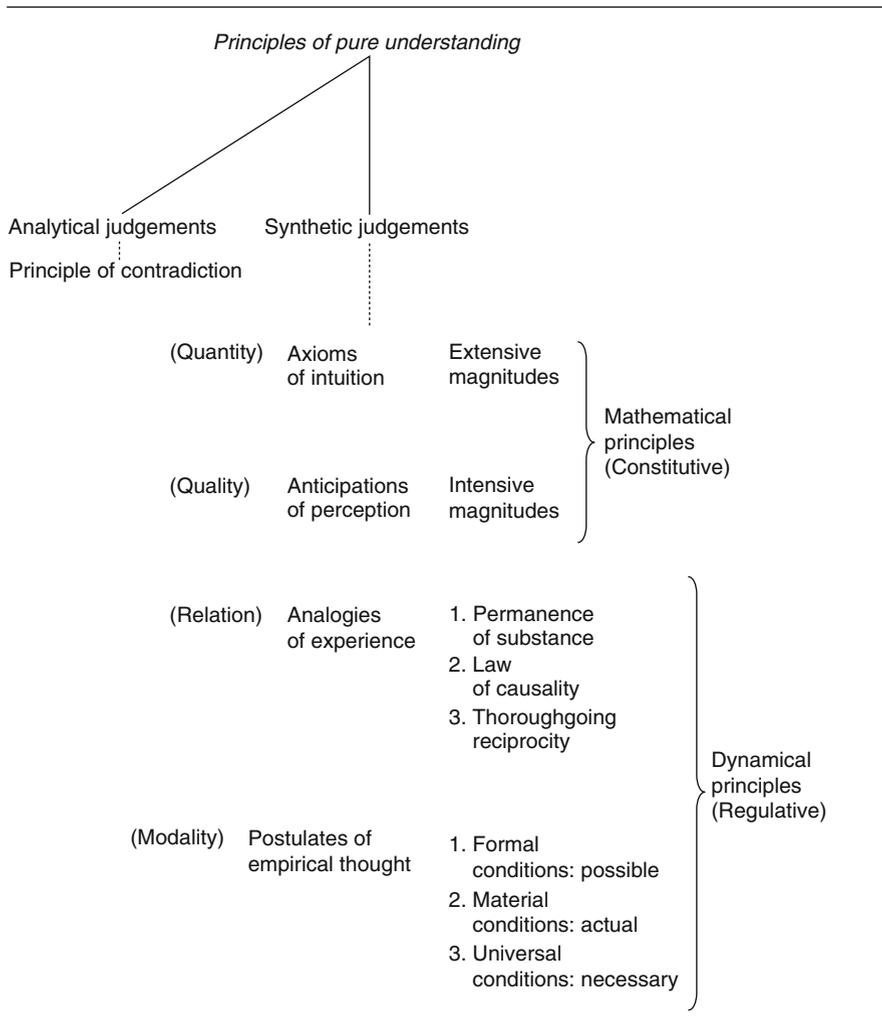
Kant’s transcendental principles do not consist in the four kinds of first level a priori, namely the axioms and anticipations etc., but in the a priori that underlies the latter. This meta-level status relieves the first *Critique* of making overambitious claims as a philosophy of the natural sciences: since the principles consist in a second level a priori, they can exhibit an a priori validity of their own, even if the elements of the first level, the axioms and anticipations, cannot be confirmed as a case of the synthetic a priori. Thus Kant’s transcendental laws belong to what we may describe as a fundamental philosophy of physics, that is, to a theory of science at the second level, one which is bound neither to the validity of a particular theory of science in the usual sense of the term nor to the validity of certain specific physical assumptions about the world.

In accordance with his procedure in the chapter on the ‘Schematism’, Kant introduces a single example for each of the mathematical principles, and three examples for each of the dynamical principles, thus significantly enriching the substantive content of the first *Critique*. With respect to the analogies and the postulates, therefore, Kant makes a transcendental claim not only for their common underlying principle, but also for each specific analogy and each specific postulate (Table 13.1).

13.2 Intuition

The theory of mathematics has represented a distinctive component of philosophical thought since the times of Plato. In the *Republic* (X: 602d–e) he emphasises the processes of measuring, numbering

Table 13.1



and weighing as welcome means of countering errors and deceptions with regard to the quantity, number and weight of things as encountered in experience, and in the *Timaeus* (53c–5c) also plays a highly significant role in the general argument. According to an ancient topos expressly invoked by Galileo the ‘book of nature’ is written in mathematical characters (*Il sagggiatore*: 229). And Wolff also maintains

that there is nothing in things that is incapable of furnishing mathematical knowledge (*Ontologia*, Section 756). Kant actually continues this tradition in a new and original manner. But since many subsequent thinkers, such as Fichte, Hegel and Schelling, and especially Marx, Schopenhauer and Nietzsche, expended little reflection upon the question of the mathematisation of nature, Kant's mathematical principles exerted hardly any significant philosophical influence. Even the commentators on Kant have rarely discussed the question in any detail (for the relevant literature cf. Klemme 1998: 265). And modern philosophical reflection on the mathematical sciences of nature is generally so strongly focussed upon contemporary problems that it also overlooks Kant's transcendental thesis that the concept of magnitude is constitutive for nature, and that mathematics as the science of magnitudes is therefore constitutive for our knowledge of nature, and that in two respects.

This 'claim on behalf of mathematisation' that is explicitly raised in the first *Critique* appears both modest and immodest. As far as applied mathematics is concerned, Kant contents himself with a quantification which he nonetheless emphatically claims is indispensable: objective assertions concerning intuitions and perceptions must involve specific quantitative magnitudes. They cannot content themselves with describing something as tiny, small or enormous, for example, but must determine it as a specific plurality with respect to unity, and thus employ the relevant mathematics to define it precisely.

The corresponding proof, presented specifically in relation to intuition and perception, presupposes in each case an act of abstraction which explicitly separates formal intuition from material sensation. The proof itself is presented as a syllogism. In the context of Kant's first proof a two-part major premise initially reminds us that space and time necessarily underlie all appearances as the pure forms of sensible intuition (major premise 1). The second part of the major premise connects this with the insight derived from the 'deduction' that the determinations of space and time rest upon the synthesis of the homogeneous (major premise 2). The minor premise identifies consciousness of this homogeneity with the concept of a magnitude which thus yields the conclusion that appearances are extensive magnitudes since as 'intuitions in space and time they must be represented through the same synthesis whereby space and time in general are determined' (B 203).

The basic idea is quite clear: if we abstract from everything except for intuition, then appearances, whether they be empirical or pure (mathematical), possess a certain temporal and spatial extension. This extension is not merely subjective – in the way that a building appears to me as small or large, or an event as short or long – if we set aside all elements that are dependent upon the empirical judging subject and supply the relevant spatial and temporal measures valid for the object, the magnitudes of extension which constitute a whole composed of parts ($3 = 1 + 1 + 1$). Although this additive character is present in every intuition, one cannot – according to Kant's transcendental claim – intuit this character itself, but must rather contribute it on our own part. The questions concerning how an intuition is to be localised in spatio-temporal terms, what specific measure is involved, what form it assumes, and what mathematics is appropriate for determining it, can only be answered partly in mathematical and partly in empirical terms. But the fact that intuition throws up precisely such questions already exhibits a pre-mathematical and pre-empirical validity. Thus while philosophy raises the relevant kind of question, it is physics which decides, by reference to mathematics, both the kind of answer and the proffered answer itself.

The basic content of the first principle, taken with that of the second, presents mathematisation as a transcendental law of nature, or, more briefly put, as transcendental mathematicisation. This must be strictly distinguished from the theory of the pure forms of intuition as the precondition of geometry and arithmetic, that is, of transcendental mathematics. The 'Aesthetic' is concerned with mathematics, while the chapter on the 'Principles' is concerned with physics, a physics which however, according to the first two principles, necessarily proceeds in a mathematical manner. One of the required sciences, namely geometry, describes its fundamental principles as axioms. Kant regards the latter as 'synthetic a priori propositions' (B 205) and takes his examples, as we might naturally expect, from the Euclidean geometry that was familiar in Kant's time. Since the history of science has already relativised the supposedly a priori status of such geometry, as we have noted, one might be also tempted to regard the mathematisation which Kant describes as intrinsically unjustified. But Kant's first fundamental principle, which is indifferent with respect to Euclid's axioms, is limited to the meta-proposition that all intuitions, as a matter of specific spatio-temporal extension, necessarily possess a quantitative character as extensive magnitudes.

This meta-proposition has two sides to it. Firstly, with respect to mathematics, it is ‘not itself an axiom’ but rather ‘the principle of the possibility of axioms in general’ (B 761). It is thus a meta-axiom, one which does not make specific mathematical axioms possible, but one which rather makes ‘pure mathematics . . . applicable to the objects of experience’ (B 206). As a meta-axiom of physics rather than of mathematics, it does not belong in the ‘Aesthetic’, but rather completes the argument of the ‘Analytic’ that commences with the theory of the categories and is continued in the chapter on the ‘Schematism’. In regard to the quantitative character of objective intuition we are concerned with a meta-axiom that is not transcendental-*aesthetic*, but transcendental-*logical* in nature.

Generally speaking, mathematics is valued for the stringency of its demonstrations, and particularly with reference to the precision of measurement which its procedures make possible. Both these arguments pay no regard to the specific character of the objects to which it is applied, and the first argument also clearly expresses the priority of method which is typical of the modern age. Kant welcomes ‘the complete precision’ of mathematics (B 206) as a fortunate ancillary development, but he does not specifically deploy it as an argument and makes no reference at all to the stringent character of mathematics. Instead of appealing to such external arguments, he grounds the process of mathematisation in the essence of the object: *insofar* as nature consists in intuitively given, and thus in spatio-temporally extended, data, then objectivity is necessarily bound to quantity, and quantity in turn is bound to extensive magnitudes. Every objective intuition is therefore a case of ‘applied’ mathematics. While Kant’s further claim that mathematical representations of space are ‘undeniably’ valid for empirical intuition (B 206) certainly overestimates the mathematical contribution, it also underestimates the contribution of experience here. Instead of attempting to define physical space directly, mathematics merely furnishes options for different theories of space from amongst which physics can select in accordance with specific empirical considerations (cf. Chapter 7.3 below). But this secondary correction of Kant’s argument does not affect his principal insight that this process exhibits an a priori character in two respects. *That* we must cognize nature in mathematical terms is a transcendental a priori, while *which* mathematical language our cognition of nature deploys is a scientific a priori. The first *Critique* merely justifies a certain type of language, such as geometry for example, but this still allows experience

the right to determine, within the mathematical options, the language which is actually most appropriate.

13.3 Perception

Perception is described by Kant as a representation that is accompanied by sensation. Sensation furnishes the material stuff or 'matter (the physical element)' (B 751) through which appearances acquire, in addition to spatio-temporal extension, properties such as colour, hardness and warmth which authenticate reality in the literal sense of substantive content. Kant's principle of perception (cf. Maier 1930: 58ff.; Paton II: 134ff.; Heidegger 1962: 160ff.) once again presents magnitude as constitutive for the object. And thus once again mathematics is required, not for its stringency or precision, but on account of the objective character of the object. In order to derive an objective judgement from our subjective sensation of a room as cold or warm, we must determine the temperature, and this in turn will consist in an intensive magnitude or 'degree of reality' (B 414) such as 15° C.

Thus although it is an empirical datum, sensation is bound to an a priori precondition or 'anticipation', as Kant calls it. A translation of the term *prolepsis* in Epicurus, the expression designates a type of sensation which underlies the different individual sensations as their common ground. But whereas Epicurus recognises only common empirical features such as brightness, loudness or heaviness, Kant discovers a pre-empirical moment even for sensations, that is, for something utterly transitory and changeable. This is intensive magnitude which Kant defines as a 'degree of influence' on the senses (B 208): in terms of its strength every sensation can be located on a scale. The scales are certainly different in accordance with the different sensory qualities, such as brightness, loudness or heaviness, which is why we must speak of anticipations in the plural and recognise that the strength of the qualities in question is entirely a function of experience. But the principle involved remains one and the same throughout: 'In all appearances, the real that is an object of sensation has intensive magnitude, that is a degree' (B 207).

More specifically, Kant also claims that sensations are strengthened or weakened in a continuous fashion, without thereby, according to the second part of this claim, entirely vanishing. One might initially

think that the first part of his claim is effectively challenged by the recognition of fundamental discontinuity in the context of quantum physics. But since Kant's assumption of continuity is not physical in character, it is not contravened by these revolutionary developments in the science of physics. It is quite true that his assumption is not purely transcendental in character either. But the unproblematic, but essentially theoretical mathematical, claim that 'of magnitudes in general we can know a priori only a single quality, namely, that of continuity' (B 218), is directly connected with the further and problematic thesis that continuity is *eo ipso* valid for physical reality. For in fact, while a pre-empirical reflection can certainly determine the quality or continuity of magnitudes, only empirical experience can decide whether continuity is also always encountered in nature.

According to a further objection to Kant's thesis of continuity, we can easily imagine a world in which there are no differences of intensive degree, where sensations are either simply present, with no intermediate states or phases, or simply absent (Walker 1978: 95f.). In such a world objects would be either heavy or weightless, either illuminated or unilluminated, so that while the relevant sensations would indeed possess a certain strength, the latter would always remain exactly the same. Since we can clearly imagine a world with sensations of unvaryingly identical strength, the differentiation of intensity to which Kant refers cannot be an a priori truth. The question as to what specific kinds of sensation there are is not a pre-empirical question either. But Kant does not claim that it is. He merely claims that sensations, of whatever kind, possess some well-defined strength or 'degree'. If this were not the case, one could never make the following twofold claim to objectivity: that my present sensation of brightness or warmth has the same strength as an earlier one, and, above all, that both concur with the sensations of all other subjects precisely because they refer to the relevant object and are not therefore simply associations on the part of the particular subject.

The second part of Kant's claim – the rejection of a space utterly devoid of sensation, of an absolute emptiness – is grounded in the first *Critique* by an appeal to the 'essence of empirical sensation. If the formula 'negation = 0' were valid, materially substantive or empirical sensation would forfeit all content (B 209f.). According to the further argument provided in the *Prolegomena* (Section 24), it is always possible to conceive ever smaller gradations between any given degree of light

and complete darkness, or again between any degree of heat and complete coldness. No perception therefore could exhibit a total absence of determinacy. Neither of these arguments simply rejects absolute emptiness. What Kant does reject, and rightly, is the possibility of an object of perception with no sensory intensity at all. As a factor of knowledge that involves spatio-temporal extension, perception can never exhibit, either mediately or immediately, 'a complete absence of all reality in the field of appearance' (B 214). With respect to the second principle, Kant is not interested in the question whether it is possible to discover the smallest physical unit of sensation, like a light-quantum for example. What he wants to claim is that absolutely empty space or absolutely empty time cannot be demonstrated empirically. For that would require something self-contradictory: a sensation devoid of sensation. Sensation alone is responsible for intensities, and there can be no sensation in the case of absolute emptiness.

In the *Prolegomena* (Section 24) Kant speaks specifically of a '*mathesis intensorum*', which raises the question whether the mathematics of sensation differs in any way from the mathematics of intuition. Does the mathematics of sensation perhaps operate with ordinal (I, II, III, ...) rather than cardinal numbers (1, 2, 3, ...) since an expression like 'twice as large', which is perfectly intelligible for extensive magnitudes, seems to create difficulties in the context of sensations of sound, colour, and temperature? (cf. Walker 1978: 96 and 185, footnote 11). Kant's chapter on the 'Principles' does not draw any specific distinctions in this respect, but speaks simply of 'numerical magnitudes' or of the 'degree of sensations of sunlight' which can be determined 'by combining some 200,000 illuminations of the moon', as Kant specifically (and fairly precisely!) observes (B 221). And in the *Prolegomena* Kant clearly regards this *mathesis intensorum* as a secondary 'application' of mathematics rather than as a second kind of mathematics. The *mathesis extensorum* quantifies spatio-temporal extension that is devoid of sensory content, and the *mathesis intensorum* quantifies sensations under abstraction from their extension. The latter is therefore indeed a mathematics of non-extended magnitudes, but it can still employ the same kind of cardinal quantification as the former. The difficulty of determining the precise meaning of a doubly strong intensity, for example, is not a task that falls either to philosophy or to mathematics.

If we consider physics, as a science responsible for investigating both extension and sensation, we actually find exactly what Kant's mathematical principles would lead us to expect. In thermodynamics, for example, the homogeneous systems of gases, liquids and solids involve magnitudes which are either extensive, with respect to energy, mass, capacity for heat, entropy, volume etc., or intensive, with respect to the density of energy, of micro-particles, specific heat, temperature, pressure (cf. Fließbach 1995²: 138). While the task of philosophy is to ground the possibility of the search for such magnitudes, the task of physics is to undertake the search itself and address the question as to which and how many such magnitudes there are.

CHAPTER 14

PHYSICALISATION

The sequence of the principles corresponds to four increasingly complex levels of knowledge. In intuition we are confronted simply with spatio-temporal magnitudes which make no explicit claim to objective reality, in perception we now encounter sensory contents which furnish substantive reality, which are then explicitly connected with one another in experience, and which, at the final level of empirical thought, are completed in the form of cognition proper. Within the third level of knowledge experiences in the plural sense are limited to specific areas of nature, such as light, heat or sound, while 'experience' in the singular sense that is so important to Kant embraces nature in its entirety. Both senses together constitute the concept of experience in the narrower sense, experience as one of the four epistemic levels, as distinct from the broader concept of experience which, as the sum of all knowledge (B 296), includes all four levels. Experience in this sense is directed to the world in the broad sense, the 'sum of all appearances', which for Kant also includes the world in the narrower sense, the 'mathematical whole' of all appearances, as well as nature, understood as the world 'so far as it is considered as a dynamical whole' (B 446). Thus the mathematical principles are concerned with the world in the narrow sense, while the dynamic principles are concerned with nature.

Experience in the narrower sense ensures that our knowledge is more than an aggregate of data, like a heap of sand, in which the rich abundance of perceptions simply offer themselves, like individual grains of sand, without connection or relationship with one another. Experience in this sense establishes internal connections until finally, as experience in the singular, it forms the utterly comprehensive interconnection of nature as a single whole. The connections in question do not derive from perception, but are the contribution of the

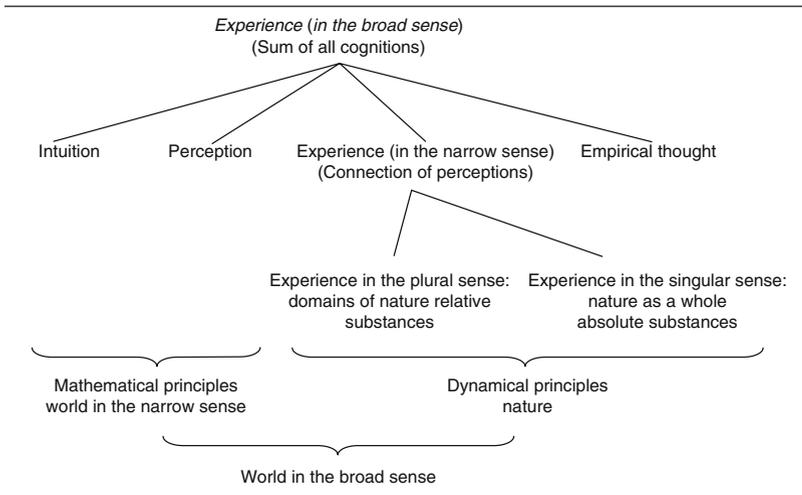
understanding working in accordance with the categories of relation, or more precisely, with their schemata. On account of their a priori character they 'always carry necessity with them' so that 'experience is only possible through a representation of necessary connection of perceptions' (B 219).

The term 'analogy' (from a Greek word for 'relationship'), which Kant uses to characterise these principles of connection, is derived from mathematics. In mathematics the term designates quantitative equivalence, either as an arithmetical analogy (the equation ' $a : b = c : d$ ') or as a geometrical analogy (the equation ' $a : b = b : c$ '). But Kant is concerned with the 'qualitative' equivalence in the relations of perceptions (p) or the corresponding events. Two accidents thus relate to one substance in accordance with the geometrical analogy ' $p_i : p_j = p_j : p_k$ '. And the two-term relations of cause and effect relate to one another in accordance with the arithmetical analogy ' $p_i : p_j = p_k : p_l$ '¹

Just as we can discover the missing term from the given terms of an mathematical equation, such as ' $1 : 2 = 2 : x; x = 4$ ', so in experience too we can seek out the missing element, the event as yet unknown, in accordance with the relevant 'analogy'. The individual events in their own right, through their connection of spatio-temporal extension and sensory intensity, already furnish an objective thing. That is why the analogies have a merely regulative rather than constitutive significance. On the other hand, the particular object of experience does not consist in individual events, but in the connection of these events. In this regard the analogies do possess constitutive significance because there can be no connection, and consequently no object of experience, without them. Since the analogies remain merely regulative in relation to the objective individual events, we could say, in order to do justice to both aspects, that they possess a 'regulative-constitutive' significance. As far as the principles of pure understanding are concerned, it is true that only the mathematical principles are constitutive, while the dynamical principles are regulative (B 221f.). But later Kant himself clearly indicates that the dynamical principles are regulative merely in respect of intuition, while they are 'constitutive in respect of *experience*, since they render the *concepts*, without there can be no experience, possible a priori' (B 692).

Obviously the missing element can only be discovered if, as in the case of the mathematical equations, it is derived from what is antecedently known. From the perception of melting wax, for example, we may infer that warming is its cause ‘in conformity with a rule, that is, of necessity’ (B 239). The sequence of the two events, first the warming and then the melting, is only objective if it is not simply traced back to the perceiving subject, but is located ‘objectively in time’ (B 219). But since time itself cannot be objectively perceived, the objective connection here can only be ascertained through rules governing connection itself. Kant sets out certain principles or ‘analogies’ for these rules. In accordance with the three modes of time, he distinguishes three analogies: the principle of substance with respect to permanence, the causal principle with respect to sequence, and the principle of reciprocity with respect to coexistence. Reflection upon experience justifies the order in which these principles are presented: in order to recognise reciprocal and coexisting causal relations (principle 3), one must already grasp sequences of events as causal effects (principle 2), which already requires us to recognise alterations in a permanent substance (principle 1) (Table 14.1).

Table 14.1



14.1 Substance: Permanence

The first principle plays a key role not only in physics and indeed our everyday experience, but also in philosophy generally, especially in matter of ontology and the question concerning the immortality of the soul. But two significant objections arise almost immediately here. Firstly, presenting the permanence of substance as the condition of objective knowledge seems to reflect the very kind of 'substantialist' ontology that Kant's Copernican Turn was intended to discredit. But in fact Kant had already abandoned the 'substantialistic concept of substance' long before the first *Critique*, namely in his *Physical Monadology* where he defined the smallest particles of nature in extremely modern terms as 'space-filling force' (I: 482). Secondly, the principle of permanence appears to contradict the new understanding of reality that is characteristic of quantum physics with its dualistic distinction between particles and waves. But Kant is operating here on a more fundamental level than contemporary quantum theory. For his own concept of substance is indifferent with regard to modern theories of physical reality and their respective elements, to waves and particles (corpuscles) etc., or to the traditional alternative account (classical physics), or to the dualistic approach adopted by quantum physics.

The problematic aspect of the first principle is not the idea of permanence itself. Since it is already contained in the concept of substance, the thesis of permanence is analytical ('tautological' as Kant says at B 227). But what appears controversial, or at least novel, is the application of the concept of substance to appearances which presuppose something permanent, i.e. a substance, in which the properties (accidents) alone are subject to change. Kant's proof consists of an assumption and five specific arguments:

Assuming the existence of changing appearances, Kant argues, firstly, that no objective claims concerning change are possible in the absence of a secure framework. Secondly, he identifies this framework as the single continuum of time within which all change is represented. What is utterly permanent is time, the permanent form of inner intuition (B 224). Yet, thirdly and decisively, this cannot be the substance we are seeking since time itself is not perceived and cannot therefore provide the foundation of changing appearances. Fourthly, therefore, the substrate of all change must be discovered in the objects of our perceptions. Fifthly, since this substrate is substance, the latter

must underlie all change in appearances as their common frame of reference. As 'existence through out all time' (B 228), substance will exist in the future and must also 'always have been'. Thus Kant has established what he was trying to prove: permanent substance is the necessary condition of bringing a multiplicity of perceptions into the unified form of experience.

In accordance with the first principle, we can recognise and identify changes and alterations, such as the melting of the wax or the drying of the street, only in relation to something which does not change or alter, namely the wax or the street. This analysis also serves to clarify the concept of change. It is not that which arises and perishes that changes. It is rather that one state of substance, in this case the wetness, follows upon another, the dryness, and hence, paradoxically, we must say that everything that changes persists and that only its state alters (B 230). The permanent, i.e. substance, is thus the changeable. But it suffers no alteration, but merely a change of properties: the dryness gives way to the wetness.

One might think that all that is required would be to assume a relational system at every given point of time (Thöle 1998: 277), i.e. the wax in the one example or the street in the other. But the wax and the street are merely relatively permanent relational systems. Thus the street, in its character as 'secure pathway for traffic', is the accident or property of a certain stretch of land, and this again is a property of the planet earth, etc. In all these cases we encounter an underlying and in the last analysis primary substance that is valid in the same way for all experience, and without which no changes could ever objectively be known.

The question concerning the precise character of this utterly primary substance is something that Kant leaves specifically to the empirical sciences. His merely regulative-constitutive principle challenges scientific research to grasp nature in terms of substance and accident and to discover what possesses accidental and what possesses substantial character. In accordance with his twofold concept of experience, with experience in the singular and in the plural sense of the term, this challenge reveals its significance at two levels. On the one hand, we must seek to identify the relatively permanent substances for certain limited areas of experience: thus in mechanics we would investigate inertial mass, while in optics or acoustics we would investigate the relevant optical or acoustical waves. On the other hand,

we also need to explore the underlying primary substance behind the former: such as the energy which physics determines, in accordance with the formula as $E = mc^2$, as the unity of mass m and the square of the speed of light c . This serves to confirm the first analogy, albeit only indirectly in an empirical rather than transcendental fashion.

On a second and no longer purely transcendental level, that of a metaphysics of material nature (*Foundations*, IV: 472), Kant introduces four concepts of matter in accordance with the four classes of categories and their corresponding epistemic levels.² But all these concepts, including a fifth concept of matter in relation to the faculty of cognition and defined as 'every object of outer sense' (IV: 481), also leave it entirely open whether matter possesses either a wave or corpuscular character or combines both.

The second edition of the *Critique* supplements the principle of permanence with the principle of conservation: the quantum of substance in nature is neither increased nor decreased (B 224). The principle of permanence thereby acquires two further aspects, the mathematisation implied by the quantifiability of substance and the constant character of the quantum. The value of this further contribution to the argument remains controversial. According to Strawson (1966: 128f.), Kant falls victim to a *metabasis* or illegitimate transition here insofar as he identifies necessary conditions of the possibility of experience with certain theoretical assumptions in physics and thus confuses a transcendental with a physical principle. On the other hand, Weizsäcker (1964 and 1971) regards the transition as one that is not only methodologically legitimate, but also entirely compatible with the most recent insights of contemporary physics with respect to the conservation of energy. Even if not all of Kant's arguments can be expressed in physical terms, the emerging development of a unified theory of physics would plausibly suggest that we might subject Kantian arguments of this kind to a serious critical examination on the part of physics.

A purely textual analysis of Kant's work does not allow us to decide which of these two interpretations does justice to the argument of the first *Critique*. The first extra aspect, that of quantification, is of course also covered by the second fundamental principle of the quantifiability of all perceptions: since Kant locates substance in the realm of quantitative perceptions, the interpretation of substance as a quantum is

quite consistent, and likewise the fact that Kant leaves the type of quantum involved as a question for physics itself. Since the broader version of the first principle also retains this methodologically required openness, it represents a legitimate extension of the argument rather than the *metabasis* feared by Strawson. But it corresponds not, as Weizsäcker assumes, to the specific law of conservation formulated in physics, but rather to a more fundamental transcendental principle which only becomes a physical law by means of further empirical determinations.

Since the ‘permanence’ of the quantum signifies the same as its ‘preservation’, is it equally easy to justify the second further aspect, that of the preservation of the quantum? There appears to be no strong argument against doing so, and therefore we can indeed, despite Strawson’s claims, formulate a principle of conservation, even though once again, precisely as a transcendental principle, it is not directly subject to critical examination on the part of physics. Both more substantive than a *principle* of permanence of substance, but less substantive than a physical *law* of conservation, it occupies a kind of intermediate position. It is only in his specific philosophical theory of nature, in the second theorem (the ‘First law of mechanics’), that Kant formulates a specific physical law of conservation. His demonstration certainly builds upon the corresponding principle of substance, but, in contrast to the latter, is no longer concerned with the epistemic concepts of substance and quantum as such, but rather with the physical concepts of ‘corporeal nature’ and the ‘quantity of matter’ (*Foundations*, IV: 541).

14.2 Causality

Like the general concept of substance, the concept of causality, the most important theme of the chapter on the ‘Principles’, also plays a major role in all three areas of everyday life, physics, and philosophy. There are, of course, certain significant objections which have been raised to the concept of causality before. According to Nietzsche (KSA: XII: 135), ‘the concept of “cause and effect”, psychologically considered, derives entirely from a mode of thought which believes that will always and everywhere exerts an effect upon will’, and cannot therefore properly be applied either to things or to appearances. Given its misleading anthropomorphic connotations, some philosophers have

attempted to banish the word 'cause' from strictly philosophical vocabulary, and according to Quine (1974: 6) the concept itself 'has no place in modern physics'. Such views have not, however, succeeded in establishing themselves. According to Patrick Suppes (1970: 5), the words 'cause' and 'causality' are widely deployed in the most advanced works on physical science, and Mario Bunge (1987: 396–423) has explicitly spoken of a 'return of causality' in this regard. And many theorists of science regard causal explanations as an exemplary expression of science as such (cf. Heidelberger 1992; Pearl 2000; Spohn et al. 2001). What is the precise perspective of the first *Critique* with regard to this central question?

1. *Reason versus custom.* Hume is of course the classical antagonist as far as Kant's theory of causality is concerned. Although the discussion of the second analogy does not mention Hume, Kant explicitly refers his own reflections on causality to Hume's position in the 'Introduction' (B 5) and the 'Doctrine of Method' (B 788), at the beginning of the *Prolegomena* (IV: 257) and indeed in the 'Preface' to the *Critique of Practical Reason* (V: 13). And in fact Kant essentially addresses the same question that occupied Hume, namely that concerning the objectivity of our perceptions. But he also places it in the broader context of our objective knowledge of nature as a whole and thereby sharpens the focus of the problem: Kant recognises the role of pre-empirical factors not only with respect to causal relations, but already in the field of intuition and perception, where Hume had never suspected such a thing. For they too operate with the schemata of pure understanding, with magnitudes, and also presuppose the pure forms of intuition. In the chapter on the 'Principles', the argument with Hume is thus raised right from the beginning, with the discussion of the mathematical principles, is continued in the analysis of the first analogy (which relates our singular perceptions to a substance that cannot itself be perceived), and reaches its substantive culmination in the discussion of the second analogy (for Kant's dispute with Hume cf. Farr 1982; Ward 1986; Rang 1990; Rohs 1992).

In the relevant discussion in the *Enquiry concerning Human Understanding* Hume himself initially ascribes a special status to causal thought, and proceeds to develop a new theory to account for it, first in empirical terms and subsequently in an expressly sceptical version. The theory is empirical since it claims that our knowledge of causal relations in general is acquired not through any a priori mental acts,

but solely from experience itself (Section IV, Part 1). But according to Hume's sceptical version, this experience is not regarded as furnishing an ultimate ground of knowledge insofar as we only ever observe sequences of events, rather than the supposedly 'necessary connexion' which is generally described as the relation of cause and effect (Section VII, Part 1).³

It is true that Hume recognises certain regularities, such as the conjunction between fire and heat or that between snow and coldness, for example. But no causal connection follows from the spatio-temporal proximity of the events in question. The idea of this connection is a product of the imagination which leads us, through customary association, to extrapolate the observed regularities and to expect, on once again encountering snow, an accompanying impression of coldness. But the snow remains something that simply transpires 'before' the latter, but fails to furnish its 'therefore' (as the Islamic philosopher and theologian al-Ghazali had already argued in part two of his *Tahaft al-falasifah* or *The Incoherence of the Philosophers* at the end of the 11th century). According to Hume, we possess no objective knowledge of causes, but merely a subjective belief in them. We are unable to demonstrate their reality, but can only entertain a subjective expectation or ascribe a certain probability with regard to them (*Enquiry*, Section VI). Nonetheless, Hume does not reject causal thinking, but simply exposes the epistemic status previously accorded to the notion of causal necessity as something problematic: 'all conclusions drawn from experience are thus consequences of custom, not of reason' (*Enquiry*, Section V, Part 1). In response to the same question concerning the source of our causal thinking Kant provides the diametrically opposed answer: it stems from reason, or more precisely, from the pure understanding. But he agrees with the specific part of Hume's thesis which claims that a concept deriving from custom or habit is 'falsely taken as objective' (B 127) and with that which argues that no such concept may be 'used over and beyond experience' (B 788).

2. *The transcendental principle.* The second analogy takes up from the first insofar as it is also directly concerned with the process of change. But the latter is no longer conceived in terms of changes in a substance ('wax melts'), but in terms of a sequence of events determined by forces: 'The sunlight causes the wax to melt' (cf. B 793 f.). Compared with this claim to necessity, and the involvement of all three principles, Hume's sceptical approach appears as a welcome case of

modesty. Strawson even affects to discover a '*non sequitur* of numbing grossness' (1966: 137) in the argument. Even those who take a neutral position in this regard prefer to place the onus of proof on Kant here. But the point of his argument is actually quite moderate: he is concerned with the objectivity of a non-arbitrary kind of regularity. If we simply assert that a sequence of events ('we start a fire, heat follows') transpires not only within the subject ('after starting the fire I feel heat'), but also in reality ('after starting the fire the temperature rises'), the second principle implies the further, and not so simple or obvious, assertion that a relation of cause and effect obtains with respect to the events in question and that the sequence involved is thus a necessary one: the heat follows necessarily upon the starting of the fire. But if, on the other hand, a fire should follow upon the increase in heat, we are then dealing with a different event, like the combustion of an object on exposure to an extreme degree of heat.

Once he has established this intermediate result, namely that the causal relation is a non-reversible sequence, Kant has also confirmed four points which are strategically vital for his argument. Firstly, he does not appeal to any given actual science, but simply argues on the basis of something already presented in everyday experience. Secondly, since even Hume casts no doubt upon the reality of such a sequence of events, Kant can assume a shared point of departure for the argument. Thirdly, he avoids the burden of proof and indeed reverses it: since our everyday experience is explicable in terms of causality, anyone who doubts the latter must provide a plausible alternative explanation of the former. But, fourthly, Hume's notion of 'custom' cannot provide one since it makes the subject responsible for the sequence in question, and this fails to explain what we are seeking to show: an objective sequence that is grounded in the events themselves. But this yields a remarkably unconventional thesis. The conventional argument asked how we could possibly make future claims on the basis of previously observed regularities, how we could possibly infer universal claims from particular assertions. Hume's empiricist response to this question is entirely convincing: such an inference is spurious and fallacious. Kant also recognises that no induction can yield anything but a relative and comparative, rather than a strict, universality (B 3f.). But he claims that a mere sequence of events cannot objectively be known unless we also proceed to assert that the first event in the sequence is the cause of the second, that the 'before' is a

‘therefore’. This epistemic status, which is an additional and necessary claim, shifts the burden of proof.

Before we examine Kant’s proof itself, we should make a point about his specific use of language. Whereas the second analogy speaks of the ‘law of causality’ in the singular, contemporary theory of science generally employs the term in the plural. It understands this in terms of a particular type of physical laws (‘events of type e_i bring about events of type e_j ’) under which it subsumes singular causal relations (‘the event e_1 brings about the event e_2 ’), and distinguishes both from the law of causality in the singular. But the first *Critique* is concerned neither with the first and lowest level, that of singular causal relations, nor with the second level, that of the rules which, in the case of extremely general laws, are also described as laws of nature, nor with the third level, that of the law of causality in the singular. The *Critique* is exclusively concerned only with a fourth level, that of the transcendental principle of causality or the (transcendental) causal principle. This amounts to a reinterpretation of the principle of sufficient reason in the context of a philosophy of nature. It can be negatively formulated: ‘nothing happens through blind chance’ (B 280), or positively expressed: ‘All alterations take place in conformity with the law of the connection of cause and effect’ (B 232).

All four levels of causality can be interpreted in two directions: the prospective approach (‘From the same causes the same effects will follow’) permits limited prognoses concerning the future, while the explicatory approach (‘The same effects have the same causes’) permits explanations concerning past events. Our (physical) causal *laws* explain different series of events as relations of cause and effect, relations without which – according to the (transcendental) causal *principle* – no series of events can be cognised as something objective. It is only with the help of a completely universal rule (B 123f.), that is, of a law of nature, that we can ultimately distinguish between dream (as something merely ‘fictitious’: B 241) and reality. But a series of appearances subjected to a rule is the schema of causality. Every objective alteration therefore implies a connection of cause and effect: if lightning is followed by thunder, then what comes after results from what comes before (in this case the discharge of an electrical field).

With respect to causality it is common to distinguish between an ontological, epistemological and a methodological interpretation of the concept. Kant does not efface such distinctions, but he relativises

their significance by insisting upon the intimate relationship between them. The causal principle is ontological in character insofar as it claims to grasp a series of events as something objective within nature itself. It is also epistemological in character insofar as it binds the objectivity of a series of events to an intrinsic causal connection, although of course the perspective of transcendental subjectivity implies that this connection must be ascribed to appearances rather than to things in themselves. Finally, the causal principle can also be understood methodologically insofar as it requires us to investigate the relevant connection empirically: in order to grasp a series of changes as objective, we must spell them out specifically in terms of cause and effect. What the specific causal laws are, and what the individual character of the relevant causes and effects consist in, is something that can only be discovered empirically. A tile that comes loose from a roof, for example, falls to the ground in accordance with the causal law of gravity. If it fails to fall, we might well be inclined to call it a miracle, but in fact there are always natural causes to be found to explain this: perhaps the tile is secured by an imperceptible thread or a magnetic metal plate, or is prevented from falling by a very powerful contrary wind for example.

3. *Relational necessity.* Even if we have followed Kant's argument up to this point, we may still be tempted to doubt the necessity which he claims for the causal connection. Hume interprets necessity in purely logical terms (as 'demonstrative reasoning') and would simply object that no conceptual contradiction is involved in the thought that nature might suddenly change, that flakes falling from the clouds, in every other respect resembling snow, might nonetheless produce in us an impression of heat rather than of cold. And this would immediately invalidate the expected sequence that the sensation of coldness will follow upon the experience of snow (*Enquiry*, Section IV, Part 2).

But Hume's example conflates apparent snow with real snow. Small and generally star-shaped crystals that are white, flaky and extremely light, though heavier than air, but nonetheless produced an impression of heat, would contradict the 'essence' of snow as frozen water droplets that therefore diffuse coldness. There could be another form of nature where water could form hot crystals, but these would not be frozen water droplets and therefore not a case of snow. But if snow is understood as frozen water droplets, then it is also necessarily connected with coldness. And more precisely considered, coldness

is not an effect of snow, but one of its (physical) determining elements. We should also note that in Hume's idea of a differently constituted nature the latter would still be determined by causal laws. If, in such a nature, water formed hot crystals which resembled snow, then heat would necessarily be produced by a shower of such crystals.

To elucidate the distinctive character of causality Kant compares the perception of a self-identical object, like the house in front of me, with the perception of a changing scene, like the ship sailing downstream (B 235ff.). Both cases involve a specific series of perceptions, although only in the first case does the order of the perceptions depend upon the perceiving subject. One may start by perceiving first the roof, then the walls and windows, and finally the base of the house, or equally one can reverse the order of perceptions, without the object thereby changing in any way. In the case of the ship sailing downstream, on the other hand, it is impossible that 'the ship should first be perceived lower down in the stream and afterwards higher up' (B 237). The refutation of Hume's position is thus presented in phenomenological terms: Kant examines our experience more closely and recognises that it implies something more than a mere series of perceptions: namely the irreversibility of the latter. Since this 'more' cannot itself be perceived, it must be an a priori contribution on the part of the subject.

Hume interprets the alleged causal necessity of the sequence of events as a modal necessity of nature, and challenges it by recourse to the modality of contingency since we can always conceive of an alternative nature where snow would habitually be associated with heat. Kant's account of the causal principle does not refer to the question of modality, a theme that is first addressed in the following 'postulates of empirical thought'. Kant is concerned with relational rather than modal necessity, with the non-reversible character of a series of perceptions. Kant does not of course deny that a ship can sail upstream. He merely claims that this case also presupposes an underlying rule of cause and effect, so that the relevant series of events (first downstream and then upstream) is a necessary one.

Let us take another example: within the same form of nature it is impossible for the flying stone to be succeeded by shattered glass on one occasion, while the shattered glass could precede the flying stone on another. It is quite possible to conceive of a nature

where the sequence in question were reversed, but even such a fundamentally different form of nature would still be subject to the causal principle. Such an alternative form of nature would not cancel the causal *principle*, but would simply replace the previously binding causal *law*. A different causal or natural law would therefore take its place. And this would also involve irreversibility. According to such a new law of nature, the glass must necessarily break before the stone flies towards it.

The science of physics does not of course content itself with the observation of such simple processes. It seeks to identify the relevant forces and will not rest until it has discovered the corresponding laws. But the basic form of the rule remains the same. This is a relation that is irreversible with respect to time: $\forall x (Fx, t_1 \rightarrow Gx, t_2)^4$, where the temporal arrow (“ \rightarrow ”) indicates irreversibility. It is therefore not enough simply to say with Wittgenstein: ‘If there were a law of causality, it could be expressed by saying “There are laws of nature”’ (*Tractatus*, 6.36). For this formulation fails to acknowledge the minimal content, namely the irreversible sequence of events, which allows us to distinguish causal laws of nature from laws of nature concerning the permanence of substance.

In order to prevent any misunderstanding, we need to distinguish three levels of argument. (1) The relational necessity (today we would say: the strictly general order) of causal laws concerns the irreversibility or directional character of series of events. (2) The first *Critique* at least does not claim that our world is necessarily determined solely by the causal laws with which we are familiar and by no others. The actual content of causal laws with respect to modality, is non-necessary or factual in character. For every series of events, if it is to be considered objective, we must necessarily assume a law governing its irreversibility, or a strictly general law of nature. (3) Finally, we must acknowledge the *transcendental* necessity of searching for causal laws in general since we cannot otherwise cognise series of events as objective.

This allows us to draw the following provisional conclusion: Kant does not emphatically reject Hume in every respect, but recognises his insights as well as his mistakes. He thinks that Hume is right to locate the causal connection ascribed to events in the subject rather than in things themselves. But he denies that we can therefore conclude that the causal connection can claim no objectivity. And of course Kant specifically challenges Hume’s concept of subjectivity. He

transforms Hume's merely empirical, culture-dependent concept of 'subjective subjectivity', and the associated idea of custom, into a pre-empirical, culture-independent concept of the 'objective subjectivity' of the pure understanding. The transcendental principle of causality accomplishes two things in this regard. It explains why the sciences necessarily seek to discover and identify causes and it confirms and strengthens the empirical character of scientific research since we cannot derive a single empirically relevant causal law from the causal principle itself.

14.3 Empirical Thought

It is only at the level of laws of nature that we have to do with specific relations. With respect to the further question concerning which laws actually present themselves in reality is entirely a matter for empirical thought. The relevant principles or 'postulates' of empirical thought are applied to the three epistemic levels we have already distinguished and ascribe the three modalities of possibility, actuality and necessity to the latter. These modalities should be understood in epistemological terms, as the conditions of experience, rather than in formally logical or semantic terms. The postulates 'add to the concept of a thing (of something real), of which they otherwise they say nothing, the cognitive faculty from which it springs and in which it has its seat' (B 286). They indicate the manner in which the concept of things 'is connected with the faculty of knowledge in general' (B 287):

(1) With respect to possibility the criterion of non-contradiction is not sufficient. As far as the governing perspective of 'empirical employment' is concerned, it is not enough to know that something can be thought without formal contradiction. For we must also be able to 'construct' the relevant object, such as a geometrical figure (B 267f.). The object must therefore satisfy not merely the formal conditions of thought, but also those of sensible intuition. If this, and only this, double condition is fulfilled, then we know we have to do with (empirically or really) possible objects.

(2) It is only sensation or perception which discloses actuality, which teaches us that something is really present. Significant natural phenomena such as magnetism, electricity, or gravitation cannot of course themselves be directly perceived. But from 'the perception of attracted

iron filings we can infer the existence of a magnetic matter pervading all bodies' (B 273).

(3) If the connection of our perceptions is 'determined in accordance with universal conditions of experience' (B 266), then the connection in question must be regarded as necessary. Kant does not claim that the contingent relations of the actual world or the laws of nature which underlie them are necessary. The third postulate has nothing to do with a formal-logical or semantic modality, with an 'absolute' necessity according to which something must be the case in all possible conceivable worlds. With respect to the empirical employment of the understanding, we are again solely concerned with the epistemological and methodological necessity that is expressed in two a priori laws of nature: 'nothing happens through blind chance' and 'no necessity in nature is blind, but always a conditioned and therefore intelligible necessity' (B 280).

Notes

1. Since there is a four and three term analogy, we should not accept the Academy Edition emendation of B 222 (III: 160, 32f.) and change 'two' to 'three' and 'third' to 'fourth'. With respect to the two kinds of analogy, in specific relation to the concept of justice, cf. Aristotle, *Nicomachean Ethics*, V: 6.
2. With regard to 'phoronomy', the theory of motion as pure quantity (and thus as an object of intuition), Kant characterises matter as 'the moveable in space' (IV: 480); with regard to 'dynamics', the theory of the quality of matter (sensation or perception), it is characterised as 'the moveable insofar as it occupies space' (IV: 496); with regard to 'mechanics', the theory of relation ('experience'), it is characterised as 'the moveable insofar as the latter as such possesses motive force' (IV: 536); finally, with regard to 'phenomenology', the theory of modality ('empirical thought in general'), it is characterised as 'the moveable insofar as the latter as such can be an object of experience' (IV: 554).
3. Nonetheless, Hume still thinks that certain propositions cannot be doubted simply because we cannot help but act in accordance with them, even though we cannot be certain of their truth. Thus it is only on the purely philosophical or epistemological level that Hume can be described as a sceptic, while on the practical level he must be regarded as a pragmatist or naturalist.
4. The formula should be interpreted as follows: 'for all x , at point t_2 later than t_1 , it holds: if at time t_1 Fx , then at time t_2 Gx '. It is important that the arrow be understood 'dynamically', namely as a temporally directed one, (prior to t_2 on account of t_1), rather than in formal-logical terms as the operator in a conditional proposition ('if ... then'). For, in formal-terms, we are dealing with a bi-conditional proposition ('precisely then, if ...') since the rule can be read both prospectively, from left to right (if we know Fx , t_1 , we can infer Gx , t_2 as the effect), and explicatively, from right to left (from Gx , t_2 there follows Fx , t_1 as the cause). But the dynamic relation here cannot be reversed: Fx , t_1 is invariably the cause, while Gx , t_2 is the effect of the latter.

CHAPTER 15

FOURTH ASSESSMENT: UNDERSTANDING AND WORLD (2)

We shall attempt to assess Kant's general argument in two double steps: an examination of his critique of scepticism concerning the external world (15.1) and of his retrospective summary of the 'Analytic' (15.2); a discussion of the transcendental laws of nature with respect to mathematics (15.3) and the principle of causality (15.4).

15.1 Contra Scepticism concerning the External World

Ever since the early modern rediscovery of the sceptical tradition of classical thought, philosophers have engaged specifically with scepticism concerning the external world: with the question whether or how we are able to distinguish an objective external world from a subjectively dreamt or merely imagined world. Kant rejects the argumentation presented in exemplary form by Descartes in the *Meditations*, including the opening argument based on the *cogito* (I doubt, therefore I think, therefore I am) and the further crucial claims that the faculty of thought inhabits the body in an essentially external way and that there is a God who will not deceive us concerning the objective reality of the world. The alternative approach that is required, however, cannot consist in a 'point by point' refutation of scepticism concerning the external world or in some single claim or doctrine, but only in a complex network of arguments. In opposition to the realist approach that prevails in contemporary thought, this network of arguments, which constitutes transcendental idealism itself, offers a significant alternative model that has rarely received the full consideration it deserves:

(1) The Copernican Turn furnishes the substantive heart of the argument. Kant undertakes to prove the basic thesis that the external

world can only be grasped as appearance rather than as a thing in itself (cf. A 369).

(2) In the context of appearances the external world is disclosed to us through outer sense. With respect to outer sense we must distinguish between space as the form of intuition and sensations as the content of intuition. The external world only acquires material content, in addition to mere spatiality, through the sensations furnished by the sense.

(3) It is quite true that Kant regards outer sense as primary. But if outer sense alone could guarantee the external world, we should expect the argument against scepticism with regard to the external world to be presented within the 'Aesthetic'. Yet the relevant argument is only furnished later, long after the discussion of the theory of sensibility, namely towards the end of the 'Analytic' in the context of the postulates of empirical thought. The location of the argument itself indicates that Kant regards the doctrines elaborated after the 'Aesthetic' – the theory of the categories, of transcendental self-consciousness, of the schematism, of the principles, in short of the understanding and its a priori elements – as necessary components of the attempted refutation of scepticism concerning the external world. Such scepticism cannot properly be refuted by reference to sensibility alone, even with respect to its combination of empirical and pre-empirical aspects.

The relevant text, which Kant entitles 'The Refutation of Idealism' (B 274–9), represents Kant's third formulation of the argument, after he had already attempted to address the problem in the 'Paralogism of ideality' in the first edition of the *Critique* and the discussion in Section 49 of the *Prolegomena* (cf. Klotz 1993; Hoyos-Jaramillo 1995; Heidemann 1998, Chapter 3). While the first edition located the argument in the 'Transcendental Dialectic', the second edition places it at the end of the 'Analytic' where it is clearly intended to counter the objections of Christian Garve and Johann Georg Heinrich Feder (published in 1782) that transcendental idealism is simply another form of 'subjective idealism'. In his reply to this charge Kant engages explicitly with two forms of what he calls 'material' or 'empirical' idealism.

(4) The 'problematic' idealism of Descartes (also described in A 377f. as 'sceptical' idealism) claims that while inner experience is indubitable ('cogito ergo sum'), the existence of external things can in

principle be doubted. Kant challenges the privileged evidential status here accorded to inner experience with the privileged status which he confers instead upon outer experience, insisting ‘that even our *inner* experience . . . is possible only on the assumption of *outer* experience’ (B 275). He argues for this conclusion on the basis of the empirically determined consciousness of our own existence, but while he agrees with Descartes that the consciousness of my existence is indubitable, he also sees, unlike Descartes, that this consciousness is itself ‘determined in time’. And this temporal reference furnishes the cardinal point in a refutation of scepticism concerning the external world which, contrary to that of Descartes, makes no appeal to theology or the idea of a non-deceiving God. The different stages of the ‘Analytic’ are also significant here, directly in relation to the principle of substance presented in the chapter on the ‘Principles’ insofar as all temporal determination presupposes something permanent in perception, and also indirectly in relation to the category and the schema of substance insofar as the principle of substance builds on both of these. The permanent that underlies perception is not empirical self-consciousness since the latter is itself only constituted by reference to the former. (Nor is it the pure ‘I think’ since this lacks the mediation with the senses that is required by the principle of substance). And this leads Kant to his decisive conclusion: ‘Thus perception of this permanent is possible only through a *thing* outside me and not through the mere *representation* of a thing outside me’ (B 275). The existence of myself, indubitably identified through inner sense, presupposes something permanent outside me, and thus the existence of external things which are not merely imagined but actual (B 275f.). Outer sense on its own is insufficient to vouchsafe an objective external world. Only outer sense in co-operation with the understanding, precisely as outer experience, can achieve this.

(5) The second type of idealism, namely Berkeley’s ‘dogmatic’ idealism which regards ‘the things in space as merely imaginary entities’ (B 274), still presupposes space as a thing in itself, an idea which Kant of course has already repudiated in the ‘Aesthetic’.

(6) The laws of nature are constitutive for outer experience. Hence Kant subsequently points out, in his ‘Observation on the Third Antinomy’, that the lawfulness of nature belongs to ‘the criterion of empirical truth, whereby experience is distinguished from dreaming’ (B 479). In the context of this discussion he adds a section entitled

'Transcendental Idealism as the Key to the Solution of the Cosmological Dialectic' (B 490f.) which effectively complements the 'Refutation of Idealism'. Building upon the discussion of the three analogies, Kant explains how the objectivity of nature is grounded in the recognition that nature, or the external world, forms a connected whole in accordance with empirical laws. Thus what is spatially and temporally represented hangs together in thoroughgoing interconnection, establishes the unity of experience, and permits us to describe what is represented in accordance with empirical laws as an actual rather than merely imagined object (B 520ff.).

15.2 Things in Themselves

With its striking opening image of the land of truth and the ocean of illusion (B 294f.), the third chapter of the 'Analytic of Principles' might seem to be the natural point of transition between the 'Analytic', the part of the work which is directly concerned with truth, and the 'Dialectic', the part which is charged with exposing illusion. But in fact Kant stays with the principal theme of the 'Analytic', the question concerning the possibility of 'general metaphysics', rather than anticipating the problem of 'special metaphysics' that is explicitly addressed in the 'Dialectic'. In the 'Appendix' on the 'Amphiboly of Concepts of Reflection', and its accompanying 'Note', it is true that we already find Kant raising typical dialectical objections and explicitly referring to 'the baseless and misleading opinions' (B 297; cf. B 302) and the 'illusion from which it is difficult to escape' (B 305) which ensue when the understanding oversteps the limits of its own domain. But these objections concern the 'concepts of reflection', namely identity and difference, agreement and opposition, inner and outer, matter and form, rather than the unavoidable transcendental illusion that arises in connection with the three ideas of reason and which is discussed in the next part of the book.

The third chapter of the 'Analytic' under discussion here, 'The Ground of the Distinction between Phenomena and Noumena', specifically consolidates for the 'Analytic' the conclusion that was initially reached in the 'Aesthetic' (Section 8): that knowledge is directed towards appearances rather than things in themselves (B 312; cf. B 518ff.). Now that the preceding argument of the 'Analytic of

Principles' has completed the task of legitimating the categories, the present chapter concentrates upon the complimentary limitation of their field of application. This question of limitation was of course already begun in the second part of the 'Deduction', but it is only now that it is specifically located within the broader horizon of an overall assessment of general metaphysics itself. A 'summary statement' concerning our right (or 'title') to claim genuine truth for human knowledge (B 295) contrasts the legitimate and empirical, as distinct from the illegitimate and transcendental, employment of the categories. Thus even before we enter upon the 'Dialectic', the 'Analytic' already furnishes a negative result with respect to traditional metaphysics: 'the proud name of Ontology that presumptuously claims to supply . . . synthetic a priori knowledge of things in general' – namely of phenomena and noumena – 'must, therefore, give place to the modest title of a mere Analytic of human understanding' (B 303). Kant even repudiates the apparently less controversial assumption that knowledge of things in themselves is possible at least with respect to pure sensibility in relation to mathematics, and Euclidean geometry in particular (cf. Section 20 of the 'Deduction'). At the same time Kant sharpens the criterion of 'sensible' intuition specifically as 'empirical' intuition: that 'space has three dimensions' (the basic assumption of three dimensions) and that 'between two points there can be only one straight line' (the axiom of parallel lines) would 'mean nothing, were we not always able to present their meaning in appearances, that is, in empirical objects' (B 299). Thus Kant distinguishes between the possibility of pure intuition and the possibility of things and argues, against empiricism, that there are indeed pure concepts of the understanding, although he also insists, against rationalism, that they can furnish no knowledge without reference to empirical sensibility (B 314).

The concept of the thing in itself that is so important to Kant here, a notion that merits nothing but 'Homeric laughter' according to Nietzsche (*Human, All Too Human* I, no. 116), is not a dogmatic vestige of metaphysics pointing towards a true world of potential knowledge that lies behind appearances. On the contrary, it belongs to those concepts without which we cannot properly understand either the possibility or the significant limits of knowledge. If we initially restrict our attention to epistemological considerations, we must distinguish two senses of the concept of a 'thing in itself' which enabled Kant to distance himself from both rationalism and empiricism:

In the older positive and ontological sense of the concept, things in themselves (noumena) as well as appearances (phenomena) could be said to belong to the world of knowable objects. While the most ambitious rationalist perspective held that human beings are capable of grasping such things in themselves, the more moderate rationalist position argued that only an understanding superior to our own is actually capable of grasping them, although we can know something of the being that knows them. Since Kant rejects both these approaches the concept of noumenon loses all positive ontological meaning here. The negative and epistemological meaning that it retains is initially directed against rationalism. Since 'our' understanding essentially depends on sensible intuition, super-sensible objects are unknowable in principle and the rationalist claim that we can know an intrinsically 'true' world that exists 'behind' the realm of appearances therefore collapses. An understanding other than our own might of course enjoy access to things in themselves and 'know its object intuitively through a non-sensible intuition', but Kant insists that we 'cannot form the least conception of its possibility' (B 312). As far as our understanding is concerned, the noumenon remains something that is utterly unknown. And yet, in contrast to empiricism, we must recognise that the concept of the thing in itself is not simply meaningless since it can certainly be thought without self-contradiction (B xxvi, footnote). It is thus a 'limiting concept' or *Grenzbegriff* that challenges the presumptuous cognitive claims that have been raised on behalf of pure thought and sensibility alike (B 130f.). In the first place, sensible intuition is 'not the only possible kind' since we can also form the concept of intellectual intuition, of an 'intuitus originarius' (B 72). In the second place, sensibility is directed to appearances rather than things in themselves. And in the third place, sensibility itself does not produce its 'data' but must wait for them to be given through sensations, the entirely undetermined ground of which is the thing in itself as a pure *x* (A 104; A 109).

But the thing in itself does not simply signify the limit of our human capacity for knowledge. For it will also acquire positive significance in the context of the theory of scientific research and, especially, of morality. It is precisely on account of the complex status of the concept of the thing in itself that Kant refuses simply to endorse either of the two currently favoured alternative approaches to this question, the 'two worlds doctrine' or the 'two perspectives doctrine'.¹ It is true that

Kant's frequent references to the thing or things as 'taken' or 'considered' in itself or in themselves, or his allusions to the object in its *twofold* meaning, seem to speak in favour of the second approach. But we also find Kant referring simply to entities, objects or, especially, 'things' in themselves without further qualification. And the sum of these things or objects moreover, whether they are mentioned 'in themselves' or are 'considered in themselves', can also be described as a 'world'. Thus if we employ a sufficiently broad concept of world, the 'two worlds' doctrine can also claim a certain plausibility. But it is more important to note that the relevant expressions make their appearance in rather different contexts and despite the formal common denominator of their general meaning – namely as something that can only be 'thought but not known' – their precise significance varies accordingly. Like many other fundamental concepts in Kant, the concept of the thing in itself has multiple significance:

(1) If theoretical and practical reason are considered as an entirety, the two worlds doctrine appears convincing not only specifically with regard to Kant, but to the central problem itself. For the world of theoretical reason and its laws of nature clearly differs fundamentally from the world of practical reason and its moral laws. While the latter certainly exist as categorical laws, they can only be said to do so *modo morali*, not *modo naturali*.

(2) With respect to the world of human action the two perspective doctrine appears convincing. If we consider Kant's example of 'a malicious lie' (B 582), we can impute an act to a responsible agent and thereby judge it morally (from the noumenal perspective) and we can also explain it 'phenomenally' by reference to the interaction of various factors such as given capacities, early childhood experience, psychological development and other specific circumstances.

(3) The first *Critique* is principally concerned with knowledge which, according to Kant, is directed exclusively to phenomena and the laws of nature governing them. Hence theoretical reason has no access to any further second reality, whether a world of reason beyond experience or a world of sense prior to experience. In this context Kant's twofold thesis, a theory of knowledge and a theory of the object in one, presents itself in three fundamentally different sub-contexts which elucidate the thing in itself as a limiting concept in four functional respects: (a) on account of the subjective contribution involved in all knowledge the objectively known object is always an appearance and

not a thing in itself; (b) on account of sensible receptivity there is also an objective contribution that belongs to knowledge. But that which affects the senses cannot properly be regarded as a cause of our sensations since the concept of cause has no application without reference to sensible intuition. The contribution in question therefore remains entirely unknown. It is a thing in itself which, prior to the empirical, can be called the 'pre-empirical thing in itself' (cf. *Discovery*, VIII: 215: 'Objects as things in themselves *give* the material for empirical intuitions . . . but *are* not themselves the material of the latter'). In (a) and (b) the thing in itself therefore presents itself in its negative meaning. It is the object of experience from which we have however abstracted from our subjective contribution, and thus insofar as it is 'considered in itself'. And lastly, in the theory of scientific research (c) and in the field of morality (d), we must also recognise elements that are purely thought and are therefore things in themselves, although we should now describe them as 'post-empirical' rather than 'pre-empirical' things.

According to an ancient approach that reaches back to Plato and Parmenides we can only know that which 'really is' when thought liberates itself entirely from the restrictions of the senses. Thus true being, or what Plato describes as the 'Idea', can only be disclosed to pure thought, whereas the knowledge mediated by the senses is 'only appearance', that inadequate knowing or mere opinion (*doxa*) which is the source of all error and deception. With respect to the realm of theoretical reason Kant inverts this evaluation of knowledge. The objects mediated through the senses and the understanding, or appearances in his sense of the term, are the only objective thing that we can know, while mere thought, as well as pure intuition, are not capable of any knowledge on their own. That which exists independently of sensibility is not true being. It is simply the wholly indeterminate.

Kant thus draws a decisive conclusion from the previously endless disputes between rationalism and empiricism. In opposition to the latter, there can be no knowledge without recourse to pure concepts of the understanding, although their employment remains restricted to the domain of sensibility. In opposition to the former, pure understanding can claim no special field of knowledge for itself, and the categories can only properly be employed in an empirical rather than a transcendental sense (B 303). And Kant also rejects the position of the

sceptics who deny all metaphysical knowledge whatsoever. For there is indeed a metaphysical truth. But in the context of theoretical reason it is one which never leads us beyond the limits of experience and thus inevitably disappoints the aspirations of rationalism. Instead of procuring access to the supersensible, it merely clarifies the conditions of possibility of sensible knowledge: all a priori knowledge stands in the service of the a posteriori knowledge of experience.

But even this conclusion is only a part of a broader assessment that is still to come. For we have not yet connected it with two further questions: firstly, in respect to theoretical reason, with the concept of ‘the unconditioned’ as a totality that can never be completely given as such, but is nonetheless given over to us as a horizon which can also be positively determined in the form of an ‘as if’; and secondly, in respect to reason as a whole, with the practical, and specifically moral, role of the latter. Both of these aspects open up a new and positive meaning to the concept of the thing in itself, even as they simultaneously confine knowledge to its proper limits. We must therefore recognise a double *ignorabimus* here: neither is everything ever already fully known nor indeed is everything knowable everything that matters.

15.3 No Science without Mathematics

Kant’s theory of the principles of pure understanding is the constructive culmination of the first *Critique* and it is hardly possible to exaggerate its importance either for what we have called ‘fundamental philosophy’ or for the philosophy of the (natural) sciences, irrespective of whether we consider the question systematically or in terms of the history of philosophy. Kant methodically undertakes to provide a thorough ‘deduction’ of the essential features of modern natural science. He thereby directly challenges the cultural relativism which regards the modern natural sciences as *essentially* bound to and conditioned by the specific character of the modern European age. For on his account the validity of the sciences in question is in truth independent of the specific conditions of their historical emergence.

Kant’s first two transcendental principles tell us that in order to obtain objective knowledge of the processes of nature we must be able to speak the language of mathematics and to measure quantity, duration, mass, amount of energy etc. According to the first analogy,

we must also connect this language with the conceptual semantics of substance and accident, that is, we must search for the relevant unified magnitude or fundamental 'substance' to which all our measurements are ultimately related. In the perspective of this transcendental semantics the processes of nature appear as changes in a fundamental substance that itself remains the same.² According to the second analogy, we must also recognise rules concerning the irreversible sequence of events, namely causal laws themselves. And finally, according to the third analogy, we must recognise that all substances stand in thoroughgoing reciprocity. These transcendental laws of nature furnish the indispensable basis for the refutation of scepticism with regard to the external world. On account of their transcendental character these laws occupy a higher logical level that is indifferent to the specific character of particular physical laws and to changes in our understanding of such laws. Hence there is no need for us to try and show, with Gödel (1946) for example, that Kant's theory of space and time is compatible with the modern theory of relativity. As the second step in our interim assessment here, we shall therefore simply address the reservations that have been raised with respect to the two perspectives of mathematisation and causality demanded by the transcendental laws of nature.

Given the transcendental character of mathematisation in Kant's account, everything that in principle escapes quantification falls outside the domain of strict science (*Foundations*, the 'Preface'). The general observation, collection and description of empirical data is of course required, but this knowledge remains pre-scientific in character until and unless the relevant facts have been brought into a mathematically organised form. Mathematics has obviously moved on beyond the science of spatial determination (geometry), of number (arithmetic), and equations (algebra), with which Kant was familiar, and has now developed as a general science of structures in its own right. With the modern theory of probability, together with game theory, decision theory and chaos theory, mathematics has long since permitted us to regard not merely physics, but also aspects of the life sciences, the cognitive sciences, the social sciences, and especially psychology, as examples of science in the proper sense of the term. We make use of mathematical procedures in all these areas, not only with Kant for the quantification which they facilitate, but also on account of the stringency and precision which they exemplify.

In the first *Critique* Kant does not ask the corresponding question as to where mathematical procedures, especially if restricted to quantification, may prove inadequate or inappropriate to the matter at hand. If we investigate plants and animals, for example, solely in relation to their quantifiable spatio-temporal features or their quantifiable degrees of sensitivity, or follow Bertalanffy (1928) in describing the processes of biological formation in precise mathematical terms, we certainly fall victim to a 'physicalist' prejudice which overlooks something essential and ignores the abundant variety of the plant and animal world. The full wealth and range of the sciences of history and language (if not by structuralism), disciplines that first arose amongst the ancient Greeks and were avidly cultivated during the Enlightenment by significant thinkers such as Hobbes, Voltaire and Hume, has also cast doubt upon the privileged status that has often been accorded to mathematics. And Giambattista Vico explicitly challenged the dominance of mathematics through his own theory of historical reality in his *Principi di una scienza nuova* (1725/44).

Was Kant simply unaware of such objections, or did he merely overhastily ignore them? Although it is true that Kant was fascinated by the achievements of Newtonian physics, he does not deny the existence of sciences that resist the process of mathematisation. With regard to the study of history, for example, he developed a specifically philosophical perspective, but one which is not intended to 'displace the work of practicing empirical historians' (*Idea for a universal history*, VIII: 30). Kant also frequently appeals to the authority of the important contemporary biologist Buffon (cf. *Races*, II: 429; *Anthropology*, VII: 221; *Teleological Principles*, VIII: 168). And finally, of course, we should remember that in his *Universal Natural History and Theory of the Heavens* (I: 230) Kant ascribes a special place to the living world of plants and animals, a position which he also endorses in the first *Critique* (B 374; B 719) and develops in the third *Critique* in terms of a theory of life that has remained relevant to this day.

It is superficial to infer a basic contradiction from these considerations to the effect that while Kant certainly recognises non-mathematical sciences, he still regards mathematics as a defining feature of scientific status. The reason for Kant's approach lies in his normative concept of science. In addition to rational science, Kant also acknowledges what can be called 'historical' natural science in accordance with the original meaning of the Latin word *historia*, namely

a systematic exploration of actual circumstances and states of affairs which goes far beyond the mere collection and accumulation of factual data. But this remains an 'improperly called natural science' to the extent that its subject-matter is not treated in accordance, and even exclusively in accordance, with a priori principles. For otherwise the decisive condition of proper science, apodictic certainty, is still lacking. Kant is perfectly well aware of the high price that must be paid for this demand. Since it is never likely to be able to fulfil this condition, even the study of chemistry, one which enjoyed considerable standing in Kant's time, must be described as a case of 'systematic art rather than of science' (*Foundations*, the 'Preface').

Why does Kant burden his argument with such a problematic seeming distinction as this? Is he simply presupposing an idea of science which has long since been relinquished, that of a body of complete and perfect knowledge? Aristotle already appears more cautious in this regard when he argues for a plurality of scientific approaches in accordance with the qualitative differences of the relevant subject matter (cf. Höffe 1999²/2003, Chapter 14.3). In fact Kant does not actually argue so differently himself, for his qualification of 'proper' science refers to a peculiarity of the matter at hand. This is why he does not subscribe to the physicalism that would reduce all our knowledge of nature to mathematical physics, but acknowledges a plurality of forms of knowledge. But in order not to sacrifice scientific rigour to the plurality of scientific approaches, Kant initially draws a double distinction within and between two kinds of knowledge. Thus 'historical' knowledge, i.e. a systematic but merely descriptive *doctrine* of nature, involves a static description as well as the sort of dynamic description which we would recognise today as the history of evolution, including the history of the universe. And again, within the domain of the *science* of nature, Kant distinguishes between science in general and science proper. He thus establishes a series of progressive epistemic stages by evaluating the four kinds of knowledge in accordance with two criteria which would hardly be regarded as controversial today: a form of knowledge represents a higher stage if, firstly, it provides an increased and additional achievement of its own and if, secondly, it increases our knowledge of knowledge, or expressly grasps the peculiar character of knowledge, and fully epitomises this character. This furnishes us with a plausible series of stages: the simplest stage of the knowledge of nature lies in the merely static knowledge of facts; the next stage also involves

what we might call evolutionary or developmental facts; the third stage introduces principles in addition to the facts; at the final stage these principles acquire the apodictic certainty which, for Kant, is characteristic of the mathematical causal laws formulated in physics. At this stage we are no longer dealing with knowledge in a comparative sense of the word, but with knowledge in the superlative sense, with ‘simply knowing’ (which Aristotle in the *Organon* calls ‘epistasthai haplos’; cf. *Posterior Analytics*, I:2, and frequently elsewhere). It is this knowing which merits the honoured title of knowledge proper.

15.4 Probability – An Alternative to Causality?

In his subsequent work on the *Metaphysical Foundations of Natural Science* Kant introduces ‘metaphysical’ principles that lie in between the level of transcendental laws of nature and the level of empirical laws of nature, such as the law of gravitation. By applying his transcendental principles, the three analogies, to the highly general concept of (lifeless) matter Kant undertakes to derive the first three fundamental laws of mechanics. Thus one aspect of the first analogy, the claim ‘that no substance arises or perishes’, yields the proposition concerning the conservation of matter: ‘In all the changes of material nature the quantity of matter as a whole is neither increased nor decreased but always remains the same’. The second analogy, according to which ‘all change has a cause’, yields a law of inertia that recalls Newton’s first law: ‘All change with respect to matter has an external cause. (Any body persists in a state of rest or motion, in the same direction and with the same velocity, as long as it is not compelled by an external cause to change this state)’. Finally, the third analogy, and the argument that ‘every external effect in the world involves reciprocity’, yields a law of reciprocity that recalls Newton’s third law: ‘In all communication of motion effect and counter effect are always the same’ (*Foundations*, IV: 541, 543 and 544).

It might appear that Kant’s approach here not merely overestimates the contribution that philosophy can make to science, but also ties itself down to a particular stage in the development of natural science which has already been superseded. But Kant’s ‘remark’ on the law of inertia (*Foundations*, IV: 544) reveals in an exemplary manner that he does not actually bind his argument to the letter of classical

mechanics. For he interprets the idea of inertia here simply as an analytical rather than synthetic proposition concerning the concept of matter. This merely expresses the fact that lifeless matter, in contrast to living things, lacks an internal capacity for spontaneous behaviour and is therefore unable to initiate a change from within itself. Hence every change here requires an external cause in the absence of which matter simply persists in its originally given state.

Thus Kant identifies mechanics with the science of lifeless matter, and in turn the latter cannot *per definitionem* undergo change from within. What the relevant external causes are, along with the mathematical laws that govern them, rightly remains an open question from the methodological point of view, and quite sensibly so from the perspective of the history of science itself. Thus Kant recognises three levels here. The first *Critique* deals with the first and most basic level of the transcendental or 'fundamental principles' of knowledge. The *Metaphysical Foundations of Natural Science* examines the second level of a pre-empirical and philosophical mechanics. And Kant leaves the third level, specifically concerned with the empirical laws of 'physical mechanics', to an ongoing enquiry into nature that is never fully complete (as he argues in the 'Dialectic'). Kant thereby avoids the unnecessary reduction or attenuation of the task of philosophy, while still preserving the undiminished freedom and independence of the natural sciences.

It is true that many interpreters of Kant have understood the situation quite differently. Thus Karl Popper (1974⁵: 192) and Wolfgang Stegmüller (1967/68), and more recently Michael Friedman (1992 and 1992a), have regarded the first *Critique* as an early theory of science which was only convincing with regard to the Newtonian physics that represented the exemplary case of science at the time. There have certainly been attempts to 'salvage' Kant's position from the perspective of more modern views, such as Beck (1966) in relation to Heisenberg's principle of indeterminacy, von Weizsäcker (1964) in relation to the principle of conservation, and already by Ernst Cassirer (1937) and Kurt Gödel (1946) in relation to the theory of relativity and quantum theory. Nonetheless the dominant contemporary view is that the emergence of post-Newtonian physics has effectively deprived Kant's 'fundamental principles' of much of their value. But in fact neither the claim that the first *Critique* is intrinsically dependent upon an earlier phase of the history of science nor the contrasting attempt

to salvage the argument of the work in the light of modern physics is capable of doing justice to Kant's position.

Defenders of the first claim, for example, argue that the causal principle can now be interpreted in terms of the laws of probability that prevail in the domain of micro-physics. Building on the statistical interpretation of temperature and entropy already pioneered by Boltzmann, Maxwell and Gibbs, the probabilistic perspective has long since established itself in modern physics. But it does not thereby eliminate the transcendental causal principle itself. It simply challenges the older deterministic 'world view' of physics that allowed Newton to think that the world could in principle be calculated and predicted in every detail and led Laplace to believe that a sufficiently powerful computing device could in fact do so. The prevailing outlook today, on the contrary, thinks pre-eminently in terms of probabilities.

There is already reason to doubt the supposed obsolescence of the causal principle if we simply reflect on the fact that Kant himself was not entirely unfamiliar with the probabilistic approach. It is of course difficult to determine just how closely Kant was informed about the relevant debates in the science of his time. But according to Warda (1922: 38), Kant's personal library contained the extremely important *Ars conjectandi* by Jacob Bernoulli and in the correspondence with Lambert he referred repeatedly to Lambert's *New Organon* (*Letters*: Nos. 33/20, 34/21, 37/22). In the final section of the *Prolegomena* Kant even speaks of a *calculus probabilium*, and distinguishes an epistemic probability (or 'conjecture') from a probability which can be mathematically calculated. In the first *Critique* he describes the former as 'truth, known however on insufficient grounds' (B 350) and clearly has no difficulty with the latter considered as objective laws of probability (cf. Brittan 1994).

It might be possible to defend the causal principle by indicating the limited applicability of the probabilistic revolution in modern science. For while the laws of probability are valid above all at the level of micro-physics³, the 'deterministic laws' retain their validity at the next two higher levels – that of astro-physics even as interpreted by the general theory of relativity and that of the extensive 'everyday domain' that lies between micro-physics and astro-physics. Even the more recent development of chaos theory cannot be said to challenge determinism itself, but merely our ability to predict events which, like the behaviour of the weather, depend on too many particular factors and where

extremely slight changes can produce enormous effects. But the limited range and validity of the probabilistic approach is incapable of salvaging any transcendental principle whatsoever, unless we wish to add a further argument for the limited validity of the concept of nature itself. The 'functional role' of the causal principle would thus fall away for micro-physics since its object would no longer belong to 'nature' in Kant's sense, but rather to something somehow prior to nature or simply alien to nature as such. But such an idea appears entirely uncalled for. And the sequence of perceptions analysed in the second analogy is still a feature of micro-physics anyway. It is simply that instead of 'pure' perceptions we are dealing here with quantifiable data that are 'mediated' by the relevant instruments of measurement.

The 'Copenhagen' interpretation of quantum theory that was advanced by Niels Bohr and Werner Heisenberg claims that a certain subjectivity intrinsically characterises our scientific physical knowledge. But this simply displaces rather than repudiates the traditional separation between subject and object within the field of knowledge. Since a (highly formal) measuring subject enters into the reciprocal relation between the object of measurement and the process of measurement, the object pole now lies in the reciprocal relation and the subject pole lies in the interpreter of the relation in question, and the separation of subject and object is therefore maintained after all. The physicist that interprets the object, and the interpreted object, into which the experimental interpreter also admittedly partly enters, still remain separated from one another from the epistemological point of view. But, compared with the 'Copenhagen' interpretation of subjectivity, the theory of subjectivity advanced in the first *Critique* operates at a much more fundamental level which is transcendental rather than empirical in character. The Kantian theory is concerned not with observations or measurements, but with the forms of intuition, the categories, the schemata, and the principles which are in principle indifferent to the difference between micro-physical subject-dependent measurements on the one hand and macro-physical subject-independent measurements on the other. The 'Copenhagen' interpretation of quantum physics which specifically attempts to link the latter with Kant's philosophy actually does justice neither to Kant nor to the concerns of physics itself.

Even an important physicist like Wolfgang Pauli was seriously disturbed by the original discoveries of micro-physics because he had

naturally grown up with the view that the fundamental core of reality as a whole could always be grasped in terms of the mathematical natural sciences. Since the previous 'rational' view of the world appeared to be directly challenged by these new developments, he believed that our concept of reality had to be expanded to include another entirely different dimension that he described as 'the irrational' (cf. Laurikainen 1988). Even if we refrain from ascribing too much significance to the merely limiting expression of the 'irrational' here, we cannot avoid a certain scepticism about this approach. And the first *Critique* can help us to frame appropriate concepts and arguments in this connection.

Our scepticism should not directly concern the idea of a reality that is unknown to classical mechanics. For philosophy is perfectly familiar with this thought – negatively insofar as the causal principle is indifferent to any specific form of physics, and positively insofar as Kant alludes to many other 'realities' over against that of classical mechanics: to that of chemistry, even if it cannot count as 'science proper' to the degree that it is not capable of mathematisation, to that of biology, which Kant discusses in detail in the third *Critique*, to that of society and history, and especially that of morality, right and the state. Our scepticism should rather be directed at a certain double overvaluation: that of physics in general – which may encourage us to think that what cannot be grasped in purely physical terms is neither real nor rational – and that of the revolutionary theory of quantum physics in particular. For this theory does not require us to posit an 'irrational' reality which can be grasped neither as matter nor as consciousness, and indeed does it disqualify the causal principle itself. For it continues to form part of the same 'rational' reality that is characterised by the relation between mathematics and causal reasoning. Quantum theory does not challenge the law of mathematisation that is required by intensive and extensive magnitudes, and nor does it challenge the law concerning the specifically rule-governed and thus causal sequence of the data that are measured. It merely changes one aspect of the applicability of the causal principle: the sequence of the data that are measured can no longer be predicted with respect to particular events. Even in the world of quantum physics, for example, the future of the world is still determined by the relevant wave functions, even though a singular spatial constellation of impulses itself remains indeterminate.

The expression 'indeterminism' that is frequently employed in this connection is misleading. We are not concerned here with the 'speculative' question whether natural scientists studying Kant's brain, perhaps in collaboration with social scientists studying his social environment and historians of philosophy studying his intellectual background, would ever be in a position to predict the composition of a work like the first *Critique*. We are concerned with the much simpler question whether probabilistic laws of nature imply an unambiguous process of determination. And we must answer in the affirmative. Thus the Schrödinger equation in quantum mechanics, a first-order differential equation, allows us to calculate the so-called 'psi-states' with precision. It is quite true that we can only assign probable distributions to them with respect to the magnitude of impulse or location. But this 'non-determinability' merely applies to the individual events. A bundle of such events still involves a determination which is precisely formulated in terms of the probabilistic laws of nature. What is suspended here is not really the causality of individual events, but, far more radically, the possibility of objectivity in this case.

What then is the proper point and function of transcendental critique in this context? Whenever physicists go 'beyond' their own specific field and thus become meta-physicians in the literal sense, transcendental philosophy is called upon to challenge the 'bad metaphysics' which avoids the task of furnishing a precise diagnosis of the issues. And in a further step transcendental philosophy must attempt to replace extravagant speculation with precise concepts and careful diagnoses.

Notes

1. For the first approach cf., for example, Vaihinger (1881, II: 20f., 35ff.), Strawson (1966: 236ff.) and Guyer (1987: 385–7); for the second cf. Prauss (1974), Allison (1983), Pippin (1982: 188f.), Ameriks (1992) and Robinson (1994).
2. Modern physics would interpret this as the equivalence of energy E and mass m , expressed in the formula $E = mc^2$ (where c = the speed of light).
3. Einstein's famous remark that God 'does not play dice' suggests a sceptical view of probabilism even in the field of quantum theory and of micro-physics in general. He reinforced this view in 1935 when he published, along with Podolsky and Rosen, a thought experiment which the authors described as the EPR paradox (actually formulated by Podolsky himself according to von Weizsäcker 1985: 544ff.). We may assume an interdependent system of two particles, for example the two protons

A and B, which are travelling in opposite directions from one another. If we measure the impulse of A, the impulse of B is also simultaneously (in the strict sense of instantaneously) determined, even though B, given this simultaneity, receives no communication from A. In order to explain this 'spectral behaviour at a distance', we must, according to all three authors, regard the calculations of previous quantum mechanics as incomplete, assume variables that are still unknown, and relinquish Heisenberg's principle of indeterminacy. In the final analysis, therefore, the world would prove to be entirely deterministic in character after all. But the EPR paradox is subsequently explained without appeal to any hidden variables. And since the experiments with pairs of protons that were conducted in the 1970s, the various remarkable features of quantum mechanics (such as objective indeterminacy, objective contingency, objective probability and indeterminability of position) have assumed a now undisputed place within the world of physics (cf. Neuser/Neuser-von Oettingen 1996 and Zeilinger 2003, Chapter II. 2).

Part V
A Post-Metaphysical Metaphysics

CONSTRUCTIVE DECONSTRUCTION

Our concern with the issues raised by analytical philosophy should not allow us to forget the challenge represented by contemporary forms of scepticism concerning the status of science in general. One strand of post-modern philosophy in particular prides itself on deconstructing the kind of ‘grand narratives’ that once sustained the project of all-encompassing knowledge. According to Jean-François Lyotard (1979/83), notions like those of the emancipation of humanity, of a universal teleology of spirit, of a universal hermeneutics of meaning, all expressed the same kind of desire for a single ultimate truth that should henceforth be relinquished in favour of an emphatic recognition of plurality. It is of course clear that deconstruction of this kind is not particularly new since its origins can be traced to the later Heidegger, and before that to Nietzsche, and earlier still back to Kant himself, whose ‘Dialectic’ reflects a similar atmosphere of critical thought. And far from recognising or regretting the collapse of the traditional legitimating framework of thought, namely that of ‘special metaphysics’ as a whole, in a pessimistic or melancholy spirit, Kant welcomes it as a kind of liberation. In this sense we may say that *one* grand narrative at least, that of emancipation, is justified after all.

In comparison with post-modern thought, Kant’s approach is actually even more revolutionary. Lyotard rightly described his own diagnosis of the current situation as a ‘report’ (*rapport*), but whereas he merely registers the collapse of a formerly dominant mode of thought, Kant effectively brought about such a collapse. Furthermore, Kant does not simply content himself with his own deconstruction of traditional philosophy since at the end of his ‘Dialectic’ he transforms ‘special metaphysics’ into a general theory of scientific investigation and into a liberating approach to the demands of moral reason. In addition, he refuses the temptation of transforming one grand narrative into another one that is tacitly substituted for the first: namely the

polemical interpretation of scientific rationality that has prevailed in different though related forms from Nietzsche, through Heidegger and the first generation of the Frankfurt School, to post-modern philosophy, including the thought of Rorty and Feyerabend. The 'reason' which is subjected to self-limitation in Kant's 'Dialectic', and legitimated precisely through this limitation, can thus renounce the claim to be something higher or better than the sciences.

16.1 A Re-evaluation of Dialectic

The conclusion of Kant's 'Dialectic' is as simple as it is clear: there is no knowledge of intelligible objects, of things which are merely thought. If we assume otherwise, we fall victim to an illusion, even a *fata morgana*: believing we can know something where there is nothing to be known. The first *Critique* could therefore have made short work of the whole matter. Once the 'Analytic' has transformed and reduced the function of 'general metaphysics' into a mere analytic of the pure understanding, we might think that the 'Dialectic' could simply eliminate the three disciplines of 'special metaphysics' (rational psychology, transcendental cosmology and natural theology) from the overall domain of the sciences. Strictly speaking, this would minimally leave us with the two propositions: that the objects corresponding to these disciplines – the soul, the world as a whole (including freedom), and God – are merely objects of thought, and that such objects are consequently unavailable for any objective knowledge.

But in fact Kant takes considerable pains to consider the whole matter in detail. For the 'Dialectic' furnishes an extremely thorough exploration of the origins of our belief in pretended and illusory knowledge, provides an extremely careful analysis of the features common to all forms of special metaphysics and of the specific character of its three disciplines, and exhibits great constructive power in discovering fresh thematic and methodological significance in these traditional forms. For all these reasons, we should recognise Kant's 'Dialectic', even if it has perhaps been neglected in this respect today, as a paradigmatic and still unequalled example of an authentic philosophical deconstruction.¹

Neither the fact that we fall victim to the illusions of pretended knowledge, nor the three disciplines specifically involved here, are simply matters of chance. By showing that the knowledge-claims of metaphysics are actually feigned, the 'Dialectic' only further confirms

the results of the 'Analytic': for all its ingenuity, thought by itself cannot produce any knowledge whatsoever. The proud method of dialectic must therefore undergo a radical reevaluation. According to the 'sublime philosopher Plato', the exemplary thinker as far as pure supersensible objects are concerned, the method of dialectic was capable of transcending the individual sciences and ultimately grasping the grounds of all reality. It directs itself to the 'ideas' which, as pure objects of thought, are the 'paradigms of the things themselves' rather than 'merely keys to possible experience' (B 370) and thus reveal authentic reality. For Plato, therefore, dialectic is the logic of 'authentic' truth.

In both divisions of its transcendental 'Logic' the first *Critique* displays eminent respect for the two great founding fathers of occidental philosophy. The 'Analytic' follows Aristotle in describing the pure concepts of the understanding as 'categories' since, as Kant puts it, 'our primary purpose is the same as his' (B 105). And the 'Dialectic' in turn attempts to understand Plato's doctrine of ideas better than its original author was able to do. Of course, it refuses to follow him in his claims to speculative knowledge, in his 'mystical deduction' of the ideas, or his exaggerated hypostatisation of the latter. But in his own 'milder interpretation that accords with the nature of things' (B 371, footnote), Kant endorses the intention behind Plato's image of the sun (*Republic* VI, 508f.) in the sense that 'human reason exhibits genuine causality' and 'ideas are operative causes'. With respect to morality, legislation and religion, and even 'nature itself', Kant acknowledges that a 'plant, an animal, the orderly arrangement of the cosmos – presumably therefore the entire natural world – clearly shows that they are possible only through ideas' (B 374). But he nonetheless subjects this conception to a radical re-evaluation. Since the 'ideas' are *noumena*, 'concepts of reason to which no adequate object can be given in experience' (*Anthropology*, Section 43), Kant relegates the theory of such ideas to a 'logic of illusion' and elevates the theory of appearances (and with it the Aristotelian theory of categories) to the one and only 'logic of truth'.

Once again Kant is not concerned with formal logic. The 'Dialectic' no more provides a theory of logical illusion than the 'Analytic' contains a theory of (formal) logical truth. The 'Dialectic' presents that second transcendental logic which, against the background of the fundamental question of the first *Critique* as a whole, is required to explain both why (special) metaphysics is necessary and why it necessarily

produces an illusion of truth. The urge to extend our metaphysical knowledge is so powerful that it can only be restrained by revealing the emphatic contradictions that are inevitably involved in the attempt.

The fact that the rationalist proofs (for the immortality of the soul, for the freedom of the will, for the existence of God) are a failure does not itself secure a victory for the rival empiricist position since the contrary proofs provided by the latter are equally unsuccessful. This conceptual stalemate can easily encourage a sceptical approach which simply declares the questions of metaphysics to be meaningless and thus stifles them from the very start. But this strategy of repression or marginalisation contradicts the 'natural' interest of reason in searching for a supreme and comprehensive unity in all our knowledge. The subsequent advances in logic since Kant have done nothing to show that this interest simply derives from an arbitrary commitment, a purely subjective misunderstanding, or a lack of insight. For it is only by reference to this supreme unity, to the unconditioned, to what Kant also calls the (transcendental) idea, that the understanding can come into 'thoroughgoing accordance with itself' (B 362).

Kant therefore permits the interest of reason to unfold, even though he also destroys its claim to knowledge itself. For as far as the constitution of objectivity is concerned, the idea in question is a secondary and in that sense dispensable accomplishment. On the other hand, it is not a product of simply empirical or idiosyncratic subjectivity, but rather expresses a necessary demand of thought itself. Just as the understanding brings the manifold of intuition to unity, so reason 'endeavours to reduce the varied and manifold knowledge obtained through the understanding' (B 361f.). It is the understanding which first brings about the many constitutive but relatively minor unities which reason grasps in a few greater but merely regulative unities. Once again, therefore, we find ourselves addressing the understanding, but now we are doing so against the horizon of reason.

16.2 Three Fallacies

Remarkably successful in pursuing its inferences, reason encounters not merely *one* form of highest unity, but rather three. Borrowing the leading terms of one of Kant's subtitles (B 642), we may say that 'discovery' and 'explanation' indicate the twofold task that is addressed in

the 'Dialectic'. Like the 'Aesthetic' and the 'Analytic', the 'Dialectic' must also discover the relevant elements, in this case the 'ideas', through a kind of metaphysical deduction (Book I) and then proceed to justify them through a kind of transcendental deduction (Book II). But since the 'ideas' yield only apparent rather than genuine knowledge, the 'discovery' and 'explanation' involved must concern itself principally with the nature of 'dialectical illusion'.

It is quite true that, unlike the case of the metaphysical deductions undertaken in the 'Aesthetic' and the 'Analytic', Kant does not have to prove the pure a priori character of the relevant concepts in the first place since this character already intrinsically belongs to the 'ideas'. But he must undertake to identify and elucidate the concepts that are specific to reason and to present them systematically, and thus exhaustively, in a kind of table of ideas.

Whereas the understanding is the faculty of rules, reason is essentially the faculty of principles. The understanding concerns itself with judgement as the fundamental element of knowledge, while reason concerns itself with inferences that involve the synthesis of judgements. As pure concepts of reason, therefore, the ideas are concepts that are only obtained through 'inference' (B 366). And the three fallacies which Kant identifies here correspond specifically to three kinds of inference. Since the third class of judgements as already expounded in the table of judgements furnishes three possibilities with respect to 'relation' (B 98), the three ideas also correspond to the three kinds of inference, or three ways of interpreting the relation of the conditioned to the unconditioned. And these exhibit a systematic sequence that passes from the issue of self-knowledge (the soul), through our knowledge of the world (including freedom) to the question of the original being (God).

The 'categorical' judgement concerns the relation of the predicate to the subject. This leads us to the concept of the unconditioned as the 'subject which itself is no longer a predicate': the soul, or the absolute unity of the thinking subject, which furnishes the object of rational psychology. In the 'hypothetical' judgement concerning the relation between ground and consequent the unconditioned consists in the ultimate and final term of a series, and thus in a 'presupposition which presupposes nothing else'. As the totality of all things and conditions in space and time, this final term furnishes the object of transcendental cosmology. The latter is concerned not only with freedom (in the

cosmological sense), but also with the immortal soul and therefore with God. Finally, the 'disjunctive' judgement concerns the relations of parts within a system. In this case the unconditioned consists in the absolute unity of the conditions of all objects of thought in general. United in a single subject, the unconditioned is thus the 'being of all beings' (B 606–7), the original being, or God, that furnishes the object of natural theology.

In all three cases, there is a dangerous temptation to take the unconditioned, 'a mere creature of our own thought', as 'a real being' (B 611f.), and thus to feign knowledge where there is no such thing. It is a common feature of all these 'rationalising inferences' (B 398) that, without any empirical premises, they nonetheless infer a certain reality and thereby confuse a purely 'logical' or conceptual employment of thought with its real objectively cognitive employment. Thus a logical principle is misused and distorted through being transformed into an existential claim. But this mistake should not simply be laid at the door of reason or even of the transcendental idea which 'naturally' belongs to reason itself. For the mistake in question is a 'subreption' that always arises from a 'defect of judgement' rather than from understanding or reason themselves (B 671).

If we describe the constitutive elements of the 'Analytic' as the grammar of thought, the 'Dialectic' shows how this grammar, initially elucidated by reference to general metaphysics, is already essentially, that is, internally, oriented to a theory of the unconditioned, and thus to special metaphysics itself. But it nonetheless remains a grammar of *thought*, and not of knowledge, since the complementary grammar of intuition developed in the 'Aesthetic' has no role to play in the present context. The Kantian analysis of the genesis of illusory claims to knowledge could also be described, in terms of Nietzsche or Foucault, as a genealogy or archaeology of special metaphysics, although in Kant's case this analysis turns out to possess a constructive as well as destructive dimension.

Since, as we have indicated, each fallacy is qualitatively different from the formal-logical as well as from the thematic point of view, Kant provides a specific treatment in each case. Attempting to think the absolute subject, pure reason falls victim to false inference, literally para-logisms, that infer from the transcendental subject, which contains nothing manifold within itself, to the absolute unity of a real subject. Attempting to think the totality of all things and

conditions, reason entangles itself in self-contradictory principles, literally anti-nomies, each of which struggles to establish the correctness of its own view on the basis of the incoherence of the alternative view. And finally, from the totality of conditions under which all objects are thought, from the idea of a highest reality, pure reason illegitimately infers the actual existence of this reality, the existence of God as the absolutely highest being. It is striking to note that the title of the third chapter, 'The Ideal of pure Reason', unlike those of the preceding chapters on the 'Paralogisms' and the 'Antinomies', does not specifically refer the fallacies to which pure reason is exposed. Instead of focussing upon the destruction of the proofs of the existence of God that is carried out in the chapter itself, the title draws attention instead to the continuing and positive function of the idea of God, although this is only explicitly treated in the 'Appendix' to the entire 'Dialectic', rather than in the chapter on the 'Ideal' itself.

The second book of the 'Dialectic', which is itself a kind of transcendental deduction, shows in turn how the three fallacies violate the a priori conditions of knowledge and thus represent a case of transcendental, rather than simply sophistical, illusion. In diagnosing what might be called the 'false consciousness' of traditional metaphysics, the 'Dialectic' effectively performs a radical critique of ideology. Nonetheless, the result is neither practically nor theoretically as significant as the perspective of traditional metaphysics would lead one to believe. It is not particularly important from the existential or practical point of view since it is principally directed against 'the monopoly of the Schools rather than the interests of mankind'. For the alleged proofs that are critically dismantled in the 'Dialectic' have never actually exercised 'the slightest influence' upon the views of the broader public anyway (B xxxii.). Nor is it particularly significant from the theoretical point of view since its (supposed) metaphysical 'discoveries' do nothing to advance our actual investigation of nature. For our actions, as the expression of free will, must, like all other appearances of nature, still be 'explained in accordance with the unchangeable laws of the latter'. The spiritual nature of the soul furnishes no 'explanatory ground for the appearances of life' and 'the existence of a highest intelligence' does not permit us to infer from it 'any particular order or organisation in the world' (B 827).

The (threefold) transcendental illusion we have been discussing functions like an optical illusion that we can grasp as such even though

we cannot make it vanish. Just as the stick inserted in water still appears bent even to the physicist who explains the phenomenon, so too the philosopher is incapable of simply banishing the transcendental illusion that he identifies. But it does counter Nietzsche's 'crippling thought that we are deceived, but are nonetheless powerless to avoid being deceived' (KSA XII: 213). The 'Dialectic' counters the illusion that the 'natural' advance of reason toward the unconditioned leads to any knowledge of genuinely comprehensive significance, and it thereby 'stops up the source of errors' (B xxxi).

Since the 'Aesthetic' and the 'Analytic' have taught us that there can be no knowledge in the absence of any 'corresponding object in sense experience' (B 383f.), we must clearly dispense with the alleged possibility of knowledge of the unconditioned. The 'Dialectic' can no more be presented as an abbreviated appendix to the 'Aesthetic' and the 'Analytic', than the latter can be reduced to an abbreviated introduction to the 'Dialectic': for unless and until the theory of experience is fully and properly expounded, reason will continue to fall prey to the illusion that it can transcend the domain of possible experience.

16.3 The Truth in the Illusion

One might of course question whether there is in fact something like a fundamental need of reason at all. The desired requirement of 'highest unity' could simply represent an obsolete relic of traditional metaphysics. In this case it would look as though Kant had not actually pursued his dismantling or 'destruction' far enough, as though the constructive turn he gives to his own 'deconstruction' of the tradition were really a regressive step in the history of philosophy. According to this relativistic interpretation of Kant's project, the three problems of immortality, freedom and God, far from representing questions ineluctably posed by the nature of human reason, would merely be an expression of the epoch in which he lived and simply reflect the pre-occupations of a religion such as Christianity. A fully accomplished process of secularisation, a 'completed modernity', on the other hand, would feel capable of relinquishing such questions entirely. And in fact the prevailing contemporary consensus concerning the needs and demands of a properly post-metaphysical age certainly encourages us to eliminate or marginalise these questions. Whether such a strategy is itself legitimate, of course, cannot

simply or hastily be decided in advance, but can only be determined by a careful examination of the three problems. And even a cursory glimpse of Kant's actual programme suffices to dispel any suspicion of nostalgic or regressive thought on his part since the dissolution of metaphysical illusion reveals the 'ideas' possess a genuinely positive significance in two respects.

In the first place, the 'ideas' serve to correct the positions of both rationalism and empiricism. Although, in contrast to rationalism, the 'ideas' have forfeited all constitutive cognitive significance, they also retain, in contrast to empiricism, a regulative function through which theoretical philosophy is consummated: since experience inevitably only reveals fragments of reality, reason seeks to order these fragments into a whole. Yet because this whole is never actually 'given', but only always 'given over' to us as a task, it cannot provide the object for a special science like traditional metaphysics. It simply furnished the goal of a constantly advancing process of scientific investigation. The envisaged end and completion of this process functions as a horizon, but of course it is only children who believe that we can ever actually reach the border of the latter. It is the naive notion that the whole can be more than this, that it can be the object of examination in its own right, which leads philosophy astray and exposes it to transcendental illusion. Once again, the first *Critique* serves to counter scepticism, not in this case that of Hume which is incapable of resolving the contradictions which confront us, but rather the kind of (academic) scepticism which simply ignores or accepts these contradictions (cf. B 513f. and 784f.).

The second positive function of the 'Dialectic' is of a morally-practical character: since the existence of God, freedom and immortality is not something that can be disproved, we can counter the opposing position and thereby 'sever the root of *materialism, fatalism, atheism, free-thinking belief, fanaticism, and superstition*' (B xxxivf.). It is the 'Dialectic' which first justifies the pathos of the B Preface which identifies the 'inestimable benefit' of the critical philosophy in the fact that 'all objections to morality and religion will be forever silenced, and this in *Socratic* fashion, namely, by the clearest proof of the ignorance of the objectors' (B xxxi). This also allows us to appreciate, once again, the careful and deliberate compositional structure of the first *Critique*. For the six positions to which he here alludes relate specifically to the three fallacies that are investigated in the 'Dialectic':

materialism and free-thinking belief to the paralogsms, fatalism and its rival position of fanaticism to the third antinomy, atheism and its opposing superstition to the ideal of pure reason. The destruction of the 'bad', because essentially 'speculative', metaphysics thus clears the ground for a 'good' metaphysics that concerns itself with the theoretical clarification of ongoing scientific investigation on the one hand and with the practical demands of morality on the other. The 'Dialectic', therefore, allows us 'to level the ground, and to render it sufficiently secure for moral edifices of these majestic dimensions. For this ground has been honeycombed by subterranean workings which reason, in its confident but fruitless search for hidden treasures, has carried out in all directions, and which threatens the security of the superstructures' (B 375f.).

Kant's new practical metaphysics transforms the ideas of God, freedom and the soul into postulates of reason and thereby justifies his programmatic claim in the B Preface: 'I have therefore found it necessary to deny *knowledge*, in order to make room for *faith*' (B xxx). For the postulates are open to a form of rational insight that is more than mere opinion, but is less than objective knowledge. Since Kant interprets his corresponding conception of reason expressly in terms of concepts of freedom, the second and purely secular achievement of the first *Critique* lies in his repudiation of the traditional metaphysics of being in favour of a new metaphysics of freedom. In this new metaphysics, religion, alongside the concept of legislation, plays a significant role, although of course this is a religion of reason which is intrinsically independent of Christianity or any other revealed religion. And we should also point out here that the two religious elements of God and the immortal soul find their proper place not in an 'Analytic' of practical reason, but only in Kant's (controversial) dialectic of the highest good (cf. Chapter 21. 2–3 below).

Note

1. This is largely ignored by much of the elaborate commentary which has been dedicated to Kant's position. Heimsoeth (1966–69) provides an interpretation of the 'Dialectic' which attempts to reveal its overall internal coherence and consistency. Bennett (1966) furnishes a rather hasty critique of the text, while the otherwise thorough study by Schmucker (1990) tends to overestimate the pre-critical elements of Kant's thought in this connection.

CHAPTER 17

A CRITICAL PHILOSOPHY OF MIND

17.1 Transcendental Psychology

In the modern context the investigation of the human cognitive capacities is a task that falls to the philosophy of mind. The first *Critique*, on the other hand, does not expressly undertake to provide a comprehensive account, or even a ‘theory’, of all our intellectual abilities and achievements. But if we read the work somewhat against the grain, we can certainly find many elements here that furnish significant contributions in this direction, and specifically to the frequently neglected epistemological task of a transcendental psychology. There is certainly no reason to regard the latter as an entirely ‘imaginary’ science, as Strawson claims in a remarkably categorical manner (1966: 32). The very programme of the first *Critique* already prescribes a particular direction for the philosophy of mind and encourages us to develop one, not indeed directly, but specifically in the context of a critical investigation of the possibility of knowledge in general. Yet Kant’s emphatic methodological division between a transcendental theory and an empirically verifiable theory must also cast doubt upon a recent attempt to interpret the first *Critique* as a direct contribution to the field of cognitive science in the contemporary sense (Brook 1994). The decisive problem here is not so much the fact that the modern cognitive sciences necessarily lay beyond his horizon, but that disciplines such as neurophysiology, psycholinguistics and information theory essentially are essentially concerned with empirical rather than transcendental questions. It is therefore no accident that the principal thesis underlying Kant’s philosophy of mind, the thesis of transcendental idealism itself, plays an entirely subsidiary role in Brook’s version of the argument. (From amongst the vast literature concerning contemporary philosophy of mind cf. Beckerman

1999 and Kim 1996; for Kant specifically, cf. Ameriks 2000², Klemme 1996, and Sturma 1985).

In considering Kant's possible contributions to the philosophy of mind we should begin (1) with his analysis of the two complementary sources of knowledge. The distinction between receptive sensibility and the active contribution of the understanding is obviously immediately relevant to the empirical psychology of cognition. We must also (2) recognise the importance of Kant's theory concerning the pre-empirical validity of the ordering structures of the pure forms of intuition and the pure concepts of the understanding; in the context of sensibility (3) we must acknowledge the interplay of inner and outer sense which also suggests that we should accept a (secondary) dualism of properties with respect to the relation between body and soul; the decisive issue (4) is Kant's epistemic revolution itself: the pre-empirical contribution which we 'bring' to experience implies that we can only know 'appearances' rather than 'things in themselves'. Thus Kant's response to the problem of the relation of body and soul implies a rigorous monism. For the soul is not 'in itself of a spiritual nature . . . In employing such a concept I not only abstract from corporeal nature, but from nature in general, that is, from all the predicates of any possible experience' (B 712). With respect to the difficult problem of body and soul, Kant furnishes a complex solution that replaces Cartesian dualism with a fundamental monism in the context of which he also defends a secondary dualism of properties. Kant distinguishes at least four specific problems concerning the relation of body and soul and offers different solutions for each of them (cf. Chapter 17.3 below).

In accordance with further aspects of Kant's philosophy of mind, we must recognise that (5) our sensory impressions are subject to various levels of elaboration and unification, that (6) the rules governing them are concepts which must in turn be applied by means of schemata and are subject both to transcendental principles and to 'ideas' as principles of unity. A particular importance (7) attaches to Kant's claims concerning the character of consciousness and the special role and status of self-consciousness, and to the systematic implications of the distinction between the transcendental 'I think' and the empirical assertion 'I exist as a thinking being'. The 'deduction' of the pure 'I think' provides a particularly rich source for a positive transcendental psychology. The chapter on the 'Paralogisms' (8) furnishes a complementary negative analysis or transcendental theory of what we could

describe as ‘fundamental-psychological’ fallacies which typically afflict the ‘alleged science’ (B 400) of rational psychology. In addition (9) Kant also diagnoses an elementary error, the expression of an ‘indolent reason’ (B 717), which illegitimately attempts to explain natural phenomena by recourse to ideas like that of the self as an immaterial thinking substance.

Although it must be recognised (10) that the first *Critique* operates on a distinctive transcendental level, the work does not thereby simply turn its back on questions of empirical psychology. A contribution in this direction can be identified in the claim that consciousness invariably displays a certain ‘degree’ which can always be further reduced (B 414). This of course raises the difficulty that Kant regards sensations as intensive and thus measurable magnitudes. Nonetheless, he also claims that ‘mathematics cannot be applied to the phenomena of inner sense and their laws’ since the ‘pure inner intuition, in which the appearances of the soul must be construed, is time, which possesses only one dimension’ (*Foundations*, IV: 471). (For the question whether the so-called Weber-Fechner law has effectively refuted Kant’s argument, cf. Chapter 17.4.1 below; for an account of early attempts ‘from Kant to Carnap’ to measure psychical magnitudes, cf. Martinelli 1999).

A further contribution to empirical psychology (11) is frequently overlooked here: Kant certainly repudiates the rationalist tradition of the philosophy of mind on the grounds that the soul considered as a purely intelligible entity is something entirely unknowable with respect to its alleged substantiality or distinctive properties. But he nonetheless ascribes to the soul the status of a regulative idea for all empirical psychology. In the context (12) of the then standard distinction between empirical and rational psychology (B 401)¹, the argument of the first *Critique* is only directly interested in the rational dimension of psychology, while empirical psychology is reserved for future treatment in a ‘detailed anthropology’ (B 877). Many of the questions which are raised in this connection today are not therefore specifically relevant to Kant’s argument. Nonetheless, the *Critique* is perfectly capable in principle of responding to a good number of them. Thus we may ask after the place of painful feelings such as headache, toothache or stomach ache which, unlike painful psychological feelings, can be specifically located. Kant would answer, in accordance with his aforementioned secondary dualism of properties,

that they belong to the ego of outer sense, as distinct from that of inner sense. There are also questions (13), like those concerning our sensations of the agreeable and the disagreeable or our feelings of pleasure and pain, which Kant only investigates in the *Groundwork* and the *Critique of Practical Reason*. The further question (14) concerning specifically aesthetic delight or satisfaction is treated explicitly in the *Critique of Judgement*. From the thematic point of view we must therefore acknowledge that Kant recognises three different philosophies of spirit: an epistemological one, a moral one and an aesthetic one. Finally (15), in his *Anthropology*, Kant provides numerous 'pragmatic' contributions to the question as to what man 'makes of himself, or can and should make of himself, as a freely acting being' (VII: 119).

We may already leave our summary enumeration of Kant's contributions to central issues in the philosophy of mind at this. But two points in particular should by now be clear: that Kant's philosophy of mind cannot be limited solely to the specific doctrines advanced in the first *Critique* and that what we have called his 'philosophy of mind' does not, thematically speaking, represent a single homogeneous discipline as such. Whereas philosophers since the time of Brentano (1924: 124 ff.) have frequently attempted to grasp the various phenomena of consciousness or of the mental realm under a *single* term, that of intentionality, Kant places particular emphasis upon the relevant differences involved, and insists that a cognitively oriented philosophy of mind will exhibit different features from a morally oriented and from an aesthetically oriented philosophy of mind respectively.

17.2 The Illusions of Reification

1. *The Context of Immortality*. According to Kant's account in the 'Dialectic', reason easily falls victim, in the first place, to the illusion that we could acquire substantive ('synthetic') knowledge of the self or the soul 'independently of all experience' (B 400). The 'paralogism'² that is involved here is also directly concerned with the purported demonstration of immortality (cf. B 427, and many other passages), and therefore the fundamental practical questions of morality and religion as well. On the other hand, the subsidiary claim that it is possible to doubt the existence of the external world is an essentially theoretical question. And the object of the relevant discipline, rational

psychology, is also defined in theoretical terms, namely as the thinking I and 'the object of inner sense' (B 400). Kant undertakes to expose the illusions of reason in four steps. The first shows that the concept of self-consciousness, which was expected to provide the basis for acquiring genuine rational knowledge, is actually too meagre to do so (Kant's 'first principle'). The next three steps simply draw the relevant theoretical conclusions with respect to knowledge and self-consciousness in general (his 'second' and 'third' principle) and establishes the methodological status of self-certainty (his 'fourth' principle).

According to the *first principle* of the chapter on the 'Paralogisms', rational psychology was 'built upon the single proposition "I think"'. But on account of this rather impoverished basis, rational psychology soon finds itself in a dilemma. If it attempts to preserve its 'rational purity' (B 401), self-knowledge shrinks into a vacuous form of self-relation for lack of any empirical determinacy. Yet if it seeks substantive self-knowledge, it finds it can only attribute specific states or properties to the self at the cost of forfeiting its pure rationality.

In the *Phaedo*, a dialogue essentially concerned with the question of immortality, Plato had already contrasted the unity and simplicity of the soul with the manifold composition of the body and attempted to provide four convincing arguments ('demonstrations') for the immortality of the soul. The first argument appeals to the claim that all things arise from their opposite: the souls of the living proceed from those of the dead whose souls are therefore 'preserved'. According to the second argument, genuine knowledge is also kind of (a priori) 'recollection', and this implies the pre-existence of the soul. In the third place, the nature of the soul is intrinsically related to 'the divine, the immortal the rational'. And finally, in the fourth place, the soul is defined by the idea of life and cannot possibly therefore take on the opposite form of death.

Following Platonic precedent, Moses Mendelssohn composed a dialogue entitled *Phaedo, or Concerning the Immortality of the Soul* (1767) which was to become a European best-seller during the Enlightenment. But unlike Plato and especially the standard metaphysics of the schools, Mendelssohn based his argument on the idea of the intensive magnitude of the soul and claimed that the latter could never disappear through any process of division or separation. Kant explicitly undertakes a two-part refutation of this argument because he clearly regarded it as the most advanced expression of contemporary

metaphysical psychology (B 413–6): (1) if we treat the soul as the sum of states of consciousness, gradually distinguished from one another, we are still dealing with an empirical phenomenon which possesses intensive magnitude and thus a 'degree of reality with respect to all its faculties'; (2) intensive magnitude can certainly be 'transformed into nothing through the gradual ebbing of its powers', so that these gradual distinctions reach all the way to the complete disappearance of consciousness. The simplicity of the soul cannot therefore be identified with its timeless essence or continued existence.

2. *The Critique of Descartes*. The early modern debate concerning the nature of the soul tended to draw less upon Plato than upon Descartes, whose position was further developed by the German philosophers of the Enlightenment, such as Wolff and Baumgarten. In his quest to discover the ultimate foundation of knowledge, Descartes identified the thinking self as an absolute certainty that could itself no longer be doubted. Kant's own conception of the transcendental 'I think' confirms the Cartesian thought of a self underlying all possible knowledge, but ascribes a quite different methodological significance to the idea. For as the formal source of all categories, the 'I think' cannot itself be grasped in terms of the latter, in terms of either substance or accident, of existence or non-existence. And the sensuous intuition that is always required for the constitution of an actual object is not available to us here. But Kant repudiates not only Cartesian rationalism, but also its empiricist counterpart which treats the formal identity of self-consciousness in terms of material and substantive states of consciousness (cf. the rather obscure passages at B 415, footnote, and B 419f.). He also rejects the two mutually opposed responses to the difficulties of Cartesian dualism that were historically represented by quasi-rationalist spiritualism and quasi-empiricist materialism (B 419f.; for further discussion cf. below).

Kant repudiates the Cartesian assumption of two really distinct substances, of extended bodies (*res extensae*) on the one hand and the thinking but non-extended mind (*res cogitans*) on the other. He does not therefore have to face the question that inevitably arises for every form of substance dualism: how can two fundamentally different substances like body and mind possibly exercise an influence upon one another? Kant's position must therefore be described as that of a qualified monism. Yet despite his fundamental criticisms, he takes over and adapts at least six aspects of Descartes's thought (cf. also 10.3 above).

In the first place, Kant describes the ‘problematic idealism’ of Descartes as ‘reasonable and in accordance with a thorough and philosophical mode of thought’ in so far ‘as it allows of no decisive judgement until sufficient proof has been found’ for positing any existence beyond our own (B 274f.). Secondly, Kant shares Descartes’s intention to overcome the traditional inherited metaphysics, rather than to eliminate metaphysics as such. Thirdly, he explicitly echoes Descartes in describing his own reform of metaphysics as a ‘treatise on method’ (B xxxii; cf. B 24f.), even if the first *Critique* itself adopts a quite different method. Fourthly, Kant emphasises, like Descartes, the importance of building upon the contributions of one’s predecessors insofar as ‘all of us together advance far further than any individual on their own could ever do’ (*Discourse*, Part VI). In the fifth place, Kant thinks that metaphysics is a science that has never properly existed before, and is thus still to be demonstrated and established. And finally, in the sixth place, Kant ascribes a special status to the ‘I think’ as the highest point for all employment of the understanding (B 133, footnote). But since the ‘I think’ in Kant plays a much more modest role than it does in Descartes, the chapter on the ‘Paralogisms’ must nonetheless be regarded as a penetrating critique of Cartesian thought.

The thinking ego or transcendental subject established through Kant’s first principle cannot possibly provide, according to his *second principle*, any substantive self-awareness or knowledge. The purely analytical proposition of the ‘identity of myself in all the manifold of which I am conscious’ (B 408) does not permit us to draw any synthetic conclusions regarding the non-corporeal existence of self-consciousness. A constitutive moment of all theoretical knowledge cannot properly be regarded as a mental state, and a purely formal self-relation cannot justify any propositional claims with respect to the self. In particular, it must be recognised that the transcendental self possesses no substantial character whatsoever. Kant thus undercuts Gilbert Ryle’s highly influential critique of the traditional philosophy of mind. It seems regrettable, therefore, that Ryle concentrated his arguments principally against Cartesian dualism, rather than also engaging with Kant as a critic of Descartes or with the Kantian position of qualified monism.

According to Ryle (1949), traditional philosophy of mind has typically assumed an ontological dualism which opposes the external and publicly observable phenomenon of the body to those inner, hidden (and private) mental phenomena which exercise a

'paramechanical' influence upon bodily processes. Ryle attempts to replace this allegedly 'standard doctrine' of the 'ghost in the machine' with a mentalist language describing the intelligent but universally and publicly observable behaviour that is in turn regarded, in accordance with the perspective of logical behaviourism, as a sufficient criterion for all phenomena of the mind. This whole programme of mentalist monism doubtless yields a differentiated 'logical geography of the mental'. But Kant's transcendental idealism clearly does not belong to the 'standard doctrine' that Ryle is criticising since the decisive concept of the 'I think' is not a substance that can exist in changing states at all. (Ryle could profitably have examined this position when he treats the expression 'I' as an elusive and intangible shadow that is almost impossible to avoid).

3. *Immortality?* According to Kant, rational psychology is actually directed to 'nothing further than a transcendental subject of thoughts' which 'is known only through the thoughts which are its predicates, and of it, apart from them, we cannot have any concept whatsoever' (B 404). Rational psychology thus intrinsically and comprehensively fails to establish what it undertakes to show. Instead of revealing a noumenal reality, namely a simple, numerically identical and substantial soul that is in principle separable from the body, rational psychology discovers only the purely formal vehicle of thought. Since the latter is not a substance, we cannot ascribe any specific properties to the soul whatsoever, whether that of immortality or its opposite. Where there is no substance, there can be no properties either. In this connection the question concerning mortality or immortality alike is entirely meaningless.

If we consider the matter more closely, we can see that the supposed demonstration of immortality specifically involves a fourfold fallacy (*fallacia*). Since we are dealing not with a deliberate attempt to deceive others (as with a *sophisma*), but rather with a kind of unintended self-deception (cf. *Logic*, Section 90), we must speak of a 'paralogism' here. More precisely we must speak of a transcendental, and not (merely) logical paralogism, insofar as it attempts to provide a transcendental ground for its fallacious conclusion. Once again Kant follows the fourfold classification of the table of categories, but he specifically begins with the third class since the fundamental mistake in the argument is most clearly revealed in relation to substance: a purely conceptual entity is here 'represented as a thing in itself' (B 402). Kant

then returns to the second and the first class and concludes with the fourth. We can thus consider the argument in the following order. From the perspective of relation, rational psychology claims that the soul or thinking being is an (intellectual) substance: the paralogism of substantiality; from the perspective of quality, that the soul is simple: the paralogism of simplicity; from the perspective of quantity, that the soul is numerically identical: the paralogism of personality; from the perspective of modality, that the soul stands in relation (*commercium*) to possible objects in space: the paralogism of ideality.

In accordance with this fourfold 'topic of the rational doctrine of the soul', Kant reconstructs the alleged demonstration of immortality as an argument in four steps, namely as the four paralogisms we have indicated. As an object of inner sense – this is Kant's interpretation of the 'intellectual' essence of the soul – the soul is characterised by its incorporeal nature; on account of its simplicity it is characterised by indestructibility; on account of the identity of intellectual substance it is characterised by personality. It is 'all these three together' (B 403) which signify the spiritual character of the soul. Finally, the '*commercium* with bodies' implies that while the soul is the principle of life in matter, on account of its spiritual nature it is also immortal quite independently of its connection with matter. Kant expresses the first paralogism (that of substantiality) as the following rational syllogism (B 410 f.):

- (1) the universal rule (major premiss): 'That which cannot be thought otherwise than as a subject does not exist otherwise than as a subject, and is therefore substance'.
- (2) the subsumption of the condition under the rule (minor premiss): 'A thinking being, considered merely as such, cannot be thought otherwise than as a subject'.
- (3) the conclusion: 'Therefore it exists also only as subject, that is, as substance'.

This paralogism, like all the others, violates an essential condition of valid inference, namely the identity of the concepts employed throughout the relevant argument. For in the major premiss the term 'subject' signifies an objective ego, the real self as the object of inner experience, whereas in the minor premiss it signifies the substantively empty 'vehicle of concepts in general' (B 399). The major premiss thinks substance as a thing, with reference to the intuition that alone

can confer reality and existence upon it, whereas the minor premiss abstracts from intuition: 'The dialectical illusion in rational psychology arises from the confusion of an idea of reason [...] with the completely undetermined concept of a thinking being in general' (B 426). In the later discussion in the 'Transcendental doctrine of Method' Kant further remarks that while the transcendental I 'contains *in itself* no manifold whatsoever', the soul is 'a highly complex concept' which may 'contain *under itself* what is very composite' (B 813).

Since the decisive concept is ambiguous, from the theoretical and argumentational point of view we are confronted with a categorial error, and from the purely logical point of view with a 'sophisma figurae dictionis'³ (*Logic*, Section 90), in this case with a fourfold multiplication of senses. Thus although the error can be identified in purely formal logical terms, it still requires a critical transcendental analysis. For there is a 'transcendental ground' which leads us 'to draw a formally invalid conclusion' here, thus producing 'an illusion which cannot be avoided, although it may, indeed, be rendered harmless' (B 399). We will continue to fall victim to this illusion, to the tendency to reify (hypostasise) the indeterminate concept of a thinking being as 'a real object existing outside the thinking subject' (A 384) until we learn the lesson of the 'Analytic' that no objective self is possible without sensible intuition.

Kant does not deny that our analysis of the function of the transcendental 'I think' will lead us to four specific propositions, but he emphatically questions the alleged content and methodological status we are tempted to ascribe to these propositions. In contrast to the claims of rational psychology, we can only affirm the following analytic propositions with regard to the transcendental I: (1) it must always be a subject and never a predicate; (2) it is a logically simple subject; (3) it remains identical with itself with respect to any manifold; (4) it is distinct from external things. The subject of these propositions, the condition of all experience which is not itself an experience, is strictly distinct from the self existing in space and time. The proud name of rational psychology must therefore yield to the modest title of an elucidation of transcendental self-consciousness. But the four synthetic propositions that the ego is (1') a substance, (2') is simple, (3') is a person, and (4') is indubitable with regard to its existence, can only claim validity once we presuppose the corresponding sensible intuition (cf. B 409). These propositions fall within the competence of empirical

psychology, a discipline which thereby acquires an enhanced status in Kant's eyes. Even the special case of 'self-knowledge' depends upon empirical intuition, however indeterminate the latter may be.

The Fourth Principle. In Descartes the 'I think' (the *cogito*) implies the existence of the thinking being so that we should say more precisely: 'I exist thinking' (B 420; 428), thus connecting self-consciousness directly with a consciousness of real existence. Kant also recognises the unique character of self-consciousness, the immediate dimension of self-acquaintance, the privileged access of first person experience. But all this is entirely empirical in nature. The decisive argument here – namely that 'existence' is not a real predicate – is repeated in Kant's subsequent criticism of the ontological argument (cf. Chapter 19.3 below). The alternative view implies a previously overlooked and problematic consequence: if conceivability necessarily involves existence, then 'the property of thought would render all beings which possess it necessary beings' (B 422, footnote).

The failure of the attempted demonstration of immortality would appear to have disastrous consequences for morality and religion, at least for those forms of belief which affirm the idea of judgement after death and therefore presuppose the continuing existence of the soul. But the first *Critique* also shows that concern in this regard is entirely unjustified since the conclusion to be drawn is far from disastrous and actually furnishes us with what could be described as a 'better alternative'.

In the first place, the demonstration of immortality is not refuted because we are in a position to demonstrate the opposite view that the soul is intrinsically mortal. Since rational psychology is incapable of knowing the truth of either claim, or of knowing anything else, it cannot properly 'be regarded as a science of pure reason' (B 403; cf. *CJ*, Section 89) or treated as a 'doctrine'. But it can be justified as a 'discipline' which restrains the 'constant tendency to disobey certain rules', in this case, the tendency to extend our reason 'beyond the narrow limits of possible experience' (B 737ff.; cf. B 420f.). It preserves us from 'idly substituting fancies for concepts and words for things' (B 738), and thereby counters both the 'soulless materialism' which simply regards the thinking subject itself as matter as well as the unfounded and enthusiastic 'spiritualism' which is its counterpart (B 421; cf. also A 379 and 381ff.). And in the second place, the first *Critique* opens up a new approach to the question of immortality: there

where theoretical reason fails, practical reason steps in with its postulates of God and immortality (cf. Chapter 21.3 below).

17.3 The Dualism of Body and Soul

Although the natural sciences may well be interested in voluntary human action, they do not enquire into the immortality of the soul, the existence of God or the freedom of the will itself. For subject matter of this kind provides no profitable field of research for the sciences (cf. B 826). The first part of the 'Dialectic' thus appears to possess a purely negative significance for philosophy, and no significance whatsoever for the empirical sciences. But ever since the time of Cartesian dualism philosophers have argued constantly about the problem of body and soul, or more precisely the problem of mind and body, a question which also inevitably has implications and repercussions for the empirical sciences. How do bodily phenomena, such as metabolism, the action of the heart, or the processes in the brain, relate to mental or apparently subjective phenomena such as dreams, thoughts, wishes, expectations, feelings and sensations? It is true that the 'task of explaining the communion of the soul with the body' does not strictly belong to the problem addressed in the chapter on the paralogisms, which is solely concerned with 'the personality of the soul even apart from this communion (that is, after death)' (B 427). But Kant certainly intends his transcendental idealism to furnish a 'sufficient answer' to the question concerning the communion of soul and body. But this answer responds only on a very general and fundamental level, and naturally therefore does not address many of the problems and alternative solutions that are often discussed today.

If, for the sake of argument, we accept a substantialist dualism of the Cartesian kind, we can formulate three fundamental positions: (1) *interactionism* interprets soul and body as two different and separate substances which nonetheless exercise a reciprocal influence upon one another. A process within consciousness, such as the desire to get up in the morning, causes the physical and bodily processes of sitting up and getting out of bed. On the other hand, a physical process, such as the sound of the alarm clock, causes a process of consciousness, either the desire for sleep with the physical consequence of turning off the alarm, or the desire to start one's work with the physical

consequence of getting up. On the one hand the cause of action lies in the (mental) decision to get up, on the other in the perception of the physical sound of the alarm; (2) if, however, we regard the (internal) reciprocity of two fundamentally different substances as something that is extremely difficult to understand, we may seek the external explanation of action in a *deus ex machina*: a divine intervention which either continuously sustains the correspondence between body and mind or effects it as required on each relevant occasion (hence the expression *occasionalism* from the Latin term *occasio*); (3) *psycho-physical parallelism* rejects this external explanation as entirely supernatural in character, and treats mind and body as separate substances which exercise no influence upon one another at all. The physical causal series and the mental causal series unfold independently of one another, but nonetheless in parallel on account of a pre-established harmony, like that between two synchronised but unconnected clocks (cf. Leibniz's letter to Basque des Beauval of 13 January 1696 or, even earlier, Arnold Geulincx in his *Ethica* of 1691).

Although Descartes generally defends interactionism, he also adopts a form of parallelism in his work *The Passions of the Soul* (Part I, Section 31); the leading Cartesian philosopher Malebranche propounds occasionalism and Leibniz espouses parallelism in the context of his theory of pre-established harmony. In his *New System* it is true that Leibniz also defends the two other views we have identified, which he describes here as 'the path of influence' and 'the system of occasional causes'. In the A edition of the first *Critique* Kant already emphatically rejects all 'three methods of explaining' the relation between the soul and the material world, although he does not co-ordinate them with any specifically named philosophers. He treats the first form of explanation as the one typically adopted by 'common sense', and discusses the other two as 'objections' to the former (A 390 ff.). Since positions 1 and 3, at least, have continued to find defenders to this day, Kant's criticism of these views, and the substance monism of transcendental idealism which he proposes as an alternative, remain of considerable philosophical interest. But instead of engaging directly with the more modern position defended in the first *Critique*, many contemporary writers, as we have already indicated, still prefer to concentrate their criticisms upon the Cartesian approach (cf. Damasio 1994 and its symptomatic title *Descartes' Error*; cf. also Singer 2002: 144ff.).

Kant discusses the problem of the relation between soul and body in the context of the fourth paralogism of ideality (A 384 ff.). In this connection he acknowledges both the question concerning 'the possibility of the communion of the soul with an organised body' and the almost insuperable difficulty of providing a fully satisfactory answer to it. For how can two such heterogeneous substances ever enter into an intelligible communion with one another? Kant then furnishes a sort of radical critique of ideology or 'freeing of reason' (A 388) from the 'whole difficulty we have made for ourselves' (B 387) by 'hypostatising what exists merely in thought' (B 384). Kant had already indicated his own proposed solution in the appendix on the 'Amphiboly': the 'matter whose community with the soul has produced so many difficulties is nothing but [...] a certain mode of representing' (B 385) on the part of outer sense. Matter is an appearance, that is, 'substance which appears in space' (B 321; A 265): 'it is not, however, outside us, but is only a thought in us, although this thought, through [...] outer sense, represents it as existing outside us' (A 385).

Kant applies this critical motif, the confusion of appearances with things in themselves, to the three explanations of the community of soul and body. He does not raise a 'dogmatic' claim to explain the relation between soul and body better or more 'fully' than the alternative views. His own 'critical objection' merely shows that the proffered explanations are 'unsupported' but not that they are 'wrong' (A 388). Initially Kant appears to endorse the critics of interactionism who accept the heterogeneity of substances, keep the physical to the physical and the mental to the mental, and thus exclude any reciprocal relationship between the two. But this objection is only convincing, as Kant observes, if we already accept the dualistic presuppositions of interactionism, and regard matter as an 'object in itself' that 'exists outside us and independently of all sensibility'. But since, in truth, matter is already an appearance, such criticism of interactionism is a 'quite meaningless objection' which treats the 'mere representation' of matter as an 'external cause' (A 390). One can of course, as Kant further points out, posit some 'third being', irrespective of whether this is conceived as God, in addition to mind and body, one which can provide 'if not interaction, then at least some correspondence or harmony between the two' (A 391). But psycho-physical parallelism equally presupposes a dualism that has not been rationally

justified, and this theory too is 'overthrown' once its 'alleged foundation' is removed (A 389). The only remaining position for Kant is thus a substance monism for which 'our body may be nothing more than a fundamental appearance which [...] serves as a condition of our whole faculty of sensibility, and therewith of all our thought' (B 806).

Today, of course, the problem of mind and body is more likely to be discussed in terms of 'properties' than of 'substances'. Thus we may ask whether mental predicates such as sensations of colour, smell or pain can best be understood within a monistic or a dualistic framework. This question is not, as such, directly relevant to the transcendental level of Kant's analysis which is essentially concerned with the role of the 'unconditioned' in the context of rational psychology. But the first *Critique* does suggest an appropriate response to this question, and once again it is monistic in character. On a very fundamental level, this position supplements the substance monism and the secondary property dualism already discussed above (cf. Chapter 17.1) with a primary property monism which denies that mental and physical properties are essentially different in kind. It is true that this property monism is only valid with reference to the theory of knowledge and the theory of nature, including actions and expressions of will as considered in this context. For, 'in accordance with a maxim which is inviolable, and which is so fundamental that without it we should not be able to employ reason in any empirical manner whatsoever', we must treat the expressions of free will 'in the same manner as all other appearances of nature, namely, in conformity with unchangeable laws' (B 826). Thus it is a strict methodological postulate of all empirical science, including the cognitive sciences, that it continue to seek out the relevant scientific laws and explain everything in terms of the latter. Kant's corresponding property monism thus possesses the status of a methodological postulate.

According to Kant the world of nature is a causally closed world. A series of events can only be considered objective if it can in principle be explained in accordance with causal rules. Since the reciprocal relation between physical and mental phenomena also belongs in the same context, even the world of human action is a causally closed world from the empirical point of view. Nonetheless, the causality of nature does not have the final word. With respect to the world of

nature and our objective knowledge of that world the first *Critique* propounds a monism of body and soul, a substance monism and a primary property monism, but Kant also defends a dualism of nature and freedom, of the world of appearances on the one hand and the noumenal world of morality on the other. In addition to the supra-empirical moral noumenon, the first *Critique* also acknowledges a pre-empirical noumenon which produces its own specifically transcendental problem concerning body and soul: how does the 'real' which is not yet appearance, which is the unknown impact which gives rise to sensation, relate to the world of appearances or phenomena? Kant grants that matter, since it is itself already an appearance, is 'produced by some sort of outer objects', and this suggests that he is treating the 'true (transcendental) object of our outer senses' as a kind of cause. But Kant immediately goes on to say that no one 'can have the right to claim that he knows anything in regard to the transcendental cause of our representations of the outer senses' (A 390f.). What is outside us remains, as we have seen, 'an unknown object' that 'in its character of appearance [...] is only a thought in us' (A 385).

One may well sympathise when Kant freely confesses his 'own ignorance' (A 383) here, a Socratic ignorance which is indeed a definitive rather than temporary *ignoramus*. But any philosopher who wishes to clarify and explore the ultimate nature of things will also naturally regard such ignorance as an epistemic scandal that should at all costs be eliminated. For the 'consciousness of my ignorance', as Kant himself points out, 'instead of ending my enquiries, ought rather to be itself the reason for entering upon them', unless, he adds by way of qualification, 'at the same time this ignorance is recognised as being necessary' (B 786). And this qualification is indeed required. Kant's various remarks in this regard can be brought together and formulated as a three-part argument: 1. If objective knowledge is to be possible we must first be affected from without; 2. Since that which affects us is by definition neither sensible intuition itself nor something already elaborated and developed by the understanding, it must be pre-empirical in character; 3. Since objective knowledge is only possible under the conditions of sensible intuition and discursive understanding, that which affects us is necessarily inaccessible for any cognition whatsoever.

17.4 Some Alternative Positions

In order to grasp and identify Kant's own position more precisely, we may briefly consider two alternative approaches to the relevant issues, one classically defended in the middle of the 19th century, and the other prominently represented in the current philosophical debates.

1. *The Psycho-physics of Fechner*. Leading contemporary philosophers of mind regard the modern debate as beginning essentially with the contributions of thinkers like J. J. C. Smart (1959) or H. Feigl (1967). But long before this time Gustav Theodor Fechner had already developed an influential theory which was later still highly regarded by Einstein and which is interesting in two respects with regard to any systematic appraisal and examination of Kant's contributions (for Fechner cf. Heidelberger 2002).

In the *first* place, and building upon the work of E. H. Weber, Fechner formulated a 'fundamental psycho-physical law' according to which the subjective strength of our sensations (the psychological aspect) is proportional to the logarithm of the physically quantified strength of the sensory stimulus. This empirically testable law has been reliably confirmed for the greater part of the sensory continuum. The law also finds further technical application in the field of psycho-acoustics. And under the name of the 'Weber-Fechner law', it still furnishes the theoretical basis of the contemporary physiology of the senses (cf. amongst other literature, Krüger 1989–90; Schmidt et al. 2000²⁸: 207ff.). With respect to a narrow domain, therefore, Fechner is capable, in contrast to Kant, of raising the 'empirical doctrine of the soul' to the level of a genuine natural science. But he is specifically concerned here with the stimuli of outer sense, that is, with sensations that Kant himself believed were quite capable of mathematisation. Thus it cannot be said that he really refutes Kant at all. He simply extends the object of empirical psychology by including the psychological aspect of outer sense.

In the *second* place, Fechner defends a psycho-physics articulated on three levels, the final and most ambitious of which is certainly open to criticism from a Kantian point of view. On the first and most modest level, Fechner's psycho-physics furnishes a regulative maxim for scientific research, or an empirical postulate, according to which we should always expect to discover a thoroughgoing correlation

between mental and physical phenomena. This 'positivist and non-metaphysical' approach was also warmly welcomed by emphatic opponents of psycho-physical parallelism such as W. James (1891: 182). Today, in the light of major advances in neuroscience and the cognitive sciences, this postulate can safely be regarded as 'scientifically verified'. For we have become increasingly successful in correlating the various achievements of language-acquisition and 'cognition' in general, of the individual senses, of the different feelings of pleasure, fear or pain, with identifiable areas of the brain, and thus in describing and explaining them in terms of neural processes (cf. Churchland 2002; Karnath and Thier 2002; for the evolution of cognitive processes cf. Tomasello 1999).

On the second 'metaphysical' level, Fechner defends a 'double-perspective' approach. The living human being should not be treated as something composed of two heterogeneous substances, but regarded as a unity considered from two different perspectives. From within, from the first person point of view, this unity appears as a mental phenomenon, while from without, from the point of view of the observer, including that of the self-observer, the unity appears as a physical phenomenon. Thus 'from within' someone may experience a pain which 'from without' appears as a contraction of the muscles, as crying, or even as a scream (of pain). Fechner is thus repudiating two things here: both the unilateral causality which posits merely bodily phenomena as causes and merely mental phenomena as effects, and the reciprocal causality or interaction between body and mind. Finally, on the third or 'cosmic' level, Fechner defends the idea of a 'psycho-physical sea of the world' (1922⁸: 63) and the 'fundamental thought that consciousness in some form or other permeates the whole of nature' (1921⁵: vi). Apart from the lack of any supporting evidence or argument, such as Kant would rightly expect in this connection, we could also wish that Fechner had recognised the significance of the relevant 'paralogism' when he goes on to address the traditional question of life after death. For with his claim that 'death is only a second birth into a freer form of being where the spirit bursts out of its narrow confines just as does the child with its first birth' (1922⁸: 3), Fechner relapses into the very 'pneumatism' that Kant had already explicitly criticised (A 379).

2. *Kant as Analytical Philosopher? Davidson.* Amongst the recent contributions to the debate concerning mind and body, the 'anomalous

monism' defended by Donald Davidson represents a particularly striking position. It is 'anomalous', literally 'lawless', in the sense that it claims that mental events such as 'perceptions, memories, decisions, even actions' elude the 'nomological framework of physical explanation' which has long prevailed in the philosophy of science (1980: 73). And it is a 'monism' in the sense that it regards mental events as identical with physical events and consequently recognises only a single 'substance'.

Davidson contests psycho-physical both parallelism and interactionism, positions which he regards as forms of nomological dualism. He also repudiates both nomological monism, such as the materialism which equally assumes psycho-physical laws, and the anomalous dualism of Cartesian origin which rejects the idea of such laws. But given that nomological monism already emphatically repudiates dualism in either of its variants, Davidson focusses his own criticisms principally on the former. This is the 'classical identity theory' for which mental properties M can be identified with physical properties P by recourse to a bridge law 'M precisely if P'. Davidson rejects this identity of properties or types in favour of the more cautious thesis of an event or individual ('token') identity. Since there are no strict bridging laws, it is only individual mental and physical events that can properly be regarded as identical.

Davidson's alternative approach to the question of mind and body combines three principles which he argues are only apparently contradictory (ibid.: 73 ff.). According to the principle of 'causal interaction' all mental and physical events ultimately stand in causal contact with one another. And the principle holds in both directions. While mental events, such as perceptions, calculations or judgements, are caused by physical events, they also find expression in the latter. For it is a widely accepted view that reasons are themselves causes. If I act for a specific reason, such as the decision to get up, this reason is the cause of my getting up. According to the second principle of 'the nomological character of causality', events which relate to one another causes and effects fall under deterministic laws. Finally, according to the principle of 'the anomaly of the mental', there are no such deterministic laws which can assist us to explain and predict mental events.

Davidson does not consider the Kantian alternative of transcendental idealism which specifically avoids both spiritualistic and materialist positions, as well as the 'cosmic' dimension of Fechner's

psycho-physics. Instead he remains true to the prevailing 'dogma' of analytical philosophy of mind by effectively ignoring Kant and treating his contributions to the problem as insignificant. The fact that Davidson does not even mention Kant when considering the conceivable alternatives only shows how much he uncritically shares the fundamental assumption of the nomological monism that was supposed to be his principal target, namely the kind of materialism which, like that already defended by Hobbes (*Leviathan*, Chapter I), treats mental phenomena as essentially physical ones. Davidson nonetheless claims to be following Kant with respect to the point to be proved and to the argumentational strategy to be adopted. As far as the former is concerned, Davidson appeals to the *Groundwork* rather than to Kant's discussion of the 'paralogisms', and this appears to remove the problem of soul and body from its principally epistemological context and situate it firmly in the context of moral philosophy instead. And in fact Davidson is here addressing a problem which connects the *Groundwork* with the first *Critique*, namely that concerning the relationship between freedom and natural necessity. But from the perspective of the first *Critique* the problem is primarily one that concerns the theory of knowledge. Davidson's argumentational strategy of 'explaining away the appearance of a contradiction' may indeed be 'essentially Kantian' in character, but he is referring here to Kant's discussion of the 'Antinomies' which, again, is a doctrine pre-eminently connected with the theory of knowledge. Yet his approach is entirely un-Kantian in the sense that he fails to distinguish between two different problems concerning soul and body, one arising within the context of nature and the other arising from the relationship between nature and freedom. He thus fails to see that while Kant resolves the former scientific, and more specifically psychological, problem of the chapter on the 'Paralogisms' in an essentially monistic manner, he resolves the cosmological and simultaneously moral problem of the relationship between nature and freedom in an essentially dualistic manner. Last but not least Davidson overlooks the fact that Kant addresses both problems on the basis of his own transcendental idealism, a position which is quite different from that adopted by Davidson.

It is true that Davidson thereby overcomes the eliminative materialism of the early Rorty (1965), a position which repudiates the existence of the mental as such. Thus Davidson expressly rejects the 'nothing but' kind of reductionism which would claim, for example, that the composition of the *Art of Fugue* is nothing but a complex

neural event. But since he still defends a form of materialism, his own position, given the anomalous status of the mental, is more accurately described as an ‘anomalous materialism’.

The concept of ‘supervenience’ (from a Latin expression indicating the ‘additional’ presence of something) is one of the elements on which Davidson draws in order to refine and develop the earlier tradition of materialism. This concept was originally applied in the field of ethics (Hare 1952: Chapter 5.2.2; cf. also Scarano 2001: Chapter 3) and arose from the analysis of the naturalistic fallacy which attempts to derive the ‘ought’ from the ‘is’. According to the thesis of supervenience, it is true that normative properties such as ‘good’ and ‘bad’, ‘demanded’, ‘forbidden’ or ‘permissible’, cannot be derived from descriptive properties since something additional is also required. But as far as normative judgement is concerned, there is still a certain dependence of the normative upon the descriptive: if two objects, or two acts, are entirely identical with respect to their descriptive properties, one cannot judge one object as good but the other as bad, one act as morally permissible but the other as morally forbidden. In the philosophy of mind the concept of supervenience thus signifies both non-derivability and the fact that the same mental properties underlie two descriptively identical acts.

Since Davidson appeals to Kant’s approach in the *Groundwork*, we may try and apply the concept of supervenience to the problem of body and soul as presented there in the context of moral theory. In order to facilitate a productive engagement with Davidson, we should initially distinguish two levels of analysis. On one level, which is not particularly relevant to the *Groundwork*, a moral ‘act’ presents undeniably descriptive aspects for which the thesis of supervenience is convincing: although the specifically moral cannot be derived from the purely descriptive, two descriptively identical acts must be morally judged in precisely the same way. But with regard to the authentically moral aspect – and this is the central concern of the *Groundwork* – to the moral law, to strict moral commands and prohibitions, to moral disposition, and to the autonomy of the will, these descriptive aspects, along with the thesis of supervenience, essentially lose their significance. In this context the thesis becomes not false but idling or functionless. Thus we cannot furnish a single indubitable example of the moral dimension which is so decisive for Kant, of morality itself as respect for the moral law (*Groundwork*, IV: 407).

It is an implausible consequence of Davidson's materialist, ultimately physicalist, monism that moral (and all other necessary) properties are unilaterally dependent upon purely physical ones. In the case of morality Kant also rejects this 'anomalous' approach since he explicates the requisite concept of freedom not in terms of lawlessness, but in terms of a different form of causality with its own specifically moral laws. In the last instance, therefore, Kant defends a principled dualism with regard to the relationship between nature and freedom, drawing a rigorous distinction between the natural phenomenal world and the moral noumenal world.

Kant resolves the other, essentially epistemological, problem concerning the relation of soul and body on the basis of a philosophical position that lies beyond the alternatives of either materialism or immaterialism. Insofar as Kant addresses the problem of soul and body, which is not actually a principal theme of the first *Critique*, his own position is methodologically based upon the critique of knowledge itself. And this grounds the claim that the philosophy of mind can only properly be framed within the context of a transcendental critique of reason. From the substantive point of view, Kant's transcendental idealism implies that all objectively knowable reality concerns appearances rather than things in themselves, insofar as appearances always already form part of the mental world. Kant therefore defends monism as a form of mentalism rather than of materialism, but again this is a transcendental mentalism that fully acknowledges the particularity of the physical world and of one's own body. The physical world is mental through reference to outer sense, while the mental domain in the narrower meaning of the word belongs to the realm of inner sense.

From this we can already draw the following, still provisional, conclusion: the first *Critique* involves a complex position that overcomes the alternative of realism versus idealism, while partly acknowledging and partly repudiating the other alternative of monism versus dualism. From the epistemological point of view, Kant's position is monistic, both with respect to substance and property monism, because it remains entirely within the context of phenomenal reality. This monism is idealistic or mentalistic insofar as phenomena belong to the world of our representations. This 'insofar' of course implies a certain qualification and a simultaneous openness towards realism. For the (unknown) 'something' that affects our sense is not a representation.

In addition, Kant's form of mentalism is realist because the phenomena themselves signify a world that is strictly objective. Since, in the context of phenomena, Kant acknowledges the difference between the objects of both inner and outer sense, we can say that he endorses a secondary dualism within the framework of a primary monism. And finally, he is dualistic because he both acknowledges the 'something' that affects our senses and accepts the rigorous distinction of nature and freedom.

Notes

1. Christian Wolff had already explicitly drawn this distinction (1751²) and written specifically on both disciplines. It is noteworthy that, despite his pre-eminently philosophical interests, he had begun biographically, as it were, with his *Psychologia empirica* (1732), before proceeding to elaborate the specifically philosophical *Psychologia rationalis* (1734). Empirical psychology should be based on introspection, and its task is to describe 'what we perceive of our soul whenever we attend carefully to it' and to thematise the actual aspects and features of consciousness. Rational psychology should concern itself with the essence of the soul (and of spirit in general), demonstrate the incorruptibility of the latter, and prove the personal immortality of the human soul. From the middle of the 18th century onwards empirical psychology, now an established part of the empirical theory of nature in general, soon dedicated itself to a typical problem concerning the relation between soul and body, namely the precise connection between psychological and physiological processes. In the early 1780s Carl Philipp Moritz, a leading figure of the Berlin Enlightenment, founded one of the first journals orientated specifically to empirical psychology (under the title of *Erfahrungseelenkunde* or the 'theory of the experience of the soul', 1783–93). The journal was to concern itself explicitly with 'facts rather than idle moralistic talk' and covered an astonishingly broad range of subjects, from the 'theory of the nature of the soul' and the 'theory of diseases of the soul', through the 'theory of the signs of the soul' (dealing with dreams, presentiments, superstitions), to reflections on psycho-pathological questions and on issues of child psychology and the psychology of language.
2. Once again the discussion is based principally upon the briefer and more suggestive treatment provided in the B edition. Whereas the A edition focusses directly upon the logical fallacies of rational psychology, the second edition pays more attention to the broader epistemological context of the theory of consciousness. Kant engages here with the relevant concepts of substantiality, singularity and identity, and addresses the question how or whether the subject itself can be ontologically defined or determined. But it should also be noticed that he locates the refutation of psychological idealism in his earlier discussion of the 'postulates of empirical thought'. In the B edition of the 'Dialectic' Kant concentrates on the paralogism of substantiality, omits the critique of the fourth paralogism, and adds a specifically moral perspective to the critique of the substantial subject. But since even here Kant still fails to attain ultimate and requisite clarity in presenting his position, we have sometimes also drawn on the more extensive discussion in the A edition.
3. A fallacy deriving from a figure of speech. Cf. Aristotle, *Sophistic Refutations* 4, 166b10.

COSMOLOGICAL CONTRADICTIONS

18.1 Constructive Scepticism

In the chapter on the ‘Paralogisms’ reason turns within to focus upon the thinking ego, while in the chapter on the ‘Antinomies’ it turns outwards and examines the possibility in principle of attaining complete knowledge of the world. It is true that the second antinomy also touches upon the question of the immortality of the soul, but it does so in a specifically cosmological rather than a psychological respect. Kant begins by presenting a complete list of the rational perspectives, or cosmological ideas, which allegedly facilitate an absolutely complete knowledge of the world, but then proceeds to show how every such attempt only entangles reason in unavoidable contradictions or antinomies. Finally, Kant undertakes to resolve the (fourfold) structure of contradiction in which reason here finds itself entangled.¹

From the systematic point of view, the fact that reason here comes into contradiction with itself is the greatest ‘scandal’ of the ‘Dialectic’. And from the point of view of the actual development of Kant’s thought, the argument of the ‘Dialectic’ ultimately derives not from the question of God or immortality, but from the problem of ‘antinomies’ (*Letters*: No. 820/426). Prior to 1769 Kant had sought to elucidate the problem simply as an illusion produced by the understanding, but he later tells us that ‘the year 1769 brought me a great light’ (*Refl.* 5037). For with regard to the antinomies he now realised that ‘all the metaphysical art of the most subtle distinction cannot prevent this conflict’ and ‘the philosopher is compelled to turn back to the first sources of pure reason itself’ (*Prol.*, Section 51). It is worth noting in this connection that the chapter on the ‘Antinomies’ is by far the longest chapter in the first *Critique*. But we should not simply conclude from this that it also represents the very ‘heart’ of the work itself (Heimsoeth 1960: 5).

If the world is considered as the totality of all appearances that are connected with one another through laws, then it can be described as a 'cosmos' in the literal sense, namely as the orderly universe that is investigated by 'cosmology'. But as soon as reason yields to its natural desire to extrapolate a complete knowledge of the world on the basis of our fragmentary knowledge of the latter, it finds itself entangled in antinomies, literally in a 'conflict of laws' (B 434), not indeed a conflict afflicting the laws of nature or even the laws of right, but a conflict of principles within reason itself. For reason thinks the 'completeness' at issue in two radically different and apparently contradictory ways: either as the absolutely first term of the series of appearances (the relevant thesis) or as the infinite series in which each term is conditioned and only the series as a whole is unconditioned (the relevant antithesis).²

Like the earlier chapter on the 'Paralogisms' and the subsequent chapter on the 'Ideal of Pure Reason', that on the 'Antinomy of pure Reason' also serves to continue the central argument of the first *Critique*. For absolutely first terms are the 'intellectual beginnings' (B 494) or principles which rationalism or dogmatism trusts to furnish the kind of pre-empirical knowledge (the 'thesis') which empiricists repudiate (the 'antithesis'). We might expect particular authors to be correlated with these positions, but there is no detailed discussion of celebrated names like Descartes, Leibniz or Wolff on the one hand, and Locke or Hume on the other. Of these figures only Leibniz makes an explicit appearance, and he is actually defended, in the context of the third antinomy, against a false interpretation of his position. It is also remarkable to note that Kant's discussion of the second antinomy (that concerning the simple constituents of the world) makes no reference to the 17th and 18th century debates over atomism, even though he was quite familiar with these controversies from the earlier period of his thought (cf. his *Physical Monadology*). Presumably Kant regarded these debates as a confusion and conflation of philosophical issues with physical and mathematical questions, as the kind of 'marriage (*connubio*) between geometry and metaphysics' that he had still defended in the *Physical Monadology* (I: 480) but explicitly rejected in the first *Critique*. At any rate the chapter on the 'Antinomy of Pure Reason' only mentions the two ancient positions of Platonism and Epicureanism as the respective thesis and antithesis (B 499). For in these cases the decisively philosophical rather than merely physical

difference of their positions – with or without ‘intellectual beginnings’ – is most emphatically revealed.³ With regard to Epicurus, however, Kant also recognises that the relevant principles may have been intended merely as ‘maxims for the speculative employment of reason’, in which case Epicurus would have anticipated the ‘regulative ideas’ which Kant himself defends in the first *Critique* and thereby demonstrated ‘a more genuine philosophical spirit than any other of the philosophers of antiquity’ (B 499, footnote). The ascription of the antithesis to Epicurus itself may nonetheless appear questionable: with respect to the second antinomy since Epicurus actually defended atomism (i.e. the thesis), and with respect to the third antinomy since he also acknowledged human freedom which he famously explained by reference to the swerve in the motion of the atoms (i.e., once again, the thesis). But in both these cases, of course, Epicurus still remained faithful to the common core of the antitheses which was the decisive one in Kant’s eyes: the purely ‘empirical mode of explanation’ which emphatically repudiates all ‘intellectual beginnings’.

The contradiction between rationalism and empiricism here had naturally long been recognised as such. Kant’s originality consists in the precise and comprehensive manner in which he diagnoses this contradiction, and above all as a necessary contradiction rooted in the question at hand. Once again he draws upon his table of categories in order to derive the four cosmological ideas in accordance with the four categorial classes. As in the chapter on the ‘Principles’, Kant characterises the first two as ‘mathematical’ and the second two as ‘dynamical’, and co-ordinates each with a pair of contradictory propositions, namely the thesis and antithesis. The opposed propositions do not merely contradict one another, but, from the perspective of the corresponding alternative, are also self-contradictory. And according to Kant, even the logical subjects of these propositions, the rationalist and the empiricist concepts of the world, are internally contradictory since they imply a claim to absolute completion which is closed in principle to genuine knowledge. The general ‘plan’ for the ‘Antinomy of Pure Reason’ is presented at B 443, while brief summaries of the argument can be found at B 491 and B 494.

From the perspective of ‘quantity’, the cosmological question has played a significant role in philosophy from the very beginning: is the world limited in time and space or is it unlimited in respect of both? Since Kant generally relates the category of ‘quality’ to the domain of

perception, we will expect the second antinomy to relate to sensations and their intensity. And in fact Kant is here principally concerned with matter and its divisibility as the basis of sensations: does the world ultimately consist of absolutely simple parts, or is there nothing simple of this kind to be found, whether it be the atoms of Democritus and Epicurus or the monads defended in this connection by certain Leibnizians? From the perspective of 'relation', the cosmological question raises the problem of origination: in addition to the ordinary causality of nature, must we also posit an extraordinary causality of freedom with respect to events in the world? And lastly, the perspective of 'modality' concerns the existence of change: does this depend upon an absolutely necessary being, or is there actually no such being? In sum, therefore, we are presented with four pairs of opposites (see Table 18.1)

Kant rejects both alternatives in each case and argues that it is impossible to uphold either rationalist or empiricist theories concerning the world as a whole. And once again, he is responding to a practical as well as a theoretical interest. Since we are concerned here with nothing less than the 'foundation stones of morals and religion' (B 494), the solution of the problem of the antinomies is one for

Table 18.1

<i>Thesis</i>	<i>Antithesis</i>
1. (Quantity)	
The world is limited with respect to space and time.	The world is unlimited with respect to space and time.
2. (Quality)	
Every compounded substance in the world consists of simple parts, and nothing but the simple or what is compounded from the simple exists.	No compounded thing in the world consists of simple parts, and nothing simple exists in the world at all.
3. (Relation)	
In addition to causality in accordance with laws of nature, a causality through freedom is also necessary to explain appearances.	There is no freedom, and everything in the world happens entirely in accordance with laws of nature.
4. (Modality)	
An absolutely necessary being belongs to the world either as its part or its cause.	There is no absolutely necessary being, either in the world or out of it, that is its cause.

which 'the mathematician would gladly exchange the whole of his science' (B 491). It is true that many interpreters have referred the practical significance of Kant's argument exclusively to the third antinomy and the question of 'freedom or determinism'. But the first and the fourth antinomy also concern the question of God, the former addressing the possibility of creation, the latter the existence of the creator. And finally we should also note that the third antinomy itself is relevant to theological as well as purely moral questions. For it is primarily concerned with that absolutely first beginning of the world for which a creator God would be responsible, and only secondarily with that 'relatively first beginning' (B 478) which is implied by human freedom of action.

Since, according to Kant, empiricism and rationalism alike appeal to pre-empirical arguments in support of their positions, the conflict in question cannot be resolved by recourse to experience. With his own version of sceptical method, Kant effectively counters two earlier and traditional forms of scepticism. He explicitly rejects the kind of 'scepticism which makes short work with all metaphysics' (B xxxvi). With respect to the second form of scepticism, that of ancient philosophy, Kant does not repudiate it simply out of hand. On the contrary, he takes over the manner in which it liked to stage a free and open contest of contrary arguments⁴, assumes the role of 'impartial judge' (B 451), and accepts the initial outcome of this approach: the fact that neither side decisively defeats the other. For in the first three antinomies, at least, each side also succeeds in refuting its opponent.

What is really new is Kant's question concerning the relevant interest of reason that is involved here. And, again in agreement with ancient scepticism, he discovers that there are good grounds for both of the conflicting positions. The rationalist or dogmatic approach responds to a practical interest, namely that concerning the freedom of the will, to a theoretical interest concerning the architectonic character of reason itself (B 502f.), and finally to a didactic interest concerning the 'popularity' of philosophy. Empiricism, on the other hand, responds most emphatically to the theoretical interest which pre-eminently governs the first *Critique* (B 494ff.). But Kant raises an objection which advances the constructive solution of the problem of the antinomies: namely that both approaches say more than they know. Thus empiricist Epicureanism furthers knowledge, 'though to

the prejudice of the practical', while dogmatic Platonism, even though it 'supplies excellent practical principles', in the theoretical sphere 'permits reason to indulge in ideal explanations of natural appearances [...] to the neglect of physical investigation' (B 500).

18.2 The Transcendental Key

In his presentation of the four antinomies, and in his conclusions with respect to the first stage of the argument, Kant methodologically follows the tradition of ancient scepticism. But he emphatically rejects the second stage of the sceptical analysis. Instead of resigning himself to a perpetual suspension of judgement, he offers a constructive solution to the question of the antinomies. Since an undecidable 'host of reasons and counter-reasons' merely serves to endanger the 'honour' and 'security' of philosophy, 'a lasting and peaceful reign of reason' can only be established by a 'thorough enquiry' of the question (B 492f.). This idea of 'defending the honour of human reason' in the face of a fundamental conflict of thought goes back to Kant's very first work, *Thoughts on the True Estimation of Living Forces*. It is quite true that he was there concerned with an intellectual conflict between individuals, with a 'discord amongst the philosophers of all nations' (Section 125), whereas the discussion of the antinomies is concerned with a conflict within reason itself. In order to identify 'the point of misunderstanding' and expose the conflict in question as a 'mere delusion', Kant exchanges the role of the ancient sceptic, of the empirical observer of philosophical controversies, for that of a critical epistemic judge who establishes a new certainty, and thus a condition of peace, by recognising the ultimate ground of the conflict itself.

Kant may have encountered a certain precedent for the problem of the 'antinomies' in the Protestant theological controversies of the late 17th and early 18th centuries to which his attention had been drawn by Franz Albert Schultz, the Director of the Friedrich-scollegium where the young Kant was a student, even though the philosopher never explicitly refers to these controversies in his published work (Hinske 1972). Thus the Lutheran Johann Wilhelm Baier (1686) arranges his systematic comparison of Catholic and Protestant articles of faith in precisely the same way that Kant presents the antinomies. Bayer presents the Catholic articles of faith on the left

hand side under the title of 'Thesis' and the Protestant ones on the right hand side under the corresponding title of 'Antithesis'. And the theologian Paul Anton (1732) subsequently developed this antithetical structure into a fundamental concept of dogmatic theology, presenting it as an inner dialectic of faith that springs from original sin itself. If Anton's 'anthropo-theological' interpretation of these religious controversies were right, then Kant's response to the problem of the antinomies would inevitably appear hybriatic. For Kant attempts to overcome the contradictions which on this reading are allegedly rooted in man's fallen nature itself. To the extent that Kant's attempt to elucidate the problem of antinomies at least proves broadly convincing, he relativises the inner dialectic of faith that is postulated by Anton.

With respect to the antinomies analysed in the first *Critique* the fundamental misunderstanding, the 'inadmissible condition' (B 531), on both sides of the argument is the mistaken assumption that the thesis and antithesis represent exhaustive alternatives: *either* the world has a beginning in time, *or* it has existed from all eternity; *either* there are absolutely simple parts, *or* there are no such parts, etc. But Kant discovers a third possibility: that either, in the case of the mathematical antinomies, both sides are wrong, or, as in the case of the dynamical antinomies, that both sides are true.⁵ Thus an apparently irresolvable contradiction is turned into a resolvable conflict. But this possibility of transforming a contradictory opposition into an opposition of contraries cannot be discovered simply by confronting the opposing arguments with one another. Once again, we must draw upon the doctrine of transcendental idealism, and specifically upon the recognition that all knowledge requires intuition and that the cosmological ideas precisely lack such reference to intuition (B 518ff.). It is this lack which explains the apparently remarkable contradiction not merely between the contrary claims of the antinomies, but also within the central concept involved here: the 'world' lays claim to an absolute completeness which can have no objectivity because of the lack of sensible intuition. Whether conceived, with rationalism, in terms of an absolutely first beginning, or conceived, with empiricism, in terms of an infinite series, the world as an absolutely complete whole is never given within space and time. It can only be thought by us and is therefore a noumenon. To imagine that we can know the world in this sense is to commit a category mistake, is to confuse the thing in itself with the

sum of appearances. Consequently, we can neither claim, with rationalism, that the world is finite, nor, with the empiricist alternative, that it is infinite. Nevertheless, the expression 'world' is not meaningless since it furnishes an idea that governs our empirical research: to know the totality of appearances is the task that falls to ongoing and unlimited investigation.

Since the cosmological ideas no longer enjoy constitutive status, they must henceforth be regarded as regulative in character. As a further expression of the Copernican Turn, the cosmological ideas describe not the way in which the world as a whole objectively presents itself, but rather the way in which its subjective counterpart, the investigation of nature, advances towards a comprehensive body of knowledge. In the empirical sense we can only ever speak of a comparative, rather than an absolute, 'whole'. There is no empirical condition which could supposedly condition the unconditioned or represent, while remaining empirical, an absolutely final condition. Kant here transforms traditional philosophical cosmology, a substantialistic theory of 'totality in the object', into a methodology of investigation in accordance with the 'principle of the greatest possible continuation and extension of experience, allowing no empirical limit to hold as absolute' (B 536f.). As the totality of appearances, the world or universe is never intrinsically given or present, but only comes to light gradually, and never absolutely completely, through the ongoing process of investigation.

As in the earlier chapter on the 'Paralogisms', so too in the chapter on the 'Antinomy of Pure Reason', the doctrine of transcendental idealism accomplishes a threefold task and thereby once again acquires further independent confirmation of its overall validity. For only transcendental idealism can, firstly, diagnose the antinomy, secondly, overcome the antinomy itself, and, thirdly, reveal an original regulative function for the cosmological ideas.

In the case of the mathematical antinomies both opposing claims are false because they unite mutually exclusive terms, namely appearance ('the sensible world') and thing in itself (absolute completeness), under a *single* concept. (cf. *Prol.*, Section 53). In the case of the dynamical antinomies, on the other hand, both claims are true because the two competing forms of causality apply to different domains, the causality of freedom to intelligible objects, the causality of nature to phenomenal objects. In the juridical sense, therefore, we can say that

both parties enjoy a partial right: with regard to their respective fields of application the opposition between the causality of nature and the causality of freedom is one of sub-contrary rather than contradictory terms. Whether we adopt the standpoint of nature or of freedom, we acknowledge that one part of the world process observes the causality of nature, while another part obeys the causality of freedom.

In all four antinomies the opposing parties deploy the same kind of argumentation. By appealing to indirect ('apagogical') rather than direct ('ostensive') proof, they rightly demonstrate in each case that the contrary position is self-contradictory, but they wrongly conclude from this that their own claims are correct. This procedure may possess the advantage of greater 'clearness of presentation', but it must 'be regarded rather as a last resort than as a mode of procedure which satisfies all the requirements of reason' (B 818).

Kant begins his discussion by showing that the cosmological idea is either too small (in the thesis) or too large (in the antithesis) for every empirical concept (B 514ff.). In the first antinomy, for example, the thesis that the world has a beginning in time is too small since 'the beginning still presupposes a time which precedes it', while the antithetic claim that there is no beginning is too large since it 'can never reach the whole eternity that has elapsed'. Only in the fourth antinomy do we find the reverse situation: the existence of an absolutely necessary being falls in 'a time that is infinitely distant from every given point of time', and this is '*too large* and inaccessible to an empirical concept', while the existence of a merely contingent world is *too small* for our empirical concept.

Once again Kant essentially mounts a critique of ideology by undertaking to unmask the 'false consciousness' he finds here. Whereas traditional metaphysics had reified the 'ideas' in a rationalist or empiricist, or positivist, manner, the first *Critique* interprets them dynamically and thus reveals even the most recent and comprehensive expressions of natural science as inevitably partial and incomplete. Kant does not challenge the attempt to develop scientific theories about the universe itself, to furnish physical cosmologies or 'theories of everything'. Nor does he reject the astrophysics which explores the spatial and temporal parameters of the cosmos, or the microphysics which investigates the smallest possible particles or constituents of the material world. But he does repudiate a certain self-understanding on the part of science, namely the typical expectation that science can

discover absolutely final answers. We can see that the claim to total completeness is intrinsically antinomic if we assume that the age of the universe is finite. For this claim contradicts the principle of the conservation of matter. Where was matter before the beginning of the universe? Absolute completeness, as a noumenal telos, in principle eludes an investigation that depends on the examination of phenomena. Thus we can see that Kant acknowledges the open-ended character of scientific investigation in a more fundamental way than is the case with the rather obvious fallibilistic approach of modern philosophy of science. As far as the scientific investigator is concerned the cosmological ideas thus amount to a kind of *memento mori* ('Remember that thou must die'): whether on the macroscopic or on the microscopic level, and irrespective of whatever significant theory we may develop or discover we may make, the investigations of science will never reach a final frontier.

18.3 On the Beginning and the Divisibility of the World

In the mathematical antinomies, each thesis could only refute the other by assuming one of two possible alternatives, one based on the concept of finitude, the other based on that of infinitude. But in fact there is a third intermediate possibility: that the infinite is not actually given (in-finite in the sense of un-ending), but is potentially given (the in-definite in the sense of in-determinate). Since the presupposition of each is false, both positions fail. Neither claims concerning an absolutely first beginning (with respect to space and time or the divisibility of matter), nor claims asserting the opposite, can properly be justified.

We may note with some surprise that the first antinomy is concerned not only with the entire history of the universe, but also with the pre-history of 'the men now living'. For if we retrace 'the series of their ancestors', we can 'ascend in infinitum' since we are 'justified and at the same time obliged, in the case of every ancestor, to search further for progenitors' (B 540). The series runs indeterminately far back and is thus indefinite rather than infinite. Kant therefore rightly addresses the question concerning the cosmological beginning both in terms of the beginning of humanity and of the beginning of the universe. Both issues appear to be involved with one another, and both also clearly

raise the same fundamental theological question: must we presuppose an original creation, a beginning of all time?

In the second antinomy, concerning whether the world is composed of ultimately simple parts, Kant questions the epistemic status traditionally ascribed to the predicate 'simple' or 'non-simple' in this connection. Once again, he indicates a third intermediate possibility that has been overlooked by the earlier parties to the dispute: material substances do *have* no parts, but they are *divisible* into other material substances. Since the *monas* is a fundamental concept in the philosophy of Leibniz, we might have expected Kant to engage directly with his thought here. But Kant understands Leibniz's monad as an immediately given simple substance, such as 'self-consciousness' for example, and not, as in the second antinomy, 'as an element of the composite, which is better entitled *atomus*' (B 470). That is why Kant does not discuss Leibniz himself, but the 'monadists' (B 467; 469) who conflate philosophy with physics and thus misrepresent Leibniz's essentially metaphysical doctrine of monads as a physical and mathematical theory of elementary substances. The atomism of the thesis is thus contradicted by the anti-atomist antithesis. For the thesis the division of the composite is a finite process, for the latter it is an infinite one. Kant's alternative lies in a critical concept of matter which the theory of 'dynamics' in the *Metaphysical Foundations of Natural Science* formulates as follows: 'matter is *infinitely divisible*, and indeed into parts which are also in each case matter' (IV: 503).

Originally influenced by Wolff and Baumgarten, Kant himself had been a 'monadist' in his early *Physical Monadology*. And the 'second proposition' he defends there already resembles the thesis of the second antinomy: 'Bodies consist of monads' as 'original and absolutely simple parts' (I: 477). The 'fourth proposition', on the other hand, resembles the antithesis of the second antinomy: 'A composite, that is infinitely divisible, does not consist of original or simple parts'. In the *Physical Monadology* Kant avoids the looming contradiction because he accepts infinite divisibility solely with regard to (mathematical) space, and not with regard to (physical) bodies. This approach furnishes an excellent example of that 'marriage of geometry and metaphysics' (I: 479f.) which we have already mentioned insofar as it combines a mathematical anti-atomism with a 'metaphysically' atomist theory of nature.

This 'marriage' is based on a kind of epistemological realism: space is treated as a thing in itself that is indeed infinitely divisible, but only in mathematical and not in physical terms. For bodies with their 'space-filling forces' are only divisible to a limited degree. But once space is regarded as an a priori form of intuition that makes objective knowledge possible, then the problem of divisibility assumes the status of an antinomy of reason. And transcendental idealism here plays a twofold role insofar as it both exposes the relevant antinomy and provides the key to its resolution: the transcendental ideality of space explicitly reveals a previously overlooked antinomy, but one which is overcome, in turn, by the acknowledged empirical reality of space. Transcendental idealism therefore diagnoses both the ailment afflicting reason, namely its inner conflict with itself, and the only therapy that can properly cure it.

Are Kant's proposed solutions (potential infinity in the first antinomy and infinite divisibility in the second) plausible options as far as the scientific investigation of nature is concerned? The first solution appears to be supported by the fact that astrophysics, for all its tremendous advances, is still confronted by further far-reaching questions, either with respect to specific problems such as dark matter ('black holes') and the great plurality of natural constants, or with respect to the appropriate scientific interpretation of the universe as a whole. We still continue to work with 'theories' that cannot simply be empirically verified, appealing to hypotheses, and sometimes mere thought experiments, rather than to experience in the usual sense. The fundamental difficulty that is addressed in the first antinomy cannot be resolved by any of the three principal contemporary groups of theories concerning the origin and development of the universe (cf. Hawking 1988 and Treichel 2000):

(1) According to the now widely accepted 'big bang' theory, the universe began between 11 and 15 thousand million years ago through an original gigantic explosion at a zero point of time, generating matter of a singular, effectively infinite, density at an incredibly high temperature. Even if we regard this theory as scientifically 'correct', it still wouldn't confirm, for example, the position defended by the thesis of the first antinomy. For it has nothing to say about what precedes the big bang. It does not address the question of an absolute beginning

of all time which might involve a kind of creation. This prompts the second principal theory.

(2) Perhaps the big bang was preceded, in initial contrast to the subsequent expansion, by a process of extreme contraction (the 'big crash'), the opposite of big bang as it were. Since this implies that the 'currently existing world' was preceded by an 'earlier existing world', the question concerning the 'finitude or infinitude of time' is simply raised all over again. Indeed in antiquity Epicurus had already claimed that the universe has always existed through an infinite period of time (cf. the *Letter to Herodotus*, Sections 39 and 41). And in recent times P. Steinhardt, for example, has argued that time is just as infinite as space, that the evolution of the cosmos involves a cyclical process, with infinitely numerous small explosions which, after long phases of expansion and contraction, give rise to infinitely numerous small collapses. This 'steady state theory' has subsequently been developed into a variety of so-called 'inflation theories', theories which posit some tremendous and incredibly rapid process of distension (as in the work of B. A. Guth for example). Since such theories involve the assumption of an infinite stretch of time, they correspond to the position of the antithesis in the first antinomy. But with respect to the decisive point, the concept of infinitely persisting time, they too cannot be confirmed either directly or indirectly. Perhaps the universe that is visible to us today is itself merely a relative totality, i.e. a part of some greater actual universe.

(3) There is an intermediate position that is defended by theories which, like those in the second group, accept the possibility of a constantly changing and developing universe, but are not similarly committed to the idea of the fresh production of matter. On the other hand, these theories endorse, like those in the first group, the idea of a first beginning of the world. But since they refrain from any 'speculation' concerning the ultimate character of this beginning, they do not decide for either of the two options (for either an absolute or a merely relative beginning).

We can draw the following provisional conclusion from these reflections. The cosmological question concerning the beginning of the world can hardly be answered definitively in physical terms. Kant is making a critical and epistemological, rather than a physical or scientific, claim that is not confirmed by physics itself. But the kind of

modesty this claim enjoins remains valid for us to this day: 'The observations and calculations of astronomers have taught us much that is wonderful; but the most important lesson that they have taught us has been by revealing the abyss of our ignorance, which otherwise we could never have conceived to be so great' (B 603; footnote).

With respect to the second antinomy, the situation is much the same in contemporary microphysics. If science initially regards certain parts of matter as atoms in the literal sense (as 'indivisible'), it must eventually discover that these too are composed of parts, namely the electrons that belong to the outer structure of the atom, the protons and neutrons which belong to the inner atomic core, particles which themselves soon prove not to be the very smallest particles after all. For there are various kinds of quarks, bosons and gluons, not to mention the photons and the Higgs particles. The recent development of 'string theory' assumes, in place of waves and particles, incredibly fine threads or strings, even super strings, which vibrate rather like those of a violin. Yet on account of their extreme minuteness (they are as tiny in relation to a proton as a proton is tiny in relation to the solar system!), such strings elude the reach of any conceivable scientific experiment. Given the discovery of ever more numerous, ever more minute, and ever more evanescent elementary particles, one might be tempted to claim, with the second antithesis, that there can be no end in principle to our analysis. But the decisive question, that concerning the finite or infinite divisibility of matter, once again could hardly ever be answered empirically. It might indeed seem as if the instruments used in scientific research also set limits to the further progress of investigation. Yet the limits which are currently imposed by particle accelerators and electron microscopes are purely technical and pragmatic in character, rather than fundamental limits in principle. The physicist R. P. Feynman (2001: 195) has criticised self-important philosophers who 'seize on the possibility that there may not be any ultimate fundamental particle, and say that you should stop work and ponder with great profundity' instead. More careful and thoughtful philosophers like Kant, however, would only endorse the first part of this proposition (that there is no 'definitive elementary particle'), while emphatically rejecting the second part (that we should 'call a halt to our work'). (For the contemporary debate concerning elementary particles cf. Frauenfelder and Henley 1991²; Falkenburg 1994; Genz 2003).

18.4 Cosmological or Practical Freedom?

The analysis of the third antinomy is the most frequently discussed section of the whole 'Dialectic' and the resolution which Kant proposes for it receives a far more extensive treatment than any of the other antinomies. This alone, of course, does not indicate that it is more important than the others, though it may well be that his resolution of this antinomy gives rise to a greater difficulty insofar as it involves an extension, and perhaps even a certain shift, with respect to the original problem. Kant begins, appropriately in the present context, with freedom as a concept of natural philosophy, or cosmological freedom, before moving on to discuss freedom as a concept of the theory of action, or practical freedom proper. In order to see if this transition from one concept of freedom to the other really violates the original context of the problem, we must first briefly consider the ambiguous question of 'freedom' more generally. For the third antinomy also helps to clarify the various senses in which the concept of freedom is used, even if Kant's proposal in this regard itself requires further clarification (for Kant's theory of freedom cf. Allison 1990; for a systematic, albeit largely empirically oriented, account of current debates on the issue of freedom cf. Bieri 2001). Freedom can be defined in negative terms as an independence from all alien or external determination, while it can be described in positive terms as a matter of self-determination. An elementary form of freedom is already encountered in the pre-human realm where animals are not externally compelled to behave in a certain way, but act intrinsically on their own initiative as it were. Thus, in accordance with the specific kind of impulse or motivation in each case, Kant distinguishes between different forms of will (B 561f.; cf. also B 830 and 833ff.) which can be described as levels of freedom: (1) on the purely animal level, freedom or sensuous spontaneity ('Willkür' as *arbitrium brutum*) is determined or 'necessitated' by 'sensuous motives' (B 562). With respect to human freedom, also described as 'freedom in the practical sense' or 'sensuous will' ('Willkür' as *arbitrium sensitivum*), the will is not independent of all sensuous impulses, but it is not dependent upon 'coercion' by these impulses. That is to say, human action does not necessarily result directly from given sensuous determination. Formulated in positive terms, action in this sense is an expression of a free will (*arbitrium liberum*) that is determined by representations of the good and the

useful, namely by the 'objective laws of freedom which tell us *what ought to happen*, although perhaps it never does happen' (B 830), or by laws which enjoy the status of 'imperatives'. And, according to the specific range of our representations of the good, we can also distinguish three levels of (practical) freedom which progressively diminish or eliminate the influence of sensuous affection. These levels of freedom define the human will and differentiate it from the merely animal will, and are therefore listed below as levels 2, 3 and 4. Although these different levels are not explicitly presented in these terms in the first *Critique*, they nonetheless underlie the basic argument of the text:

(2) As far as technical laws or imperatives are concerned, the independence of the will with respect to sensuous affection is restricted entirely to relations of ends and means. This technical freedom, as we may call it, plays no role whatsoever either in the discussion of the third antinomy nor in the subsequent chapter on the 'Canon of Pure Reason'. (3) As far as pragmatic freedom is concerned, and the pragmatic laws or imperatives which correspond to it, the independence of the will also extends to 'happiness' as a natural end defined as 'what is desirable in respect of our whole state, that is, what is good and useful' (B 180). (4) On the highest level, finally, we make ourselves independent even of this end, and properly 'moral freedom' is now directed instead towards our 'worthiness of being happy'. It is thus only the laws of moral freedom, namely the moral law and the pure moral imperatives that spring from it, that completely exhibit and fulfil the possibilities of reason in the practical sphere insofar as they 'determine completely a priori (without regard to empirical motives, that is, to happiness) what is and is not to be done' (B 843f.).

(5) The third antinomy begins, in accordance with the immediate context, with what we have called the concept of cosmological freedom. The latter does not represent some higher level of freedom, but is presented, as an alternative to the causality of nature, within the context of the theory of knowledge, rather than within a specifically practical context. But Kant recognises (6) that cosmological freedom, in one particular function, namely as the transcendental idea of freedom or, in short, as transcendental freedom, constitutes the presupposition of practical freedom: if there is no such thing as independence of the will from all determining causes on the part of sensibility (cf. B 831),

then practical freedom falls by the wayside and strict determinism will inevitably triumph.

Let us attempt to draw out some of the essential steps in the argument here. In addressing the question of the complete and absolute reign of natural causality, the third antinomy also comes up against two alternative positions which are both internally and mutually contradictory. According to the thesis, we must assume a causality of freedom in order to explain the phenomena of the world, while the antithesis repudiates this claim and replaces it in favour of an infinite chain of causality. The thesis objects that it is impossible to run through such an infinite series and thus that the given causal effects cannot completely be explained. But if we therefore assume a causality of freedom, we must appeal – in opposition to the antithesis – to something that lies outside experience, to an ‘empty thought-entity’ (B 475), since there is no corresponding object for it within in the world of sensible intuition (cf. B 518). Yet the legitimate objection to the idea of such freedom – that a cause that is itself uncaused cannot be encountered in the domain of experience – proves less than the antithesis actually claims. For it justifies only a certain methodological determinism, rather than the dogmatic determinism that declares a causality of freedom to be impossible in principle. Every event, including every action, can be investigated with regard to the causes through which it is *potentially* determined. That we can neither reject the question of causal explanation, nor demonstrate that such a question cannot be answered, is something that is valid only for the domain of possible experience. Outside of this domain, therefore, in the non-empirical or the intelligible realm, we can still think the possibility of freedom.

Generally speaking, interpreters of Kant relate the third antinomy to the question of morality almost as a matter of course. And Kant is indeed concerned here with one of the ‘foundation stones of morals’ (B 494). But the full development of these considerations, namely the concept of morality itself, presupposes the freedom of the will, and although Kant is clearly fundamentally interested in this, it merely functions here as an ultimate governing perspective from a practical point of view. If we consider the text itself, there are at least four passages that already sow doubts about binding the argument so directly to the question of morality. The first substantive doubt in this respect emerges from the context of the discussion itself, which concerns the cosmological ideas and the extrapolation of research into nature

which they facilitate. The cosmological freedom under discussion consists in the 'power of spontaneously beginning a series in time', and here, in contrast to the first antinomy, what we are concerned with is not 'a beginning in time, but in causality' (B 478). And this freedom, once again, is directly relevant to theological questions (cf. Ertl 1998). For just as the first antinomy showed that it is possible at least to conceive the creation of the world from a temporal perspective, the third antinomy is supposed to show that we can likewise conceive the creation from a causal perspective.

A further cause for doubt is aroused by Kant's specific qualification of the freedom in question as 'transcendental' – to be understood in the sense of an a priori condition of the experience of nature (cf. B 25 and Chapter 4.3 above). It is consistent therefore, and this is a third cause for doubt, that Kant speaks in this connection of the 'origin of the world' (B 476), once again a cosmological rather than a moral question, and refers to the equally cosmological assumption of a prime mover. An event capable of '*spontaneously* beginning a series of successive things or states' (B 476) may indeed reveal a certain act-like character, but the subject in question here is not confronted by the alternative of 'duty or inclination' that is decisive for Kant's understanding of morality (cf. his use of the term 'imputability' in this connection). Cosmology does not, at least in any direct sense, enquire after the authentically moral subject, but only after one that spontaneously begins a series of events, that is, after the idea of a creator. Insofar as the latter inaugurates the very first series of events, it can be described as creator in the singular and capital sense: as the Creator of the universe. A human being, on the other hand, can only ever inaugurate a 'first' series of events in a relative sense. Wherever human beings actualise their freedom of action, they do indeed inaugurate a new series of events. But in contrast to the great Creator, they can never bring more than a lesser creation into being.

In the fourth place, when Kant does speak of human beings and their freedom, he does not instance any specifically moral examples, such as those connected with honesty or mendacity. And the decisive alternative of 'duty or inclination' is not so much as even suggested in the background. Instead of this, Kant simply cites an entirely everyday kind of act, indifferent to moral considerations, such as that 'I at this moment arise from my chair'. Nonetheless he describes this given 'event' as free because it derives from my own 'resolution' (B 476).

Kant is content to refer to the perfectly ordinary freedom involved in a self-caused event, as distinct from the externally caused event in which someone might jump up from his chair by automatic reflex, for example, because he has just sat down on a drawing pin. This touches upon the anthropological question whether the human being differs from other beings, whether 'I am free in my actions or, like other beings, am led by the hand of nature and of fate' (B 491). The ordinary freedom of action we have described is all that is required here, namely the responsibility for one's acts which is so important in a legal context: the fact that the agent is the doer of his acts. Of course, the fact that the spontaneity of causes is qualified as 'absolute' (B 474) certainly suggests something more in this connection. But, in the cosmological context here, the states and conditions in question are states and conditions of the external world, rather than inner states or conditions such as motives and intentions. Hence a morally neutral act like rising from one's chair can already be regarded as 'completely free'.

But why then does Kant's 'observation' on the thesis of the third antinomy speak of the 'freedom of the will' right at the beginning of the discussion (B 476; and similarly B 503)? Here Kant is simply indicating his ultimate governing perspective, one which is only thematised indirectly in the discussion of cosmology. He only directly addresses the question of morality later, in the 'Canon of Pure Reason', whereas now he is only discussing something already presupposed by the freedom of the will: that transcendental freedom without which moral freedom cannot be thought at all. For while the freedom of the will is certainly not a cosmological object, it does have a cosmological presupposition. But to grasp this connection properly one must, of course, also consider something of the other side of the question.

It is for this reason, and not because he has effectively changed the theme under discussion, that in his resolution of the third antinomy Kant also introduces concepts which no longer strictly belong to cosmology, but rather to a morally oriented psychology (and theory of action), and which therefore furnish important components for a moral philosophy proper. Thus Kant distinguishes between human and animal will, introduces the concepts of imperatives, of obligation, of willing, and clearly indicates his objection to the naturalistic fallacy by stressing the utter heterogeneity of the 'is' and the 'ought'. His distinction between the empirical and the intelligible

character (B 574ff.) plays a particularly significant role here: although the human being belongs to nature from a sensuous perspective, he is also free from an intelligible one. Thus, in the case of a malicious lie, we may enquire after its empirical origins (arising from inadequate education, bad company, foolishness or thoughtlessness, for example), but can nonetheless still hold the liar responsible for the act.

Even if it is true that Kant could have developed his argument more clearly, all these elements are important for the decisive point which most theories of freedom have hitherto overlooked: the limited range of all those approaches which have interpreted freedom as lawless, as uncaused, or as a limiting concept of the (never fully) knowable. While Kant's alternative conception of transcendental freedom rejects the exclusive dominion of laws of nature and of the causality of nature, it does not leave the place thereby secured for freedom a vacuum, but fills it with different kinds of laws and a different kind of causality. These are the practical laws we have already mentioned: firstly technical laws, then pragmatic laws, and finally, with complete freedom, moral laws. The latter assume the status of imperatives for beings that are subject to the influences of sensibility, and function as reasons that can bring about actions. The antithesis of the third antinomy proclaims the exclusive dominion of the causality of nature, the thesis contradicts it by appealing to a second kind of causality, while the proposed resolution of the antinomy ascribes a specific domain to each kind of causality, in the first case that of nature and in the second case that of morality.

Notes

1. The concept of antinomy makes an appearance both in the plural fourfold sense and in the singular sense (in the title of the second chapter of book II of the 'Dialectic' and in many other places). In contrast to Hinske (1970: 99ff.), I do not regard B 398 as indicating yet another third and singular use of the concept as an allegedly generic term for all three dialectical inferences. For when Kant speaks of 'these dialectical inferences' he is referring to the 'second kind of pseudo-rational inferences' which he has alluded to a few lines earlier, that is, merely to the class of the antinomies themselves and not to all three classes of the dialectic.
2. For further commentary cf. Schmucker 1990: 90–187), who nonetheless regards the 'antinomy' as essentially pre-critical in character, and Falkenburg (2000), who, like Malzkorn (1999), sets the antinomy within the general context of 18th century philosophy of nature, although she does not share his negative conclusion concerning the failure of this 'antinomy'.

3. A number of interpreters attempt to relativise the significance of the 'antinomy' by arguing that it essentially operates with a concept of the infinite which has been overtaken by later developments in the physics and mathematics of infinitude. But the 'antinomy' in question is principally concerned with disentangling philosophy from physics and mathematics. For this reason, the assessment of its validity is less affected by many of these subsequent developments than we might think, whether we are speaking of the modern mathematics of infinitude (contra Bennett 1974, Chapter 6) or of the concepts of the infinite currently deployed in astrophysics (theories of relativity) or microphysics (quantum theory).
4. Thus the ancient sceptic Carneades in Rome, around the middle of the 2nd century B.C., presented both a speech in favour of justice and one arguing against the concept (Lactantius, *Divinae institutiones* V, 14f.). Kant himself refers to the much earlier 'Zeno of Elea', whom he praises as a 'subtle dialectician' in contrast to Plato's view of him as a 'mischievous sophist': Zeno 'maintained that God (probably conceived by him as simply the world) is neither finite nor infinite, neither in motion nor at rest...' (B 530).
5. In *Reflection* 5964 (XVIII: 406), Kant furnishes the following example: 'The flower is either red or blue, or neither of these: yellowish, or both at once: violet'.

CHAPTER 19

TRANSCENDENTAL THEOLOGY

19.1 A Complex Paradigm Change

Traditional metaphysics was both crowned and completed by God conceived as the absolutely highest or supreme being. And the ‘Dialectic’ explicitly takes up this question as well. While the ‘paralogisms’ address the unity of the inner world, of the subject, and the ‘antinomies’ address that of the external world, the final and most elevated part of the ‘Dialectic’, the chapter on ‘The Ideal of pure Reason’, is concerned with all-embracing unity in general. This is ‘the highest condition of the possibility of all that can be thought’ (B 391) and corresponds to ‘God’. While for Kant too we may say that God ‘completes and crowns the whole of human knowledge’ (B 669), his philosophy subjects the concept of God to a radical transformation. Within the general enlightened approach to our ideas about God which was already begun by the ancient Greek thinkers, Kant introduces a complex paradigm change of his own (cf. Höffe 1983). This change is the fruit of a long intellectual development on Kant’s part, who began by adopting the physico-theology of his early teacher Knutzen and gradually explored, and at various times defended, many possible versions of a metaphysical doctrine of God (cf. Förster 2001; and earlier Schmucker 1980 and Theis 1994).

Within the first *Critique* the paradigm change can be delineated in terms of at least seven stages of the argument. In this regard many interpreters only begin their account with the ‘Dialectic’, specifically (1) with the ‘Ideal of pure Reason’, while (2) merely casting a glance at the fourth antinomy. But in fact (3) the paradigm change already begins in the first antinomy and is continued in the fourth. (4) Kant’s theory of the two sources of human knowledge, together with that of the pure forms of intuition, already makes reference, *e contrario*, to the notion of intellectual intuition that is expressly reserved for God

(B 71f.). (5) The distinction between the qualitative category of *reality* and the modal category of *existence* is also directly relevant to the question of theology since it implies that existence is not a 'real predicate' (B 626). In this connection we must also (6) recognise the significance of Kant's philosophical perspective upon 'the as if' (cf. Chapter 20.3 below) and finally (7) the idea of God as a postulate of pure practical reason (cf. Chapter 21.3 below). Thus the first *Critique* leads just as emphatically towards a new theology as it does towards a new theory of morality, both of which are mutually entwined for Kant: his doctrine of God is a moral theology, but his conception of morality is autonomous rather than theonomous.

For Descartes the thinking subject was only a transitional stage on the way to the genuinely unshakeable foundation provided by God. And Newton could still argue that the 'most beautiful system of the sun, planets, and comets, could only proceed from the counsel and dominion of an intelligent and powerful Being' (*Principia mathematica*, 'Scholium generale'; p. 544). The *first* fundamental aspect of Kant's paradigm change involves a reduced status in this respect: the concept of God forfeits all capacity to ground our knowledge.

This epistemological demotion of the concept of God leads on to a *second* one: Kant rejects all attempts to obtain objective knowledge of God so ruthlessly that Heine (1997: 93) could describe the effect of his work as 'an executioner's sword that despatched deism in Germany for good'. Even if God remains the ultimate end and aim of all thought, it is quite clear to Kant that it is impossible to demonstrate his existence. And although it is equally impossible to demonstrate the non-existence of God, Kant goes beyond the purely sceptical conclusion that we should simply suspend our judgement either way. Since God is a noumenon considered from the perspective of the theory of knowledge, one may, in the *third* place, make the following conceptual claim: God remains a 'problematic' or limiting concept for theoretical reason because we can know neither *that* he exists nor that he does *not* exist.

In the *fourth* place, with respect to the origin of the concept of God, Kant demonstrates its necessity by reference to the demands of thought itself. It is certainly not on grounds of religious piety if Kant still seeks to find a function for the concept of God. On the contrary, his dismissal of all (theoretical) proofs of the existence of God is so devoid of considerations of piety that we may rather recall the inscription over the Gates of Hell in Dante's *Divina Commedia*: 'Abandon

hope all ye who enter here!’ (*Inferno* III: v. 9). But in contrast to a one-sided Enlightenment position, Kant does not simply content himself with that kind of negative theology, with merely furnishing a ‘censor’ (B 668f.) to prevent us from making false claims about God. Before going on to dismantle the traditional proofs for the existence of God, he also takes pains to ask precisely why ‘God’ should present itself as a problem for thought, and undertakes to reveal the internal necessity of the concept of God.

For this reason, in the *fifth* place, he must uncover a new kind of positive content to the concept which enables it to play an entirely original and productive role for our investigation of nature. Thus the reduced status of the concept of God in relation to the theory of knowledge goes hand in hand with the heightened status of this concept in relation to the theory of scientific research. The perpetually ongoing process of research, or more precisely: the search for an absolute condition of all appearances or objects in general, here acquires the dignity of an ideal of pure (theoretical) reason. The first *Critique* displaces the traditional epistemological significance of the concept of God in favour of a purely regulative or research-guiding one. Understood in this sense, as the completeness of all knowledge, God is clearly not an object of veneration, and Kant’s new approach here may well strike the religious mind as a case of blasphemy. But Kant does not simply reject the notion of a God who deserves our veneration, he merely thinks that there is no good reason for locating this God in the context of a theory of knowledge or of scientific research. Indeed, this would be precisely the wrong place to locate him.

Thus, *sixthly*, Kant prepares the ground for a moral theology which will be developed in detail in his subsequent writings on the theory of morality, but is already sketched in the ‘Canon of Pure Reason’ (B 825ff.). And since Kant here expressly relates his moral theology to the concept of hope, we must also qualify our reference to Dante. While hope is indeed abandoned with regard to the proofs of the existence of God, it is also preserved with respect to the *Critique* as such. God is not even banished entirely from theoretical philosophy, although he now transfers his principal residence, so to speak, from the realm of theoretical reason to that of practical reason. Thus it could be said that Kant ‘revived, as if with a wand, the corpse of the Deism which theoretical reason had already killed’ (Heine 1997: 104).

This change of residence also involves an extension to the concept of God. Whereas for theoretical reason the concept indicates the supreme being, the necessary being, the original being etc., for practical reason it is marked by omnipotence and omniscience, by consummate justice and consummate goodness. In the *seventh* place, therefore, it is not the least of Kant's contributions to philosophical theology to have recognised that these two fundamentally different but mutually supplementary kinds of attributes are united in the concept of God.

It is impossible to overlook the importance of the concept of God, and of its leading moral significance, for Kant's thought: all three *Critiques* culminate in a philosophical, ultimately moral, theology. Finally, in the *eighth* place, Kant's book on *Religion within the Limits of Reason Alone* and his essay *The Conjectural Beginning of Human History* further develop this theology by interpreting the Judaeo-Christian notion of revelation in the light of a purely moral faith in God.

19.2 A New Concept of God

In the tradition prior to Kant, philosophy had pre-eminently attempted to define and determine the concept of God by the 'via eminentiae et analogiae'. By extrapolating from the concepts of substance and attribute, God was treated from various perspectives as the most perfect being. In accordance with his conception of 'immanent transcendence' (cf. Chapter 4.3 above), Kant chooses instead to adopt the 'via reductionis' or, as we might put it, to take a 'step back' with respect to traditional metaphysics. God still remains the highest object of thought, but is now regarded as a transcendental ideal rather than a transcendent being. Kant uses the term 'ideal'¹ in order to indicate an intensification of a transcendental 'idea': a maximum of perfection that is thought 'in individuo'. An ideal being in this sense is even more remote from the level of objective reality than an 'idea', which itself already occupies a level beyond a 'category' (B 595f.). Thus with respect to the decisive case of objective reality, the ideal stands on the most abstract or most remote level of all. What is so remarkable here is that the concept of God unites a maximum and a minimum: the highest possible dignity in the realm of concepts is combined with the most questionable character in the realm

of experience. The categories (level 1) can always be exemplified in individual experience; the ideas (level 2) involve a conceptually projected unity of experience, although 'no corresponding object can be given in sense experience' for this (B 383); but with regard to the ideal (level 3), since it is determined solely through an idea (B 596), the 'conditions that are required for such determination are not to be found in experience' at all (B 599).

But this does not turn ideals into mere 'figments of the brain' (B 597), and even less into a kind of 'lie', as later critics of morality have argued.² Thus the Stoic conception of 'the wise man' shows, on the contrary, how ideals can fulfil a criteriological role: this archetype of human wisdom supplies a 'standard for our actions' if we compare ourselves with its demands, recognise our own deficiencies, and seek to reform ourselves. Kant here introduces a new measure for moral reflection, not the test of universalisation that is familiar from the categorical imperative, but the notion of an ideal paradigm that derives from ancient classical philosophy. Ideals furnish reason, as the standpoint of absolute perfection, with 'an indispensable standard' that enables it 'to estimate and measure the degree and the defects of the incomplete' (B 597–8). And the ideal which performs this task for experience as a whole is expressly described as 'transcendental'.

Kant's argument draws on the basis of the 'principle of complete determination': as the governing aim of all scientific research, the complete knowledge of something ideally requires a complete list, or the 'whole store' (B 603), of all possible predicates. If we possess this positive list, we can go through the predicates and determine whether each particular predicate applies or not (B 599ff.). It is quite true that Kant does not think of this entire store of all predicates strictly as a list, but as an individual substrate that underlies all experience. The transcendental idea underlies the 'complete determination' of all that exists and constitutes 'the supreme and material condition of its possibility' (B 604). For every object in the world it provides that absolute ground of determinacy and determinability which we can only approach through the (infinite) process of investigation. In accordance with his regressive argumentation, Kant transforms not so much the content as the methodological significance of the notion of God. God remains the totality that reason is necessarily required to think: as both the sum of all possible content (*omnitudo realitatis, ens realissimum*) and the origin of this content (*ens perfectissimum*). For in its

search for absolute completeness, reason must presuppose all predicates that can possibly be thought, since only the process of knowledge itself can decide which predicates apply and which do not.

Kant regards the transcendental ideal as 'the only authentic ideal of which human reason is capable' (B 604). This exclusivity initially seems to be limited to theoretical reason since Kant also describes the Stoic conception of the wise man as an ideal. Yet the idea that God represents the ideal merely in the realm of thought, whereas the wise man represents the ideal in the realm of morality, contradicts the concept of God itself. For 'as the highest condition of the possibility of all that can be thought' (B 391), God is the principle both of natural and moral perfection (B 660), and indeed, according to the 'Canon of Pure Reason', is also 'the ideal of the highest *original* good' (B 838). Consequently Kant ascribes a divine character to the wise man as conceived by the Stoics, and describes the latter as 'the divine man within us' (B 610). God is the unique, all-embracing ideal in the authentic sense, while the wise man is merely the ideal in the secondary sense of a divine character.

Dialectical illusion arises when we detach 'the sum of all empirical reality' from the conditions of its application, namely sensuous experience, and turn it into a 'transcendental principle of the possibility of things in general', or even into the 'collective unity of experience as a whole' (B 610). For this transforms a legitimate regulative principle for investigation into an illegitimate ontological concept that is supposedly constitutive for knowledge, or, in other words, into a transcendent idea. In truth, however, we are dealing here with a transcendental, or merely thinkable, ideal that cannot be known in either a positive or negative sense.

If we consider the genesis of dialectical illusion more closely, we can recognise three illegitimate stages of metamorphosis here. The ideal is 'first *realised*, that is, made into an object, then *hypostasised*' – that is, treated as something existing beyond thought – and finally 'even *personified*' (B 611, footnote), namely treated as if it were an individual person. The result of this, a supposedly objective person or supreme intelligence determined as actually existing through the categories of reality, substance, causality and necessity, is then asserted as the original author of the world. But in fact the categories are only valid for possible experience and they are 'entirely without content when we thus venture with them outside the field of the senses' (B 707).

19.3 Dismantling the Proofs of the Existence of God

Kant is not content with providing a merely historical inspection of the various proofs of the existence of God. For the sake of a systematic investigation of all speculative theology, he carefully considers which proofs appear to be possible in principle, and discovers three forms of demonstration at work. In this connection it is worth noting that the first two chapters of the 'Dialectic' are both articulated in a four-fold manner, while the third and final chapter falls into three parts: there are four paralogisms, four antinomies, but only three proofs of the existence of God. With regard to the 'paralogisms' and the 'antinomies', Kant explicitly bases his argument upon the four classes of categories, whereas the analysis of the 'ideal' adopts a different approach. But we should also observe that the 'Canon of Pure Reason' subsequently furnishes a fourth, specifically moral, proof for the existence of God (B 838ff.). If we consider these proofs in their entirety, therefore, we encounter the same fourfold articulation operative in the classes of judgements. We can thus attempt to correlate the proofs of the existence of God, in the same sequence that Kant presents them, with the four classes of judgement:

The demonstrations in question draw either upon a highest concept (the ontological proof) or upon our experience of the sensibly perceptible world, and in the latter case, either upon the indeterminate experience of existing reality (the cosmological proof) or upon the determinate experience of order and purposiveness (the physico-theological proof).³ Thus in accordance with the sequence of the table of categories, the ontological argument corresponds to the quantitative category of unity, the cosmological argument corresponds, via indeterminate experience, to the qualitative category of reality, and the physico-theological argument corresponds, via the concept of causality, to the second relational category. Insofar as the fourth or moral proof succeeds in demonstrating the existence of God, and indeed as a postulate of reason, it corresponds to the second category of modality in last remaining class of categories.

Although Kant himself does not explicitly indicate this, it is also possible to correlate the particular argument of each proof with a specific approach to the concept of God, or, even more forcefully put, with a quite specific concept of God. The three resulting concepts of God have nothing to do with a trinity of divine 'persons'. From

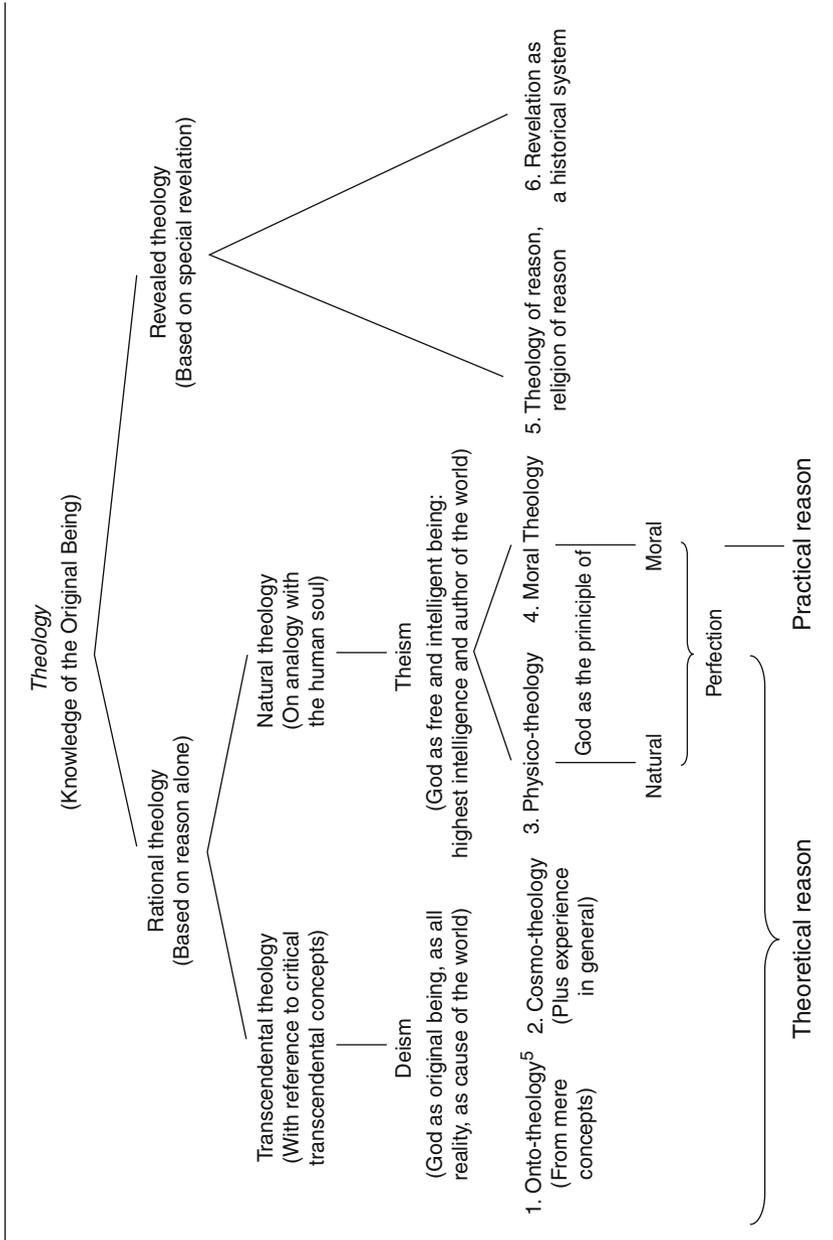
the ontological perspective, God is the absolutely supreme being (*ens summum*); from the cosmological perspective, as the unconditioned condition of all series of conditions, God is the primordial being (*ens originarium*) and the necessary being (*ens necessarium*); finally, from the physico-theological perspective, God is the author of the order and purposiveness of the world.

Kant proceeds to show how all three proofs fail to establish their claims, although he also argues that the counter-proofs for the non-existence of God cannot succeed either. Kant therefore rejects speculative atheism just as emphatically and comprehensively as he rejects speculative theology: God so radically eludes every attempt at objectifying knowledge that the purported end-result of the proofs, the 'existence of God', is itself already entangled in dialectical illusion, let alone the particular steps of the arguments in question (for Kant's articulation of the structure of theology cf. Table 19.1⁴).

In Kant's conceptual reconstruction the proofs of the existence of God consist in one, two and three argumentational steps respectively. But each case ultimately involves the same ontological argument which the second proof supplements with one argument, and the third proof with another. Thus the ontological proof consists simply in the ontological argument itself, the cosmological proof involves the cosmological and the ontological argument; and the physico-theological proof involves the physico-theological, the cosmological and the ontological argument. Thus all that is required here is to examine the additional argument supplied in each case.

1. The *ontological proof* treats existence as an indispensable element of perfection and thus attempts to infer the existence of the absolutely supreme being from the very concept of the latter. In the special case of God 'existence' is treated as a matter of analytic rather than synthetic knowledge. But in truth, as Kant says, even in the proposition 'God exists' the word 'exists' does not function as a 'real predicate' in the sense of actual substantive content (cf. B 602). God does not possess, in addition to the properties of theoretical and practical perfection, the further property of existence. For an existential assertion claims that an already formed concept actually finds its relevant corresponding object, and this inevitably means venturing out beyond the mere concept itself. Whereas the claim that 'God is omnipotent', for example, is analytic, since the concept of God is incompatible with any lack of power, the claim that 'God exists' is intrinsically synthetic like

Table 19.1



'all existential propositions' (B 626). The existence of objective, rather than merely mathematical, objects can only be decided by something which the entirely conceptual ontological argument excludes in advance, namely perception together with the inferences that may be drawn from it: 'Our knowledge of the existence of things reaches, then, only so far as perception [...] can extend. If we do not start with experience [...] our guessing or enquiring into the existence of anything will only be an idle pretence' (B 273f.).

From the formal logical point of view, the ontological argument falls victim to a conceptual confusion – that of identifying existence with a property – and is therefore guilty of equivocation. Nonetheless, this is not simply a case of sophistical deception but also a matter of dialectical illusion. Thus it is only the transcendental critique of reason which can expose the confusion of a transcendental ideal with a transcendent idea.

2. The *cosmological proof* purports to remedy the lack of an existential criterion with respect to God. For on the basis of experience, from the fact that something actually exists in space and time, it attempts to infer an absolutely necessary, and thus supremely real, being that therefore also involves existence. The first genuinely cosmological argument, that which infers a necessary cause from the contingency of the world, has already appeared in the context of the fourth antinomy (B 480ff.). In the chapter on the 'Ideal of Pure Reason' Kant had already charged the argument with involving 'a whole nest of dialectical assumptions' and now claims that the principle of inferring a cause from the contingent is 'applicable only in the sensible world' (B 637). The attempt to apply the category of necessity to objects beyond experience entangles reason in the strange situation that it 'cannot put aside, and yet also cannot endure the thought' that arises here. Since an absolutely necessary being would also still have to ask itself the question: 'but whence then am I?' (B 641), the cosmological proof fails to demonstrate the absolutely conclusive answer that it purports to provide.

Kant's principal objection, however, is directed against the cunning 'devices', or even the deceit, of speculative reason when 'appeal is made to the agreement of two witnesses, the one with the credentials of pure reason [the ontological argument] and the other with those of experience [the cosmological argument]. In reality the only witness is that which speaks in the name of pure reason; in the endeavour to pass

as a second witness it merely changes its dress and voice' (B 634). For 'the so-called cosmological proof really owes any cogency which it may have to the ontological proof from mere concepts' and the 'appeal to experience is quite superfluous' (B 635). Thus the apparent advantage of this proof with respect to the ontological proof, namely its starting point in experience itself, is shown to be illusory. The cosmological proof is guilty of an *ignoratio elenchi*, a misapprehension of the true grounds of the demonstration, by failing to realise that the ontological argument alone shoulders the relevant burden of proof here. Furthermore, since the two concepts of the absolutely necessary being and the most real being ultimately amount to the same thing (cf. B 816f.), one can invert the argument to yield the invalid ontological argument with which we started: the absolutely necessary being is the most real being (B 636f.).

3. The *physico-theological proof* is certainly the one to which Kant is most sympathetically inclined (cf. B 651). Firstly, the proof infers a wise author of the world from the purposiveness which can be perceived in it; secondly, it infers an absolutely necessary author from the absolutely complete purposiveness of the world; and thirdly, it infers the actual existence of this author. But this new physico-theological argument relies upon an inadequate analogy in attempting to conclude to the unknown on the basis of the known. For by comparison with the example of the products of human art and craft, the circumstances of nature are traced back to a being that is characterised by will and understanding. Even if the analogy were justified, it would still fail to establish the desired conclusion. Since human beings can only shape some pre-given material in accordance with their ends, a material which they do not produce in the first place, the analogy in question would only lead to an *architect* of the world. Like the 'demiurge' described in Plato's *Republic* (X: 597f.) or *Timaeus* (30a), such a being would simply work upon already existing material, and would not amount to the *creator* of the world as this is envisaged in the Judaeo-Christian tradition, and indeed as in one passage of the *Republic* as well (cf. the reference to the *phytourgos* or producer of nature at X: 597d).

Even with this qualification, we could still only infer a power or wisdom proportional to the observed purposiveness of nature, rather than any absolute divine power or wisdom. Since all experience remains rooted in finitude, the physico-theological proof fails in one of two ways. Either it fails in strictly physico-theological terms because

its purely empirical premises cannot fulfil its purpose and establish the existence of God in the relevant theological sense. Or it attempts to overcome this empirical inadequacy by adducing the non-empirical grounds of the second and third arguments listed above – yet these correspond to the cosmological or ontological arguments that have already been rejected.⁶

Kant's conclusion is devastating: it is impossible to prove the existence of God either by empirical or purely conceptual arguments, or by any combination of the two. Any theology that is based simply upon the considerations of theoretical philosophy must therefore be abandoned. But this does not mean that the 'dialectic' has a purely negative result with respect to theology. For, in the first place, the discussion shows that the idea of God is a concept that is thinkable and even necessary to reason. In the second place, it thereby prepares for a theology that is based upon moral laws (B 664). And finally, in the 'Appendix', it presents a 'philosophy of as if', to borrow Hans Vaihinger's expression, that opens up a positive regulative function for the concept of God in relation to scientific enquiry.

19.4 A Rehabilitation of the Ontological Argument (Plantinga)?

Kant effectively treated the ontological argument with contempt. But there have been modern philosophers and theologians, like Hegel, Maurice Blondel and Paul Tillich, and even analytical philosophers like Alvin Plantinga, who have nonetheless regarded it as convincing. It is quite true that Plantinga approaches the argument as it is formulated in Anselm's *Proslogion*, whereas Kant drew on Descartes (B 630), and presumably on his fifth *Meditation*, since he believed that no proof for the existence of God is more concisely presented and also more apparently comprehensible than the Cartesian one. On the assumption (contested by Kant) that existence belongs amongst the various predicates which can apply to a thing, then existence would apply to the most real of all beings simply by virtue of its inner possibility.

But the distinction between the formulations of Anselm and Descartes has no significance for Plantinga's own assessment of the argument. And Plantinga explicitly refers at important points to Kant anyway, although not always in an entirely accurate manner. He claims that 'Kant never specified a sense of "is a predicate" such that, in this sense, existence is *not* a predicate' (Plantinga 1974: 196). What is true

is that Kant concedes that existence is a grammatical rather than a 'real predicate'. It is sensations which correspond to a 'real predicate' in Kant's sense, and this is not the case with existence: neither an individual sensation, nor a bunch of sensations, nor what is inferred from them on the basis of laws of nature, is responsible for existence. If we do treat existence as a real predicate, we commit the categorial mistake of confusing a category of modality (existence – non-existence) with a category of quality (reality). Furthermore, Plantinga argues on the basis of a possible worlds semantics, without raising Kant's critical question concerning the conditions for the actual knowable world or posing the decisive prior question for the ontological argument in this context: are existential assertions ever analytic, as the argument supposes at least for the case of God, or are they always synthetic in character, as Kant claims? If Plantinga had addressed Kant's two crucial perspectives, namely the difference between the categories of reality and existence and the non-analytic character of the question of existence, he could have simplified his rather elaborate argumentation and, above all, have discussed the most important critic of the ontological argument, Kant himself, in a clearer and sharper fashion.

Plantinga (1974: 196ff.) understands Anselm's proof of the existence of God as a *reductio ad absurdum* argument that can be presented in eight basic steps and one preliminary step. The core of the original argument can be simplified in the following threefold form: if (1) 'God' is a being than which nothing greater can be conceived, and (2) 'existence in reality' is greater than 'existence in the understanding alone', then (3), according to the *reductio ad absurdum*, it is false to claim that God exists only in the understanding rather than in reality. Plantinga reformulates the argument in the context of his possible worlds semantics. With reference to proposition (2), on the one hand, the re-formulation presupposes (4) that existence increases the greatness of a being. On the other hand, it hypothetically adopts the standpoint of the opponent of the argument and assumes (5a) that God does not exist in the actual world W' , but only (5b) in a possible world W . But since proposition (1), the ontological concept of God, must still be fulfilled, it follows (6) that God in the actual world W' must be greater than God in the merely possible world W . But (7) this consequence is clearly false. For God in W' is still conceptually exceeded by God in W because in the latter God possesses a property, namely existence, which is lacking in W' . Consequently the assumptions of the

opponent, propositions 5a and 5b, are false and the existence of God 'in reality' is demonstrated *e contrario*.

Of course, Plantinga presents his case in a highly detailed and differentiated manner, but this basic outline of the argument suffices in order to consider whether he succeeds in rehabilitating the ontological proof that Kant rejects. For Kant would not admit the alternatives of 5a and 5b in the first place since already contests proposition (4). Moreover, he would challenge the *reductio ad absurdum* argumentation that is deployed here. For in the chapter on the 'Antinomies' he shows that the relevant metaphysical objects, including 'God', involve pairs of contradictory propositions where both can be true, but also both can be false: thus the *reductio ad absurdum* type of argument that normally functions perfectly well fails us completely with respect to the unconditioned.

On the other hand, God 'exists' for Kant in a much stronger sense than for Plantinga (1974: 198f.). Plantinga's argument begins by assuming that someone entertains the notion of God, and attempts to prove the existence of God from this contingent notion. But for Kant the notion of God possesses a necessity of its own that permits us to say that God 'exists'. But this is an existence in quotation marks, or a quasi-existence: there is no controversy that the concept of God does present itself to reason (contingently for Plantinga, and indeed necessarily for Kant). What is controversial is the 'actual' existence of God and the idea of a knowledge that reaches out beyond thought itself. There is a sense, although Plantinga himself does not suggest it, in which his possible worlds semantics could fruitfully be exploited for the ontological proof of the existence of God. For according to Kant's own convincing arguments, there is a world that differs from the objectively known world, but is nonetheless possible. For this world, the moral world, we can make a positive decision with respect to existence or non-existence: here God exists. But this decision does not lie within the reach of theoretical knowledge, but rather within that of hope and (rational) faith (cf. Chapter 21.3 below).

Notes

1. The German expression 'das Ideal' [the Ideal] is of remarkably recent date and it was Kant himself who introduced into the technical language of philosophy. He may have been influenced by the famous art-historian Johann Joachim Winckelmann,

who expressly described a pure and completely unsurpassable form of beauty as 'idealisch' [idealistic], although he saw this beauty pre-eminently realised in the 'ideal' works of the ancient Greek painting and sculpture, rather than in the works of nature (*Gedanken über die Nachahmung der griechischen Werke*, 1755: 27–59; English translation: 32–54). In the background here we may also recognise the influence of Baumgarten's rationalist aesthetics which had identified 'beauty' with 'perfection' (cf. *Metaphysica*, Section 662; *Aesthetica*, Section 14). In his Dissertation on *The Form and Principles of the Sensible and Intelligible World* (Section 9), Kant still identifies 'the ideal', defined as the highest perfection, with Plato's 'idea', as in the 'idea of the state'. It is only in the first *Critique* that Kant distinguishes 'the ideal' from the 'ideas' by specifically quantifying it ('in individuo'). This individualisation of the ideal may have been inspired by Winckelmann's conception of an individual ideal work of art.

2. Cf. Nietzsche, *Ecce Homo*, the 'Foreword', and Henrik Ibsen's *The Wild Duck*, Act V: 'Don't use that foreign word 'ideals'! Our own mother tongue has an excellent word for them: Lies'.
3. The ontological proof was first formulated by Anselm of Canterbury, but has also been defended by Descartes, Leibniz and subsequently by Hegel. In the pre-critical period, the cosmological proof was defended by Leibniz, Wolff, Crusius and Mendelssohn, and the physico-theological proof was defended by the Cambridge botanist John Ray and by Kant's teacher Knutzen.
4. The table is based on B 659–61 and *Religion*, VI: 12 ff.; this formulation does not include what we may call the 'as if' theology presented in the 'Appendix' to the 'Dialectic' (cf. Chapter 20.3 below).
5. This is an expression first coined by Kant.
6. Goethe recognised that 'critical reason has done away with the teleological proof of the existence of God'. But he also continues: 'But what cannot be proved should remain valid to us as feeling, and we go back to all those pious notions from Bron-totheology [Greek *bronte*: thunder] to Niphotheology [Greek *niphos*: snow]. Shall we not be allowed to feel in lightning, thunder and storm the closeness of a more than mighty power, and in the scent of blossoms and the gentle stirring of a warm breeze a being that comes lovingly close to us?' (*Maximen und Reflexionen*, in: *Werke*, XII: 365 ff.; English translation: 109).

Many readers may begin to flag by the time they reach the ‘Appendix’ of the ‘Dialectic’, or may be tempted to regard it as redundant. Perhaps they are also discouraged by that ‘dryness’ of style that Kant himself readily acknowledged (*Prol.*, Section 60, footnote). But in fact the ‘Appendix’ develops the important insight that although the final result of the ‘Dialectic’ is negative in one sense, its ultimate implications are not. It is true that reason raises claims to knowledge which it is incapable in principle of redeeming, and thus may appear as a fundamentally unreliable faculty. But the anthropological optimism that ‘[e]verything that has its basis in the nature of our powers must be purposive’ (B 670) leads Kant to examine this initial appearance and thereby to counter the fatal impression that reason as such is the source of dialectical deceptions and illusions.

Kant’s assessment of the results of the ‘Dialectic’ is presented in two parts. The first part of the ‘Appendix’, on ‘The Regulative Employment of the Ideas of Pure Reason’, shows that reason does perform a positive, indeed necessary, role with regard to experience, one which is specified in terms of three transcendental laws. In their logical use, and in this context that means their use in relation to inference, they represent ‘merely a subjective law [...] of our understanding’ (B 362). But as transcendental principles they concern the necessary constitution of the world and can thus claim ‘some sort of objective validity’ (B 692). The second part of the ‘Appendix’, on ‘The Final Purpose of the Natural Dialectic of Human Reason’, undertakes to provide a (threefold) ‘completion of the critical enterprise’, and once again in the form of a deduction (B 697f.), this time a deduction of the soul, the world and God as concepts of reason. Kant furnishes a ‘philosophy of as if’ which explains these three ideas as necessary heuristic fictions, as schemata for the systematic unity of all our knowledge of experience. We shall begin with Kant’s own assessment (20.1–20.2) of

the implications of his argument, and conclude with an assessment of this assessment (20.3).

20.1 Three Principles of Enquiry

Through their purely 'regulative employment' the ideas forfeit the 'transcendent' character that once tempted them to 'soar beyond' the domain of experience. While this inevitably involves the dismantling of the relevant metaphysical disciplines of rational psychology, cosmology and theology, it now provides them a new 'native' or immanent significance. As representations of a second level unity, of the absolute completeness of knowledge, the ideas bring unity to the first level unities produced by the understanding. Since they contribute nothing to the constitution of objects, they cannot themselves, as Horstmann (1998: 543) assumes, be 'empirically secured'. But they determine the 'procedure whereby the empirical and determinate employment of the understanding can be brought into complete harmony with itself' (B 693f.).

According to the B 'Preface', special metaphysics has failed in the task of producing any advances in knowledge. Kant's new, and now truly universal, metaphysics does not undertake to fulfil this task, but thematises the question of knowledge itself and thereby discloses a new dimension to it. The regulative ideas supplement the horizontal progress of knowledge, the expansion of knowledge in the usual sense, with a vertical progress, one concerned with the search for complete unity in our knowledge (B 672f.). In contrast to the distributive unity of the understanding established in any given case, reason furnishes a collective unity which embraces all possible empirical acts of the understanding, but is never given within experience. The complete unity of knowledge produced through the understanding is merely postulated, or assumed 'problematically', that is, 'assumed as a hypothesis' (B 675).

Kant elucidates this regulative function of reason by reference to the 'causality of a substance, which is called power' (B 676). Reason here responds to a strict, and historically identifiable, form of reductionism. For given very different effects, natural scientists were led at first to assume different kinds of powers or forces. But they subsequently attempted to discover some identity or harmony amongst the latter, initially found this in the plural form of a multiplicity of

‘relatively fundamental powers’, and finally, in terms of the unity of reason, as ‘a single radical, that is, absolutely fundamental, power’ (B 676). Kant illuminates this historical development by showing how reason is involved both in the unified concept of an absolutely fundamental power and in the impulse towards the unification of our experience in general. He therefore defends an idea that is generally first ascribed to Hegel, though whereas the latter sought to exhibit reason in history, Kant discovers it in the history of our scientific investigation of nature.

Kant has a twofold reason for adopting this approach (B 678f.). From the subjective perspective, ‘reason presupposes the systematic unity of the various powers, on the ground that special laws of nature fall under more general laws’, something which effectively calls for parsimony with respect to unnecessary principles. And from the correlative objective perspective, such parsimony is not only an economical requirement of reason, but is one of nature’s own laws’. It is only on the assumption that this systematic unity is inherent in the objects themselves that reason can try and treat the multiplicity of powers as a disguised unity and seek out a *single* fundamental power. Hence we can say that ‘reason does not beg here, but commands (B 681).¹ The search for an absolutely fundamental power is thus something that only reason itself can undertake. And, on the other hand, if we wish to understand such a search, we must acknowledge reason as the relevant and responsible faculty here.

It is true, of course, that the interest of reason consists in more than the search for complete unity. Alongside the relevant ‘principle of genera, which postulates identity’, or the principle of homogeneity, Kant places the principle of species, or of specification, ‘which calls for the manifoldness and diversity of things, notwithstanding their agreement as coming under the same genus’ (B 682).² This is the law which forbids us to reduce the variety of things without due cause.

In addition to the principles governing both these directions, one searching after the greatest unity and the other searching after the greatest variety, we must also acknowledge a third principle, that of the continuity of forms, which prescribes ‘a continuous transition from each species to every other’. Since this transition runs in both directions, namely ‘through the processes of ascending to the higher genera and descending to the lower species’, the third principle ‘arises from the union of the other two’ (B 686). Kant attempts to illustrate the threefold unity of these principles with the image of a ‘horizon’

(B 686f.). Defined from the standpoint of the highest genus (the first principle: homogeneity), the universal and true horizon (the third principle: continuity) 'comprehends under itself all manifoldness – genera, species and sub-species' (the second principle: specification).

Although the three principles were not first formulated by Kant, his transcendental interpretation of their significance is entirely original. According to Occam's razor, a general principle of parsimony, one should keep the number of ontological elements, or elements required by the theory of science or knowledge, to the possible minimum. Without casting doubt upon the virtue of parsimony, Kant searches out the ground of this principle and discovers two arguments from reason which effectively consolidate one another and raise increasingly emphatic claims (cf. B 677f. with 362ff.).

As a logical principle, parsimony derives from the formal and logical procedures of rational inference. Called upon to 'bestow a certain form on given modes of knowledge' (B 362), reason pursues the principle of 'finding the unconditioned for the conditioned knowledge of the understanding' (B 364). It thus successfully and eventually arrives at the absolutely smallest possible number of principles, namely a single principle. The fact that 'special laws of nature fall under more general laws' (B 678), together with the interest of reason in attaining the highest possible universality, leads to a single utterly universal law of nature (in the sense of a principle of nature). As distinct from a purely logical principle, a transcendental principle involves a more emphatic claim insofar as it co-ordinates systematic unity not only subjectively with the knowing subject, but also objectively with nature. The principle becomes an inner principle of nature itself. At first sight, it is true that these two sides do not appear compatible with one another. For as a purely logical principle the idea of reason possesses a merely hypothetical character, rather than any *fundamentum in re*, since it 'does not prescribe any law for objects' (B 362). Nonetheless, it claims 'at least some objective validity, no matter how indeterminate that validity may be' (B 697) since the logical principle itself is impossible without the transcendental one.

Kant's argument here unfolds in five steps which together furnish a 'sufficient criterion of empirical truth'. This latter demands (1) a 'coherent employment of the understanding', which (2) itself requires the search for the unity of nature 'in accordance with the principles of reason'; (3) the search presupposes in turn that this unity is indeed

given in nature, even if, as Kant says, in a 'disguised' fashion. For if (4) the powers of nature were so 'heterogeneous' that the systematic unity were not 'in conformity with nature' (B 679), or, more pointedly, contradicted nature, the search for unity would be entirely pointless. Or, expressed in a positive way, the subjective unity of reason presupposes a certain objective unity in nature. (5) From the 'need' for a sufficient criterion of empirical truth Kant concludes that the three traditional principles of enquiry not only tell us something about the way in which reason functions, but also, over and beyond their purely logical (subjective, heuristic and hypothetical) employment, express the character of nature itself. But they thereby require that minimal objectivity claimed by the transcendental principle. In contrast to the constitutive and determinate objectivity of the understanding, this objectivity is therefore an indeterminate one that is expressly related to the ongoing process of scientific enquiry.

As in the first *Critique* generally, here too the transcendental level functions as the ground of the logical level (B 677ff.): the logical principle of reason requires us 'to bring about the unity of reason as completely as possible'. The transcendental principle adds that this demand can be fulfilled since the corresponding unity 'is a priori assumed to be necessarily inherent in the objects' (B 679). It is quite true that the unity of reason is not constitutive since it cannot simply be discovered lying within nature, and, in contrast to the common misapprehension of a 'perverse reason' (B 720), it is not a property of nature. Nonetheless, scientific enquiry conducted in accordance with the three principles proceeds on the assumption that nature itself is open to characterisation in terms of homogeneity, specification and continuity. The aforementioned 'transcendental' minimum of objectivity with respect to the subjective search for unity lies in an objective *capacity* for unity, not an objective *reality* of unity in nature. The unity of nature is 'only *projected*', rather than 'given in itself' (B 675).

The early modern attempt to develop a new logic of discovery, one appropriate to genuine investigation, had met with little success (cf. Chapter 9.1). But it was Kant himself who grounded this logic by reference to the three principles of enquiry, although the placement of the relevant discussion in the 'Appendix' to the 'Dialectic' almost obscures its full significance. Once again, the principles in question counsel and encourage a certain modesty of approach. For they consist not in rules, let alone recipes, for making empirical discoveries,

but merely indicate the overall lines of direction in which such discoveries must be sought. But these lines of direction are nonetheless well defined and properly grounded: reason commands us to seek out both unity and variety within experience, and not least the relation and connection between the two.

20.2 A Surprising Completion of the Critical Enterprise

The second part of the 'Appendix' poses the question concerning the 'final purpose of the natural dialectic' of human reason, and offers the original answer that we can, and even must, deceptively present the unity of reason as an object. For 'reason cannot think this systematic unity otherwise than by giving to the idea of this unity an object, though not such as experience can ever supply' (B 709). And this is the nerve of the intended deduction: as 'analoga of real things' (B 702) the ideas of reason possess, as already indicated, 'at least some objective validity, no matter how indeterminate that validity may be' (B 697). By demonstrating this, Kant undertakes to provide a threefold, and increasingly specific, 'completion of the critical enterprise' (B 698; cf. also B 863). Firstly, he discusses reason as the third and highest theoretical faculty, considered in relation to the faculties of sensibility and the understanding; secondly, the concepts of reason, namely the ideas or the highest form of representation, and the demonstration of their (indeterminate) objectivity provide an epistemic high-point; finally, the three ideas present themselves rather like mountain range in which the idea of God stands out as the highest peak of all. Thus the critical enterprise is completed with what is at once a methodological reinterpretation and a rehabilitation of the idea of God.

With this threefold completion the first *Critique* fulfils its ultimately practical interest in severing the root of the three 'impudent and restrictive assertions' (*Prol.*, Section 60) of materialism, fatalism and atheism (B xxxiv). By showing that we cannot provide any theoretical refutation of the existence of the soul (materialism), of freedom (fatalism) or of God (atheism), the 'Dialectic' has first made room for a corresponding 'faith' (B xxx). The 'Appendix' thus supplements this negative achievement with a positive one that makes a constructive contribution to objectivity.

In accordance with the proper role of a transcendental deduction, Kant's demonstration of objectivity takes the form of a juridical

assessment. It assigns an indispensable task to the ideas in relation to experience, and thus remains in the domain of the highest epistemic level, that of knowledge. But the aim of the deduction assumes the weaker form of a merely indeterminate objectivity. Thus ‘strictly speaking no *objective deduction* is possible’ here, but only a ‘subjective derivation from the nature of our reason’ (B 393): the ideas do not constitute experience, but they are regulative for it in that they ‘lead us [1] to systematic unity and [2] contribute to the extension of empirical knowledge, without [3] ever being in a position to run counter it’ (B 699). And since this threefold regulative task is essential for our investigation of nature, we may speak of the ‘constitutive-regulative’ significance of the ideas (cf. Chapter 14.1 below).

The first of these three tasks is clear: whether we are speaking of the soul, of the world, or of God, each of these representations sums up an abundance of alleged knowledge. Formally expressed, we are dealing in each case with a primary form of symbolisation, that is, with a ‘schema’ (B 698). But the transcendental ideas cannot be described merely as secondary ‘images’; rather the soul is an ‘image for’ the unity of psychological appearances, the world is an image for the unity of ‘both inner and outer natural appearances’ (B 700), and God is an image for the ‘systematic and purposive unity’ of nature (B 727).

In the field of psychology, for example, we can ‘connect all the appearances, all the actions and receptivity of our mind, as if the mind were a simple substance which persists with personal identity (in this life at least), while its states [...] are in continual change’ (B 700). The objective reality that we are seeking is determined entirely on the basis of experience. Kant is not concerned with some kind of spiritual or esoteric psychology here, but simply with psychology in the ordinary and empirical sense, whether it is pre-scientific or strictly scientific in character. Psychology may investigate everyday phenomena, like the different acts of a person or the changing moods, views and attitudes of an individual, or it may examine unusual events like ‘conversion’ experiences (like that which turned Saul into Paul) or psychological illnesses such as ‘split personality’ disorders, but in every case psychology, including psychiatry, can always relate the entirety of our inner life to a ‘psychological unity’ which underlies all change as something permanent. Thus, after his transformation into Paul, Saul is still ‘the man from Tarsus’, and the individual who suffers from a split personality still possesses a *single* identity card for example, or a *single* set of medical notes.

Our actual behaviour justifies Kant's view here: whether in everyday life or in science, we treat the entire inner life of a person *as if* it were a unity, even if we also distinguish as Freud does between the id, the ego, the superego. And this unity is what is traditionally described as the 'soul'. Kant is not claiming that there is some material thing like a soul – something of which a celebrated surgeon could say that his operations had never found a trace. The concept of soul does not concern the physical dimension of the mind, but rather those 'spiritual' things like views, moods and attitudes, those conscious phenomena themselves and not merely their corresponding manifestations in the brain, which even no 'hard naturalist' would claim to discover during an operation.

Above all, the soul, understood as an idea, is not an object of knowledge. As a regulative idea for the relevant domain of investigation, the soul brings the second regulative task into play: the idea of psychological unity encourages scientific enquiry to investigate the connection between otherwise diverse phenomena, in the first instance a multiple connection which gathers the various phenomena together in terms of certain moods, views and attitudes, in order finally to 'reduce them, so far as may be possible, to a single principle' (B 711f.). The cases of split personality disorder in clinical psychiatry, and the distinction between id, ego and superego in theoretical psychology, certainly furnish powerful arguments in favour of deeply rooted difference and variety here. Nonetheless, the idea of unity encourages us to extend our previous knowledge precisely by investigating the inner connections amongst all this difference and variety.

The third task prevents us from misusing the ideas to formulate assertions which, like those 'windy hypotheses of generation, extinction and palingenesis [rebirth] of souls' (B 711), contradict all possible experience. For such hypotheses could only be defended on the basis of a concept of the soul formulated by the understanding, and the concept of reason which alone is competent here has already rejected this possibility.

Likewise we should treat the totality of all natural phenomena and their causal histories *as if* they were parts of one world, though certainly without thereby denying the 'purely intelligible grounds' of these appearances (B 700). In accordance with the first regulative task, the world as a cosmological idea represents the unity of all objects and events deriving from both the causality of nature and the

causality of freedom. The second task, that of exploring this unity, calls us, for example, to carry our investigations beyond an allegedly first beginning, such as the 'big bang', and beyond allegedly ultimate constituents of the world, such as atoms. And in accordance with the third task, we cannot simply terminate such investigation by claiming, for example, that some kind of 'creation' stands behind the original 'big bang'. For such a claim cannot in principle be either verified or falsified, and thus transcends the realm of possible knowledge.

The theological idea, finally, is relevant not to theological research itself, but rather to our scientific research into nature. It addresses the double question concerning 'the ground of the order of the world and of its connection in accordance with universal laws' (B 724). Whereas the idea of the soul concerns psychological phenomena, and the idea of the world concerns physical, including chemical and biological, phenomena and the laws governing them, the idea of God questions after the ultimate ground of all these laws and the connection they establish, a ground which Kant also describes as 'purposiveness'. The idea of God is thus the culminating moment of the completion of the critical enterprise. As the unity of inner unity ('soul') and outer unity ('world'), the idea of God represents a yet higher unity, and as the ground of both these unities, it points towards a yet higher extension of knowledge. But nonetheless, as the idea behind all empirical investigation, it refuses to indulge in 'hyper-physical' speculation or to encourage that indolent use of reason which 'ceases from further enquiry as if it had entirely succeeded its task' (B 718). In accordance with the idea of God, we may regard the entire sensible world *as if* it were a purposively organised unity which has 'a single highest and all-sufficient ground': 'a self-subsistent, original, creative reason' (B 700) or 'one single all-embracing being, as the supreme and all-sufficient cause' (B 714). In this sense we may represent the ideal of the systematic unity and absolute completeness of knowledge as an intelligence that lies outside the world and is its source and author (B 697ff.).

It is very common to reproach Kant with thereby falling back into the fundamental metaphysical error of hypostasising a transcendental maxim of enquiry as a transcendent object. But does Kant really revoke his basic philosophical approach here and thus de-secularise the secular character of the first *Critique*? Does he start by dismantling the theological foundations of human knowledge, the medieval remnant that survives in early modern philosophy from Descartes to Wolff and

Leibniz, only in the final analysis to readmit it by the back door? Kant expressly avoids describing God as an existing object, and presents God instead as a merely 'analogical' concept, as a figurative exposition of the transcendental idea or a schema which presents it in sensuous form. And this is indeed indispensable: for if it makes sense to try and bring the individual and fragmentary aspects of our knowledge into a systematic unity (of homogeneity, specification and continuity), we must be able to represent nature in such a way that permits to accomplish this aim. This in turn presupposes that systematic order prevails in nature itself, not indeed as something that is ever given, but as an internal connection that must constantly be elucidated and explored. But this only seems possible if we regard nature 'as if' it derived from a supreme intelligence outside of the world, one which 'acts in accordance with wise purposes as the source' of the unity and order of the world itself (B 725).

In the *Prolegomena* (Section 57) Kant points out that this inevitably involves an anthropomorphism which attempts to picture God in human terms. But Kant claims that this anthropomorphism is not 'dogmatic', but merely 'symbolic' since it concerns 'language only and not the object itself'. To take God as an image for the world is 'to consider the world *as if* it were the work of a supreme understanding and will'. And this in turn is 'to say nothing more than that a watch, a ship, a regiment bears the same relation to the watchmaker, the ship-builder, the commanding officer as the world of sense [...] does to the unknown' (*Prol.*, 357). The completeness of knowledge that is demanded by reason can only be progressively accomplished by the understanding. Reason furnishes rules for experience which permit us to extend the actual reach of the latter, but it does not itself accomplish this extension. And the idea of God here does not designate a supernatural element introduced merely to fill in some supposed lack of purely natural explanation, as with a physico-theology which ascribes to nature purposes which have been established by God.

Kant's understanding of the idea of God as a ground of explanation 'outside the world' (B 705) prevents enquiry from wearying of its task and simply contenting itself with inadequate explanation or a lack of explanation altogether. This idea of God also frees enquiry from the kind of censure that is implicit in St. Augustine's demand that we should always pursue our enquiries in a properly God-fearing way ('religiose quaerere': *Confessions*, V. 3). Instead of requiring us to

regard nature as a creation and recognise God in it as the artist who fashioned it, Kant liberates our enquiry into nature from all religious demands and assigns it entirely to the work of the scientific investigator (obviously with the qualification that this refers to the framework of possible enquiry; for the third antinomy has already shown, for example, that such enquiry cannot refute the concept of a causality of freedom and thus the possibility of morality). This liberation of scientific enquiry does not, of course, originate with Kant, but belongs once again to the tradition inaugurated by Bacon (cf. Höffe 2000⁴ and Chapter 4.1 below). But Kant provides this emancipation of scientific enquiry with the critical theoretical grounding that is entirely lacking in the work of Bacon.

Qualified therefore by the methodological caution of an ‘as if’, the first *Critique* permits the ideas of reason a certain hypostatisation, though not a personification, which would otherwise be strictly forbidden. Kant speaks of a deistic concept of God (B 703) which, as distinct from a theistic concept of the ‘living God’ (B 661), considers God merely as a cause of the world and as a ‘something’ that is presupposed (B 725). But he remains true to his negative theology since he also indicates that it is something ‘which I do not at all know in itself’ (B 705). That Kant refuses to objectify the idea of God in an illegitimate manner is clear from the fact that it is a matter of complete indifference to us whether we say that God has willed the unity and order of the world or, alternatively, that nature itself has wisely arranged it thus (B 727). As an element connected with our knowledge of nature, the theoretical idea of God remains restricted ‘to its own proper field, namely, nature’ (B 729). It coincides with the idea of a purposive nature and cannot be realised through any intuition, but solely through the (infinite) progress of enquiry.

The ‘supreme being’ remains ‘entirely inscrutable as to what it is in itself’ (*Prolegomena*, Section 58: 359). Kant can therefore formulate the ultimate burden of the first *Critique* in the most abbreviated possible way, in a single sentence: ‘Thus all human knowledge begins with intuitions, proceeds from thence to concepts, and ends with ideas’ (B 730). Kant thereby feels entitled to believe that he has now drawn up in full detail the records of the lawsuit of reason and can henceforth ‘deposit them, with a view to the prevention of such errors in future, in the archives of human reason’ (B 732).

20.3 Metaphysics or Positivism?

In order to assess the ultimate implications of the 'Dialectic', it is worth considering the conflict between metaphysics and positivism which has continued to plague the theory of knowledge until this day. Even if the contending parties occasionally appear under a different name – Kant speaks of the opposition between rationalism and empiricism – and indeed assume the most various forms, the fundamental conflict involved is fairly clear. In the view of metaphysics, reason is capable of attaining knowledge in its own right, whereas positivism categorically rejects this possibility. For metaphysics, the knowledge claimed by reason constitutes genuine knowledge since reason possesses an object of its own that is accessible to it alone: namely, the 'unconditioned', which many thinkers also describe as 'the absolute'. Positivism challenges this claim principally by recourse to three strategies. Either it regards the unconditioned as an entirely imaginary object, a fiction of the brain, whose origin can be explained in anthropological terms (as in Comte 1822 or Feuerbach 1843: Sections 1 and 6) or in semantic terms (as in Carnap 1968²: 225f.). Or it interprets the unconditioned empirically ('positivistically') in terms of immediately accessible data of observation (described as 'protocol statements' in early logical positivism). Or it discredits the concept of the unconditioned in logical terms since it acknowledges only three possibilities of (deductive) demonstration, none of which can arrive at the unconditioned: infinite regress, (dogmatic) termination of the argument, or circular reasoning (Popper and his followers appeal to this 'trilemma' which was originally formulated by Jakob Friedrich Fries).

Kant shows us why this conflict constantly arises, but also how it can be resolved. Beholden to an overly simplified set of alternatives, both parties overlook the sense in which they are right and wrong, in each case in a partial and different manner. Positivism argues, rightly, that reason can claim no knowledge in the absence of any connection to experience. And Kant defends the *prima facie* positivistic thesis: 'only in experience is there truth' (*Prolegomena*, IV: 374). But this qualified incapacity of reason does not imply an absolute incapacity since the unconditioned can be interpreted differently. Whereas for Popper the unconditioned appears as the property of the utterly fundamental grounds of knowledge, for Kant it is the totality of conditions which brings our entire knowledge of objects towards a unity that

can never be reached, but remains ever given over as a task. Hence Kant's positivistic thesis must be supplemented and completed by an anti-positivist claim: without this search for unity – for the fundamental force or power, in his example, which is valid for all specific natural forces – there can be no coherent employment of the understanding, without which in turn we should lack a 'sufficient criterion of empirical truth' (B 679). Thus while the truth is indeed constituted on the basis of experience, the full ('sufficient') truth is constituted only in the infinite process of enquiry enjoined by reason itself.

Against traditional metaphysics, Kant claims that the unconditioned is *merely* an idea, while against positivism, he adds that it nonetheless remains an *idea*. Thus the unconditioned retains a modest, but still indispensable, epistemic significance. Kant's approach transforms traditional metaphysics into a metaphysics in quotation marks, as it were; more precisely, the special metaphysics that was traditionally concerned with extraordinary objects now becomes a universal 'metaphysics' of a quite ordinary 'object', namely the process of enquiry itself. Both the positivist repudiation of the unconditioned and the metaphysical hypostatisation of the latter are therefore shown to be mistaken.

There is a specific form of positivism which seeks to develop or to postulates the notion of 'unified science', and for which physics has generally provided the model. Neurath, Carnap and Morris (cf. Neurath et al. 1969/70) argued that the traditional opposition between the rationalist and empiricist approaches to the construction of scientific knowledge could be overcome by combining logico-mathematical methods with experimentally acquired empirical data, and that all of the sciences, from mathematics and physics through chemistry and biology to psychology and sociology, could be constructed within a unified framework. While the modest version of this approach contents itself with the concept of a unified methodology, a more ambitious version attempts to reduce other sciences, chemistry at least and perhaps biology as well, to the science of physics, and the most ambitious version of all attempts to do the same even for psychology and sociology.

Even the more ambitious approach cannot in principle be described as positivist in a fundamentally problematic or unacceptable sense, especially if it allows itself to be governed by Kant's three principles of enquiry. Applied to nature as a whole, we would expect,

in accordance with the principle of homogeneity, to discover physical foundations for chemistry and both chemical and physical foundations for biology; at least the possibility in principle of reducing chemistry to physics is hardly challenged today; and the flourishing science of biophysics suggests at least a partial extension of this project of reduction. But for Kant the latter would equally require the principle of specification as a necessary corrective since we would also expect to encounter particular differences as well as universally shared features here. And the concept of 'emergence' developed in contemporary chemistry suggests as much. This concept, which has not yet been entirely clarified and still remains controversial, indicates that while compound substances such as common salt (sodium chloride) certainly depend upon the properties of their constituents, here sodium (Na) and chloride (Cl), even a complete knowledge of the constituents would not permit us to derive the specific properties of the compound (NaCl). Finally, in accordance with the principle of continuity, we should expect a gradual increase in both directions, an increase of specific variations in one direction and of universal features in the other. It is not the search for an overall unified scientific theory that is positivistic in itself, but only the kind of exclusive search that would rule out specific features like those suggested by the concept of emergence.

From a thematic point of view Kant's metaphysics of enquiry is fundamentally different from Popper's once much-discussed *Logic of Scientific Discovery* (first published in 1935 under the title *Logik der Forschung*). In the context of a theory of method developed for the empirical (natural) sciences Popper rejects the possibility of inductive inferences, replaces them with the principle of falsification (refutation), supplements the principle with the task of projecting hypotheses that are as substantive as possible, and presents hypotheses that have not yet been falsified as theories which have proved their value thus far, but can by no means be regarded with certainty as true. Thoughts of this kind belong, thematically speaking, to a theory of enquiry framed in terms of what Kant calls 'the understanding', but have little to do with Kant's theory of the role of 'reason'. And to the extent that one keeps to this theory of enquiry, such thoughts can be described as positivistic in the weaker sense. It is quite true that this position, unlike strict positivism, does not simply reject the question concerning the complete unity of our knowledge of nature as meaningless, but it does not itself address the question at all.

The principles of reason, as Kant calls them, relate merely mediately, rather than immediately, to experience itself. Traditional metaphysics and strict positivism fall into the contrary and reciprocal errors of treating this relation either as immediate in character (metaphysics) or simply as non-existent (positivism). According to Kant's middle way, which is not mechanically fabricated but 'exactly determined in accordance with principles' (*Prolegomena*, Section 58: 360), the faculty of reason is weaker than metaphysics claims, but stronger than positivism assumes. A metaphysics which claims to furnish knowledge of real states of affairs demands too much of that capacity of reason which the positivist, by contrast, underestimates by denying it any relevance for knowledge at all. In fact reason 'is never in immediate relation to an object, but only to the understanding; and it is only through the understanding that it has its own empirical employment. It does not therefore *create* concepts (of objects) but only *orders* them' (B 671). The first of these determinations ('does not create concepts') is directed against metaphysics, the second ('only orders them') against positivism.

This ordering capacity of reason which serves to bring unity into our knowledge might indeed be regarded as a remnant of traditional metaphysics, as an alleged presupposition of scientific enquiry which does not in truth hold at all. If we consider the history of our scientific enquiry into nature, the latter certainly appears, as we have suggested, eminently rational in the Kantian sense. Physicists seek, for example, to identify a single fundamental force or to discover a universal formula for the nature of the world. Biologists attempt to explain the abundant forms of life from fundamental processes which are common to all living beings. And the economic and social sciences project general theories which try and trace the rich variety of empirical elements and forces back to as few fundamental elements and fundamental forces as possible. They are all therefore following Kant's first principle of the homogeneity behind the manifold variety. But there where the same sciences search out ever finer distinctions and differences in the phenomena of the natural and the social world they must also acknowledge the complementary principle of variety.

In this way these two principles of enquiry also resolve a further conflict, in this case one that has prevailed amongst natural scientists rather than amongst philosophers: should they primarily be interested in unity or variety? Kant's response that they should 'naturally' be interested in both is an expression not of lazy intellectual compromise,

but of his insight that scientific enquiry only reveals its rationality by recognising and acknowledging both directions of investigation. Yet this 'both-and' presupposes Kant's thesis concerning the purely regulative function of the ideas. Given that the two contrary directions stand in opposition to one another, only one of the two could possibly be legitimate if they claimed to possess constitutive status (cf. B 682f. and B 694ff.).

In spite of this confirmation *through* experience, neither of these principles, nor indeed the third principle of continuity, derives *from* experience. For while experience is always limited, the principles are concerned with that utterly unlimited absolute completeness of knowledge beyond the reach of any experience. Thus the ideas of reason involve an aim that governs all enquiry, yet with every advance in the latter constantly recedes into unattainable distance. Comparable to the vanishing point of a painting that lies outside the work and yet determines the perspective, the process of enquiry follows the guidance of the ideas without ever actually reaching the absolute completeness of knowledge that forms their content.

Since the ideas act as a horizon that recedes with every advance we make, we might think that they simply commit us to so much 'fruitless effort'. In fact the completeness of knowledge does resemble the edge of the horizon that is never reached. Never given, but always given over to us as a task, the ideas designate a 'projected unity' rather than any actual present one (B 675). Nonetheless, they are neither redundant nor meaningless, but, on the contrary, make science into a rational enterprise in two respects. On the one hand, they constantly encourage further investigation, while on the other, they remind us of our finitude, namely the limitations that also beset our knowledge. Enquiry is an endless labour since it can never in principle be completed. As Goethe expressed the thought: 'If thou wouldst step into the infinite, / Explore the finite from its every side!' (*Werke*, I: 304). While enquiry has indeed its limits, since certain things lie entirely beyond our knowledge, it knows no bounds for it will nowhere find completion 'in its internal progress' (*Prol.*, Section 57: 352). Nonetheless, the progress of our knowledge is not merely imaginary, and nor does it resemble the fruitless labours of Sisyphus. Since this progress transpires 'as it were asymptotically' (B 691), one could speak of an epistemic law of decreasing marginal utility insofar as the progress in question becomes ever more subtle and differentiated in character.

One must of course qualify this and say: 'as a rule'. For alongside the normal progress of scientific knowledge, there are also great revolutionary changes such as the transition from classical physics to quantum physics and the physics of relativity. But these too remain within the horizon of enquiry framed and determined by the ideas of reason.

Notes

1. In his discussion Kant rather problematically translates 'entia' with 'principles'. In fact he starts by treating of 'things' in a narrower sense, such as salts and earths (B 680 f.), but later also deals with things in the broader sense: with forces and properties (B 690). (For the 'smallest possible number of principles' cf. B 361 and for the 'smallest possible number of concepts' cf. B 362).
2. The use of expressions like 'genus' and 'species' does not commit Kant to an (obsolete) ontological or biological form of classification since he employs sufficiently formal concepts in this context: by 'genus' he understands (expanding) levels of universality, by 'species', 'subordinate species', or 'further subordinate species', he understands (increasing) levels of particularisation.

Part VI

Epistemic Universalism

Scientific thinkers like to begin their investigations with reflections on method, but the first *Critique*, remarkably enough, places such reflections at the very end of the enquiry. It is true, of course, that the first two ‘Prefaces’ and the ‘Introduction’ furnish some preliminary indications in this regard. But it is only the subsequent discussion on the ‘Doctrine of Method’ that places what is merely sketched at the outset in the context of properly developed principles of reason. In this respect, it is clear Kant acknowledges the Aristotelian principle that genuine method must do justice to the object (cf. Höffe 1999²/2003, Part III): our provisional determination of the object only permits provisional reflections on method, for the latter in turn can only thoroughly be undertaken after an equally thorough determination of the object itself.

In the ‘Doctrine of Method’ Kant determines the formal conditions of a complete system of pure reason from four perspectives: a two-part meta-philosophy must reflect (1) on its own procedure (‘The Discipline of Pure Reason’) and (2) on a complete system of reason (‘The Architectonic of Pure Reason’). A further material philosophical contribution is introduced between the first two discussions to complete the *Critique* (3) through the concept of the supreme good. Finally, Kant outlines (4) a new kind of systematic history of philosophy (‘The History of Pure Reason’).

Although this arrangement is substantively justified, it also has a certain pedagogical disadvantage: banished as it is to the end of a very substantial work, the methodological discussion is rarely read, and even more rarely interpreted in detail. But the failure to do so seriously detracts from a proper understanding both of specific questions, and

specifically of Kant's theory of mathematics, and of the first *Critique* as a whole. The overall articulation of the work reveals the proper significance of its component parts. For only the 'Aesthetic', the 'Analytic' and the 'Dialectic' taken together constitute what the 'Doctrine of Method' represents in its own right: one part of an essentially two-part work. The opening section of the 'Doctrine of Method' immediately provides a fine image in this regard: once the 'building materials' have been examined and found to be fitting for a 'dwelling-house [...] on the level of experience', the second part projects the very house that the materials prepared in the first part have made possible. And if this edifice is no (Babylonian) tower that 'should reach to the heavens', that is certainly no cause for concern. For such a structure would only be doomed to collapse, while the edifice that it is actually possible for us to build is the one 'appropriate to our needs' (B 735).

FROM THEORETICAL TO PRACTICAL REASON

The ‘Transcendental Doctrine of Method’, the concluding section of the first *Critique*, begins with theoretical considerations, and thus with experience, and therefore initially unfolds a negative ontology. But this rejection of intellectual self-deception, of conceptual delusions, fabrications and empty fictions, is immediately followed by a plea on behalf of pure practical reason, and even a claim for the priority of the latter. The ‘dwelling-house’ that is truly ‘appropriate to our needs’ (B 735) thus accommodates not merely theoretical reason, but reason in its entirety.

The ‘Doctrine of Method’ is articulated as an ascending argument which commences with a two-part examination of the foundations of philosophy. In the first chapter, ‘The Discipline of Pure Reason’, the negative part repudiates a delusory foundation, one modelled on mathematics, while the positive part lays a genuine foundation, one oriented instead to the concept of right. The second chapter, ‘The Canon of Pure Reason’, then furnishes reflections on the concept of ‘the highest good’, which the third chapter on ‘The Architectonic of Pure Reason’, with reference to ‘the happiness of all mankind’ as the ‘supreme end’ (B 824), interprets as the concluding level or roof of the house of reason. The final chapter, ‘The History of Pure Reason’, does not provide a further development of the argument, but simply looks back, from the roof of the house so to speak, over the previous history of pure, but now merely theoretical, reason.

With respect to the field of knowledge, the ‘Doctrine of Method’ is not concerned with the totality of our faculties, but excludes any consideration of sensibility and the understanding and concentrates entirely on reason. Thus Kant describes the ‘Transcendental Analytic’ as ‘the canon of the pure *understanding*’ (B 824), while the ‘Transcendental Aesthetic’ has no ‘canon’ whatsoever. This itself provides another reason for Kant to place the ‘Doctrine of Method’ at the very

end of the book. For what it contains is not a general methodology for the theory of knowledge as such, but merely that of pure theoretical reason. And this serves to clarify three questions: why Kant returns once again to the three ideas of reason, 'the freedom of the will, the immortality of the soul and the existence of God' (B 826), why he treats theoretical reason negatively in this connection, and why he only treats practical reason positively here. In place of the ruined edifice of the theoretical metaphysics of God and immortality, we are offered a practical metaphysics instead.

21.1 A Principle of Right in Place of Mathematics

The first guiding concept of the 'Doctrine of Method', that of the 'discipline' of reason, is not intended to characterise any specific substantive domain of philosophy, but rather performs a negative pedagogical task. It refers to the discipline which is required not in order to develop or increase certain given accomplishments, but to render them possible by hindering or preventing their possible misuse (cf. *Pedagogy*, IX: 442). It is 'humiliating' (B 823) to note that reason, whose 'proper duty is to prescribe a discipline for all other endeavours' (B 738), should itself stand in need of discipline. But the latter is indispensable for reason given the danger of 'idly substituting fancies for concepts and words for things' (B 738). And this humiliation is also diminished by the fact that reason itself administers its own discipline here. Thus it does not exercise this discipline in the way in which a teacher disciplines another, such as a pupil. As the 'Dialectic' has already exhibited, it submits itself to a discipline which, in the context of the dogmatic use of reason, effectively amounts to 'a system of precaution and self-examination' (B 739).

1. *In Place of Mathematics*. Many readers simply identify the theory of mathematics furnished in the first *Critique* with the claims presented in the 'Aesthetic'. But this fails to do justice to further important doctrines which are developed in the 'Analytic', the 'Dialectic', and especially in the differential analysis of the 'Discipline'. For we may say that the latter effectively states the case for 'philosophy contra mathematics' (cf. Wolff-Metternich 1995).¹

From Plato to the early Wittgenstein the science of mathematics has exercised a peculiar fascination for many philosophers. And

Kant understands this fascination since mathematics, this ‘pride of human reason’ (B 492) which properly represents its ‘great success’ (B 752), furnishes an exemplary case of scientific thoroughness with its three fundamental components: concepts established through definitions, fundamental propositions established through axioms, and strict demonstrations. That is why mathematics provides ‘the most splendid example of the successful extension’ of a science even without the aid of experience (B 740). But for all that Kant refuses to yield to the fascination traditionally exercised by mathematics. For in opposition to Wolff, for example, and to his own earlier pre-critical attempt to ‘marry’ geometry with metaphysics (*Monadology*, I: 480), Kant insists that philosophy cannot emulate mathematics with respect to any of these three features, let alone be ‘identified’ with mathematics itself (B 741ff.). The reason for this difference between philosophy and mathematics does not lie in a different respective subject matter, qualities instead of quantities for example, since philosophy also deals with concepts of magnitude, such as totality and infinity, and mathematics also deals with qualities, such as continuity in spatial extension. The difference in question lies entirely in a difference of method. Thus Heinrich Heine’s original diagnosis (1997: 97), which suggested that after Kant the mathematical method would never raise its head in philosophy again, should have been amply confirmed by now. Philosophers such as Russell, Whitehead and the early Wittgenstein may well have adopted a different view because they were not familiar with Kant’s own relevant reflections in this regard.

The first *Critique* certainly acknowledges one feature which philosophy shares with mathematics: the appeal to strictly rational knowledge. But in the domain of mathematics rational knowledge arises from the process of constructing our concepts, which is why mathematics can ‘make’ its own concepts (B 758) and can nonetheless find them confirmed in intuition. The intuition in question is of course pure intuition, so that all application to objects of the real world is a matter for empirical experience rather than for mathematics itself. Nor does Kant deny (as argued in Friedman 1992: 96ff.) that mathematical theories can be derived and developed in formal terms. He merely argues, in agreement with subsequent intuitionists and constructivists, that two non-deductive but rather intrinsically intuitive elements must also come into play here: definitions (that of the circle, for example), and synthetic a priori principles, namely the axioms (B 760f.: ‘for

example, that three points always lie in the same plane'). Philosophy, on the other hand, furnishes rational knowledge on the basis of concepts. In the absence of intuition, therefore, mathematical method as deployed in philosophy can only produce 'so many houses of cards' (B 755).

How far we may extend the concept of mathematical intuition is a controversial question. Interpreted in a broad sense, intuition for Kant simply guarantees the 'truth' of the axioms, while the theorems are derived from the axioms quite independently of intuition (cf. Martin 1969⁴: 18ff., 44ff.; and Brittan 1978: 71ff.). Interpreted in a narrow sense, as in Friedman (1992: 80ff.) who follows Russell in this respect, intuition also enters into the process of derivation itself. In the case of geometry, intuition is said to facilitate the construction of the relevant objects, through the drawing of the required lines for example. On the broader interpretation of intuition, non-Euclidean geometries would be quite possible for Kant, although this is excluded by Friedman's narrower interpretation. One argument, according to which the possibility of non-Euclidean geometries is ruled out by the first postulate of empirical thought, is certainly unconvincing. For geometry does not contradict the criterion that something is possible as long as it agrees with the formal conditions of experience (with respect to intuition and concepts) (B 265). On the contrary, the discussion explicitly speaks of the concept of a figure that is enclosed by two straight lines, which clearly suggests the possibility of a non-Euclidean geometry. Kant himself argues that such a figure is not self-contradictory, even though he also claims that it is impossible to construct one. But he does not strictly ground this claim, and nor indeed does it follow from the concept of space, or the notion of mere spatiality, for which alone the first *Critique* legitimately argues. The alleged impossibility only arises from the exclusive status which Kant bestows upon Euclidean geometry (cf. Chapter 7.3 above), even though this status cannot be demonstrated in transcendental terms; and non-Euclidean space also satisfies the formal conditions of intuition demanded by Kant's partial criterion for possible objects (cf. *Thoughts on the True Estimation*, 1: 24, which already expresses a similar line of thought). The mathematicians also fulfil Kant's further condition that their defined concepts 'contain an arbitrary synthesis that admits of a priori construction' (B 757). For they show in practice that and how non-Euclidean space can be constructed, something which modern physics has subsequently also confirmed empirically.

Kant's general argument in the 'Discipline of Pure Reason' appears convincing: built up as it is on the basis of a pure, but in the case of geometry not necessarily Euclidean, intuition, mathematics is a science of also partly intuitive character which combines thought and intuition as the two functions that are indispensable to knowledge. In the absence of intuition, on the other hand, philosophy would be a non-discursive science quite incapable of furnishing any genuine knowledge. Whereas mathematics treats with its non-sensuous, i.e. non-empirical, object in a sensuous, namely intuitive, manner, philosophy deals with its non-sensuous object, namely the synthetic a priori, in an entirely non-sensuous manner.

Kant elucidates this difference specifically with respect to the three basic features of mathematics we have mentioned, showing how philosophy fails in each case to replicate them, and thus indirectly justifies the non-mathematical procedure that is adopted in the first *Critique*. But the fact that philosophy itself is incapable of generating such definitions, axioms or demonstrations does not imply that it cannot determine its own concepts, set out its own fundamental principles, or provide its own kind of demonstration. It is simply that it cannot do any of these things in a specifically mathematical way. And the reason for this lies not in some temporary deficiency of philosophy that might in principle be remedied, but in the quite different mode of procedure appropriate to the latter. That is why philosophy cannot advance along its path as 'securely' as the science of mathematics, but must 'constantly turn back to consider whether we may not [...] discover defects which have been overlooked' (B 763). Hence the system of 'self-examination' required by the 'Discipline of Pure Reason' is also a 'system of precautions' (B 739):

- (1) Whereas mathematics generates its own concepts, and thus defines them in the strict sense, i.e. delimits them in an exhaustive manner, philosophy merely provides an exposition (an explication or 'Erklärung') of concepts that are already given, and is therefore never apodictically certain of the complete analysis that it seeks. In this respect, therefore, the situation is no different in philosophy than it is in natural science. As a regulative idea, absolute completeness – as we may now add – is never simply given in philosophical investigation either, but always remains given over to us as a task. Even with this qualification, 'definition, in all its precision and clarity, ought, in philosophy, to come rather at the end than at the beginning of

our enquiries', whereas in 'mathematics, on the other hand, we have no concept whatsoever prior to the definition'. Hence it follows that 'mathematical definitions can never be in error' (B 758f.), although this also implies, in reverse, that they are not capable of bearing a truth-value either.

- (2) Axioms are evident and immediately certain propositions. Since these propositions therefore neither permit nor require any deduction, they can only belong to a science that is intuitive in character and capable of exhibiting such immediate certainties, namely the science of mathematics. Since the fundamental propositions of philosophy, on the other hand, such as the principle of causality, possess an essentially discursive character, their validity can only be justified by means of a thorough deduction.
- (3) Whereas, as the literal meaning of 'de-monstration' (the 'contemplation of an object') suggests, mathematics is concerned with processes of intuitive proof, philosophy is incapable of providing such demonstrations precisely because it lacks the relevant intuition. Since, on the contrary, philosophy conducts its proofs 'by the agency of words alone (the object in thought)', Kant describes these proofs as 'acroamatic' (i.e. related not to seeing but to hearing) (B 762f.).

He thus draws the inescapable conclusion that philosophy must modestly refuse 'to deck itself out with the title and insignia of mathematics, to whose ranks it does not belong'. But this does not mean philosophy is a merely secondary or subsidiary science. For over against the scientific thoroughness which we have already indicated, and which is the distinctive advantage of mathematics, philosophy furnishes its own thoroughness in 'sufficiently clarifying our concepts to recall it [sc. philosophy] from its presumptuous speculative pursuits to modest but thorough self-knowledge' (B 763).

Although philosophy cannot appeal to intuition as the condition of all synthetic knowledge, for Kant it is not, remarkably enough, limited to merely analytical propositions. For of course he has uncovered the unique exception of 'synthetic propositions which concern things in general, the intuition of which does not admit of being given a priori' (B 748). With this reference to things in general, the objects of all possible worlds, Kant may indeed initially seem to have fallen back to the standpoint of pre-critical ontology. But he is investigating not things as such, but things from the perspective of the transcendental

epistemic question concerning the conditions under which intuitions for things can be given in the first place. In this way Kant restricts the objects of *all* possible worlds, including merely conceptually possible worlds, to *actually* possible worlds. Objects for which, as with things in themselves, no intuition can be given are also conceptually possible, but only appearances are ‘actually possible’ since they alone fulfil the conditions of possible intuition.

The possibility of a genuinely synthetic philosophy thus depends upon the question whether there are certain indispensable presuppositions with regard to possible intuitions. According to the ‘Analytic,’ there are four such presuppositions: the pure concepts, the pure ‘I think’, the pure schemata and the pure principles. But these presuppositions are fulfilled not by pure reason, but solely by the pure understanding, and even then not in an immediate manner. Thus ‘in the whole domain of pure reason, in its merely speculative employment, there is not to be found a single synthetic judgement directly derived from concepts’ (B 764). Pure reason is capable neither of directly deriving a synthetic proposition, or *dogma*, from concepts, nor of producing a *mathema*, a directly synthetic proposition, by recourse to construction through concepts. For while reason, with its ‘ideas’, permits no synthetic judgements whatsoever, pure reason does, through the cognitive activity of the understanding, establish secure principles, though ‘always only indirectly through relation [...] to something altogether contingent, namely, *possible experience*’ (B 764f.). Philosophy becomes a synthetic science not as a theory of things in general, but only as a theory of the things of possible experience.

Since the experience presupposed in this connection is ‘altogether contingent’, philosophy seems to acquire its synthetic character only at the cost of renouncing the a priori. But Kant claims the a priori not for experience, but for the presuppositions of experience, so that his argumentation assumes a hypothetical character: *if* there is experience, *then* it necessarily has this or that specific presupposition. As de facto examples Kant instances the principles of the pure understanding – from the axioms of intuition through the anticipations of perception and the analogies of experience through to the postulates of empirical thought (cf. B 752) – and thus once again underlines the importance of all these, but at the same time he excludes the ideas of reason by entirely ignoring them here.

2. *A Principle of Right* Anyone who regards mathematics alone as the proper paradigm for philosophy, can only depart empty-handed in the face of Kant's renunciation of this entire approach. Taking the determinate negation, or precise diagnosis, of this supposed paradigm as his criterion, Kant identifies an alternative approach which can nonetheless, like mathematics, claim an eminently rational character. In the second section of the 'Discipline of Pure Reason' Kant turns back once again to the issue which originally prompted the first *Critique* itself, namely the 'battle-field' of metaphysics (A viii) and, under a title referring to the 'polemical employment' of pure reason, deploys the imagery of war, strife, conflict and combat. Such expressions characterise a state of nature which contradicts the very essence of reason and demands a proper or rightful rational resolution. Strictly speaking, however, the disputes to be resolved only arise where reason, in contradiction to its own essence, directs itself to objects in an immediate manner. But as long as reason remains true to its mediate relation to objects, the conflict in question transpires merely between one philosopheme and another, and not at the heart of reason itself.

If a fair trial of the case is to be attempted, there are no fewer than eleven preliminary conditions that must be fulfilled (B 766ff.). The first (1) is the elementary right to freedom in the exercise of critique, over against every form of prohibition, including censorship. Then, as an extension of this, there is (2) the elementary demand for equality of treatment so that no one and nothing is exempted from the exercise of critique, and (3) the fundamental principle of democracy that all citizens have the same right to speak and to participate in the decision-making process. This further involves (4) the principle of free discussion which allows us to present our thoughts openly for public judgement. We must also recognise (5) the demand for honesty in place of deception or disingenuousness and (6) the fundamental judicial principle of neutrality, and thus of impartiality. And here (7) universal human reason provides the required basis, just as human dignity provides the basis for human rights. The specific framework for the resolution of disputes is established (8) through a legislation which is grounded upon the critique of reason, which (9) can also exercise rightful constraint, and which (10) consists materially in a principle specifically formulated later in the 'Doctrine of Right' (Section B) in Kant's *Metaphysics of Morals*: the freedom of each may only properly be limited in order that it may be consistent with the like freedom of

everyone else (B 780). And finally (11), against the appeal to political considerations of the state and the fear lest ‘the foundations of public welfare’ (B 777) might be endangered, Kant claims that this limitation of freedom can certainly be ‘consistent with the common good of all’ (B 780) and thus is entirely compatible with the general welfare of the community. And indeed, in an earlier passage, he argues that the greatest happiness will even ‘follow of itself’ from such a constitution (B 373).

21.2 Morality

After the predominantly negative legislation outlined in the ‘Discipline of Pure Reason’, the following chapter on ‘The Canon of pure Reason’ provides a kind of positive counterpart to the preceding analysis, although here too Kant begins by drawing certain negative conclusions. With regard to the question concerning the ultimate end of our reason, Kant turns once again to the three ideas of reason and claims that our interest in theoretical reason is subsidiary in character. Even if we undertook to demonstrate the freedom of the will, the immortality of the soul and the existence of God, nothing would be gained thereby with respect to our knowledge of nature since these ‘three cardinal propositions’ can furnish no explanatory ground for natural phenomena whatsoever, and consequently ‘are not in any way necessary for *knowledge*’ (B 827f.). But since the ‘ideas’ are still ‘strongly recommended by our reason’, they must be important for a different domain, namely that of practical reason.

Kant orients his argument to the three questions which have subsequently become so celebrated and which sum up the entire interest of reason itself: ‘1. What can I know? 2. What ought I to do? 3. What may I hope?’ (B 833). While theoretical reason corresponds to the question of knowledge, and practical reason to that of morality, there is no third independent and mediating capacity of reason, such as the reflective power of judgement, which corresponds to the question of hope. For Kant is concerned instead with the consequences of moral action and, for the sake of the attractiveness of morality, anticipates a world in which happiness is proportional to virtue. Now since the world belongs to the domain of theoretical reason, and morality to that of practical reason, the third question unites the first two.

The object of hope refers to a totality, not indeed to a totality of knowledge as in the case of the 'Dialectic', but rather to the totality of what is worth striving for, namely the ideal of the supreme good. The latter involves two superlatives, as it were, that of satisfaction, or happiness, and that of right action, or morality, although each is relativised for its part as falling short of the highest ideal. Only taken together do they constitute what is indeed the supreme: that complete correspondence of satisfaction and morality which consists in the happiness that is proportional to our worthiness for happiness. With this correspondence Kant overcomes the dualism of nature and freedom: starting from the question of knowledge ('nature'), and pursuing the question of moral obligation ('freedom'), he arrives at the question of hope which combines both of the former. As an expression of modality, the 'may' belongs to this third question in a threefold sense: I am 'entitled' to hope, I can do so with a 'happy' prospect, and I have 'good reason' to do both.

The third question unites the natural human desire for happiness with an inference that is morally if not theoretically valid, one concerning two presuppositions, that of the existence of God and that of the immortality of the soul, which Kant will subsequently describe as 'postulates' of pure practical reason (cf. *Critique of Practical Reason*, V: 132). Whereas the supreme good is an object of 'hope', these two presuppositions are an object of 'belief' (cf. Chapter 22.1).

In his brief response to the third question, one that is not always entirely perspicuous and is sometimes asserted rather than argued, Kant presents the basic outlines of his moral philosophy, together with the moral theology that essentially completes it. His argument already deploys more or less the entire network of fundamental concepts that are also decisive with respect to the later formulations of his moral thought. Thus we find references to the 'ought', the notion of hope, practical laws, maxims, imperatives, motivating grounds or incentives; also to happiness, pragmatic or prudential rules, hypothetical commands, pure moral laws, the moral law; and finally to morality, moral disposition, freedom, the supreme good, the moral world and God. And other concepts are also effectively implied in Kant's text here: the 'categorical imperative' in his remarks on moral laws which 'command in an absolute manner' (B 835), the concept of 'technical imperatives' in his observation that once 'an end is accepted, the conditions of its attainment are hypothetically necessary' (B 851), as well as the concept

of autonomy in his reference to a 'free will under moral laws' (B 836) and that of legality when he speaks of a world 'in accordance with all moral laws' (B 836; cf. also B 838). (For a detailed analysis of Kant's later conceptual terminology cf. Höffe 2001, Chapter 5).

One important peculiarity is also worth noting here: there is no mention either of that 'respect' for the law as the fundamental criterion of morality or of 'the good will'. Presumably Kant had not yet managed to articulate his ultimate position with the required clarity. He certainly emphasises the priority of the moral disposition since it is this which 'makes possible the participation in happiness, and not conversely the prospect of happiness that makes possible the moral disposition' (B 841). But he also distinguishes here between two forms of acknowledgement: a purely judicial one of evaluation (involving 'approval and admiration') and an executive one of realisation (involving what we could call 'intention and performance'). He then coordinates the 'purity' of the moral law solely with such evaluation, while binding the realisation of morality to our hope for a world, established by God, in which happiness shall be proportional to morality. Kant here concedes too much power to the principle of self-love to be able to rely on morality without it, let alone in opposition to it. The moral world is therefore only autonomous with regard to the first level of acknowledgement, while on the second level it is contaminated by a moment of heteronomy. The moral law itself is certainly presented as entirely independent of all empirical incentives, but the motivation to moral action is still influenced by reference to an omnipotent God, and thus by a residual trace of external determination, something which Kant only fully eliminates in the *Groundwork* and the second *Critique*. In the first *Critique*, on the other hand, pure reason is not yet presented as fully practical in its own right since it still acts in a merely judicial rather than in an executive sense as well.

But apart from this attenuation of the concept of autonomy, Kant is already quite clear about essential aspects of his later moral philosophy (B 834ff.). He defines happiness boldly and ambitiously as the three-dimensional maximum of the 'satisfaction of all our desires, extensively, in respect of their manifoldness, intensively, in respect of their degree, and protensively, in respect of their duration' (B 834).² Kant describes the practical law which is derived from 'the motive of happiness' as 'pragmatic' in character, or as a 'rule of prudence', regards it as grounded on entirely empirical principles and contrasts

it emphatically with the moral law or those pure moral laws 'which determine completely a priori (without regard to empirical motives, that is, to happiness) what is and is not to be done [...] and command in an *absolute* [later he will say: categorical manner]'. And here he appeals not merely to 'the proofs employed by the most enlightened moralists', but also 'to the moral judgement of every man' (B 835). The answer to the second question, 'What ought I to do?', the question concerning the moral law, thus runs as follows, in the version of the categorical imperative that is suggested in the first *Critique*: '*Do that through which thou becomst worthy to be happy*' (B 836f.), abstract therefore from all empirical principles that are oriented to happiness, and 'consider solely the freedom of a rational being in general' (B 834).

Kant's answer to the question 'What may I hope?' is as clear as it is simple: it is 'the hope of happiness' (B 838). But our reason can only approve happiness in a measure that corresponds to 'moral conduct' (B 841). Kant is here implicitly addressing the problem of the Biblical figure of Job: it is intolerable for reason to see the upright suffer and the wicked prosper. For if there is no a priori connection between moral laws and the 'promises' and 'threats' made to the upright and the wicked respectively, these laws cannot, and here that means: may or should not, present themselves as 'commands' (B 838f.).

With regard to the related question about precisely how this happiness proportional to morality is established, Kant initially appeals to a 'system of self-recompensing morality' (B 837). He is not thereby arguing that morality already carries its own reward so that the upright individual, content with his or her own virtue, can renounce all further pragmatic concerns with happiness. Rather, he claims that freedom, assuming that it constantly subjects itself in every individual to moral commands, is itself the ground and cause of universal happiness. With regard to moral laws we can illustrate this with examples provided in the *Groundwork*. If everyone refrains from making dishonest promises and refuses to consider suicide, if everyone also offers assistance to those in need and undertakes to develop their own talents, then – so Kant claims in the 'Canon of Pure Reason' – this would produce a comprehensive happiness where every individual is author of both his own happiness and that of others.

It is remarkable that Kant does not address the first difficulty, external to morality, that even this comprehensive worthiness for happiness cannot guarantee happiness itself. For events entirely independent of

morality, such as particular accidents or natural catastrophes, can obviously impede the satisfaction of our desires to such an extent that no such comprehensive happiness can be realised however much assistance we may receive from others.

Kant only discusses the second difficulty, internal to morality, that moral laws still remain binding on us even if these laws are not obeyed or acknowledged on all sides as they should be. Since this does not ensure a happiness that is proportional to morality, Kant now makes a second attempt to resolve the problem by recourse to a cause of proportionality that is external to human freedom. This proportionality can only be established by a supreme reason which is 'the cause of all happiness in the world (so far as happiness stands in exact relation with morality, that is, with worthiness to be happy)' (B 838). This supreme reason consists in a will that is omnipotent, omniscient, omnipresent and eternal. Thus Kant derives from a few premises the God who can 'appropriately' ensure the proportionality of happiness and morality. This God 'must be omnipotent, in order that the whole of nature and its relation to morality in the world may be subject to his will'. He must be 'omniscient, that He may know our innermost sentiments and their moral worth; omnipresent, that He be immediately at hand for the satisfying of every need which the highest good demands; eternal, that this harmony of nature and freedom may never fail' (B 843). Thus the ideal of pure reason that possessed a merely theoretical significance in the context of the 'Dialectic' here fulfils a practical as well as theoretical role and thus, by virtue of this double function, now becomes 'the ideal of the supreme *original* good', in relation to which the moral world is 'the supreme derivative good' (B 838ff.).

Despite this special role which he ascribes to God with regard to the moral world, we cannot say that Kant's previously entirely secular philosophy falls back into an essentially pre-secular mode of thought. For he still remains true to his repudiation of any attempt to provide a theological grounding for morality. Thus instead of a theological morality whose moral laws presuppose the existence of a supreme Ruler of the world, Kant defends a moral theology which, on the contrary, grounds our conviction of the existence of a supreme being precisely upon moral laws (B 660, Footnote). From what we may call a theo-nomous perspective moral laws are only obligatory for us 'because they are the commands of God', whereas from Kant's literally auto-nomous

perspective they can only be regarded as divine commands 'because we have an inward obligation to them' (B 847).

It may seem astonishing that Kant also says that practical freedom, as the subjective basis of morality, can be 'proved through experience' (B 830f.). This view appears to contradict the argument of the third antinomy and may look like a pre-critical trace of Kant's earlier thought. In fact practical reason merely involves a capacity which can leave aside the problem of the third antinomy, namely the question whether reason 'is not, in the actions through which it prescribes laws, itself again determined by other influences' (B 831). For the freedom that Kant says is proved through experience consists not in the animal, but in the free will which can be 'determined independently of all sensuous impulses, and therefore through motives which are represented only by reason' (B 830). These representations need not be specifically moral ones; and since Kant rather regards them as oriented to the well-being of the individual, he is here envisaging a kind of pre-moral and pragmatic form of freedom.

Freedom is often conceptualised in a manner that soon finds itself entangled in aporias, as when we claim that we could have acted differently than we actually did. (Many believe that this approach already addresses the question of the freedom of the will, whereas it is only freedom of action which is at issue here). Kant simply appeals instead to the human capacity to evaluate alternative possibilities of action as 'beneficial or harmful' (B 830) and to express this evaluation in objective laws, and regards these laws as an achievement of reason. He points out that such laws are not necessarily realised when they are confronted by competing sensuous motives of one kind or another. But they possess the status of imperatives that demand, in the name of the long-term interest of the individual, that sensuous motives must sometimes be overcome. Since human beings are obviously capable of acknowledging and acting upon such pragmatic imperatives, Kant can properly claim that this pre-moral freedom is substantiated by experience. Thus in order to avoid a premature and over-hasty interpretation of genuinely moral freedom, of the freedom of the will, Kant begins by considering the less ambitious concept of a practical freedom which rises above our immediate sensations of the pleasant or the unpleasant by means of sub-moral imperatives.

As we have already indicated in our earlier discussion of the concept of freedom as autonomy, we can distinguish four levels of human

willing: (1) we may already ascribe a kind of freedom to the purely sensuous faculty of desire insofar as we act spontaneously from within ourselves rather than through merely external compulsion. But on this level the will is here still determined by sensuous impulses, by sensations of the pleasant and the unpleasant, something which corresponds to the mere judgements of perception in the theoretical domain (cf. Chapter 9.3); (2) the level of imperatives overcomes these sensations as the determining ground of action, and reveals, in the simplest case of the ‘technical imperatives’ which Kant does not explicitly mention here, a technical freedom that is oriented solely to questions of ends and means. This level broadly corresponds to that of the judgements of perception that are independent of experience; (3) the pragmatic imperatives, and the pragmatic freedom corresponding to them, serve the ‘ends which are commended to us by the senses’ (B 828) and thus serve happiness as the sum of these ends. These imperatives thus possess an empirical character and correspond to the level of the judgements of experience; (4) it is only at the level of moral imperatives that empirical motivating grounds are suspended and pure practical freedom rules in its own right, the level which corresponds to pure a priori judgements in the theoretical context.

21.3 Rational Hope

Kant’s response to the first two questions, concerning knowledge and obligation respectively, are, of course, very well known, at least in general outline and with respect to their enormous significance. But even professional students of philosophy rarely realise that the guiding concept of the third question, namely ‘hope’, is also treated with such sovereign insight that it is difficult to discover any philosophy of hope, before or after, that can approach that of Kant for originality, thoroughness, and depth of awareness with regard to the central problem. Compared with almost all of the alternatives, we must acknowledge that Kant’s ‘concept of hope towers up like a cathedral over the market stalls’ (Conradt 1999: 192).

The ‘hope’ that Kant addresses in the ‘Canon of Pure Reason’, unlike the word in most everyday contexts, has nothing to do with any old objects that we may happen to desire. It is directed to a

single and exemplary object, namely the supreme good, and represents more than a mere affect, let alone an illusory case of wishful thinking. Nor does it represent a certain weakness of spirit on our part (cf. Spinoza, *Ethics*, IV: Prop. 47). For Kant it articulates pure reason itself and constitutes an indispensable part of a fully coherent philosophy of morality that can also be practically applied. And despite its rational character, this approach also retains an affective element. For hope here is directly connected back to that desire for happiness that springs from our own finitude and neediness, and its essence lies in a unique synthesis of moral rationality and affectivity. We may speak of a 'legitimizing ground' with respect to the first aspect, and of an 'inspiring ground' with respect to the latter (cf. Conradt 1999: 51ff.). And we must also acknowledge a third moment, that of 'realisation', which belongs to the concept of hope: it is the existence of God and the immortality of the soul which first provide the appropriate presuppositions for a happiness that is proportional to morality.

With respect to its theoretical function, hope furnishes an epistemically valid perspective upon the existence of God and the immortality of the soul. Kant makes no appeal either to religious experience or to the kind of pragmatic considerations exemplified by Pascal's 'wager'³ (if there *could* be such a thing as eternal life, one is better advised to believe in God than not to do so). In this regard Kant's philosophy of hope involves neither elements of feeling nor any calculation of possible happiness, and represents a pure religion of morality. With respect to its practical function, hope helps to prepare the subjective incentives which are themselves required for realising objectively demanded moral laws since pure reason acts only in a judicial rather than also in an executive capacity.

The concept of hope as deployed in the first *Critique* is therefore connected directly to the difference between the judicial and executive acknowledgement of morality (cf. 21.2 above). This connection has prompted an initial objection which charges that Kant's approach remains heteronomous after all. It is alleged that there is a fundamental contradiction between the autonomy of the will and a hope for happiness that threatens the purity of an exclusively moral religion. Thus, according to Hermann Schmitz (1989: 81), Kant yields to the temptation of a 'cynical eudaemonism' insofar as moral motivation is still based, at least in part, upon our own hope for happiness. Although this objection is not entirely without foundation, it is nonetheless

overdrawn since it fails to identify the precise problem here. Hope here adds nothing significant to the moral dimension of our worthiness to be happy, but only to the pragmatic dimension of happiness itself. For if we hope for the supreme good, and believe in the corresponding postulates of God and immortality, we may not become better, but we may fare better. Thus the 'Canon of Pure Reason' merely allows a weak eudaemonism as an incentive to moral action.

A second objection charges Kant's argument with circularity and claims that the hope for a future life presupposes the good disposition which the hope, as a component of the incentive, is supposed to produce in the first place. In order to meet the second objection, and the partly justified character of the first objection, Kant will soon develop his complete concept of autonomy and will cease to treat hope as an *analogon* of knowledge with regard to certain transcendent claims, as he had done in the first *Critique*. He is then compelled to weaken the significance of hope in this respect and, in particular, to eliminate its role as an incentive entirely. But the consistent character of moral obligation still remains in place as before.

According to a third objection, Kant gives an illegitimately theoretical extension to the argument by deploying his moral theology, which is an element of an essentially practical theory, in support of a theology of nature, a physico-theology (B 855). But this objection fails to appreciate that while Kant certainly attempts a certain rehabilitation of physico-theology, the latter possesses a subordinate status with respect to moral theology. What is more, the concept of hope mediates the second question with the first, and thus cannot simply be restricted to the domain of morality, but also expressly opens itself to the dimension of nature. Hope is not a purely practical concept for Kant, but one that is at once theoretical and practical.

In order to determine the epistemic character of such hope, and of the supreme good that is its proper object, and to contrast it with the deluded hopes of theoretical reason, Kant proceeds to distinguish three distinct levels or degrees with respect to our possible truth claims. In an exemplary and perceptive analysis entitled 'Opining, Knowing and Believing' (B 848ff.), Kant situates the cognitive dimension of his concept of hope within the broader context of a systematically comprehensive, and indeed complete, epistemology. By introducing a new and intermediate epistemic level into the analysis, this epistemology overcomes the dualism between opinion (*doxa*)

and knowledge or science (*episteme*) which has so often been defended from antiquity to the present.

This new level, that of 'belief' [*Glaube*], prevents God and the immortal soul, the objects that have been banished from the domain of knowledge (which 'mere speculation can think only, and cannot establish': B 846), from being relegated to an entirely unworthy epistemic status. Since belief is naturally not merely valid for these objects, Kant avoids the charge of simply indulging in *ad hoc* assumptions. And since he also recognises a level below that of belief, he distinguishes four levels in all (B 848ff.). This prior level, strictly speaking, this pseudo-level, is that of mere 'persuasion' [*Überredung*] or 'deceptive judgement' (B 849). The 'mere illusion' (B 848), the 'arbitrary fiction' (B 850) and the 'play of the imagination' (B 850) that characterise this level, expressions already familiar from the 'Dialectic', correspond respectively to what Kant specifically describes as 'delusions', 'figments of the brain' and 'enthusiasm'. Thus Kant's exemplary analysis not only clarifies the epistemic character of hope, but also indicates in passing the pseudo-epistemic character of the claims investigated in the 'Dialectic'. They do not even qualify as 'opinion' [*Meinen*], a level which itself is 'not in any way permissible' where 'judging by means of pure reason' (B 850) is concerned.

In thematising this preliminary level, or pseudo-level, Kant also introduces a second change with respect to the prevailing tradition of dualistic epistemology. Whereas Plato, like Parmenides before him, had regarded the world of 'opinion' simply as a world of untruth, Kant relegates the untrue to this pseudo-level and thereby elevates opinion to an initial, if still inadequate, level of truth. The inadequacy of this level is indeed considerable since opinion is a way of claiming truth which is both subjectively and objectively insufficient. On the second level, that of 'belief', the way in which we claim something to be true is only subjectively sufficient, or solely for the individual subject in question. Finally, at the level of knowledge, we also claim something to be true objectively, and therefore in a way that suffices for all judging subjects.

At first sight, Kant's fourfold distinction may well recall Plato's famous image of the divided line (*Republic*, VI: 509–11), but there are also crucial differences here. Thus Plato defends a fundamental dualism between *doxa* and *episteme*, and also ascribes a certain positive epistemic character (albeit a very weak one) to *eikasia* ('supposing') as the

first stage of *doxa*. Thus Plato's first level corresponds to Kant's level of 'opinion', and his second level, that of *pistis*, corresponds to Kant's level of 'belief', but there is nothing that corresponds to Kant's preliminary level of 'persuasion'. Again, in Plato's discussion of 'belief' there is nothing corresponding to the specifically moral rather than theoretical kind of belief that is decisive for Kant. Finally, Plato's highest epistemic level of *noesis*, where the mind intellectually grasps the ideas, for Kant entirely forfeits the status of 'science' in the sense of objective knowledge.

Kant's three epistemic levels, along with their preliminary pseudo-level, are also discussed in the *Critique of Judgement* (Sections 90f.), and indeed had already appeared in his lectures on logic (cf. *Logic Pölitz*, XXIV: 541ff.). This alone suggests that we are dealing here with a central doctrine of the critical philosophy, although the particular emphasis is slightly different in each case. The logic lectures develops the three levels, there described as 'degrees', in terms of the three judgements of modality (opinion, belief and knowledge being identified with the problematic, assertoric and apodictic degrees respectively). Kant recognises that 'belief' can be either theoretical or practical, and points out: 'In the former case, it is grounded upon the testimony of others and is described as historical, in the latter, it is based upon interest, but also upon reason, and this is moral belief'. And Kant adds the remark: 'In mathematics, one can also exercise belief, as a great man has said, but this is not the case in philosophy since the latter lacks the comparable means to recognise false steps in the argument'. In the *Critique of Judgement* the discussion focusses upon the classes of the objects involved. Opinion is directed to possible experience, that is, to objects of the sensible world, whereas with respect to the ideas of reason one 'cannot even' have an opinion since 'to have an opinion a priori is absurd on the face of it and the straight road to pure figments of the brain' (Section 91, V: 467). Knowledge is directed to objects the objective reality of which can be demonstrated, that is, to facts, whereas matters of 'belief' or 'faith' (the supreme good, the existence of God, the immortality of the soul) stand 'in relation to the use of pure practical reason in accordance with duty' (Section 91, V: 469).

Even though it is merely the intermediate level between opinion and knowledge, belief is directed towards the highest ends of reason, which explains the initially surprising order of the terms as they

appear in the title of this section of the 'Canon': 'Opining, Knowing and Believing'. Belief succeeds knowledge because it enjoys a higher status than the latter in four respects: through the structure of the general argument since the decisive concept of rational faith or belief only imposes itself upon after addressing the question of knowledge, namely the failure of purported knowledge exposed in the 'Dialectic'; in relation to reason since belief is concerned with the highest ends of the latter; from the existential perspective since belief relates to one's own life and to the significance of life as a whole; in relation to the three questions that sum up the interests of reason since the concept of hope mediates between theoretical and practical reason. All of this also serves to clarify the thesis formulated in the B 'Preface': 'I have therefore found it necessary to deny *knowledge*, in order to make room for *faith*.' (B xxx). If we possessed theoretical knowledge concerning the existence of God or the immortality of the soul, we should not have to believe in them.

Such 'modesty' from 'the *objective* point of view' simultaneously expresses 'the firmness of our confidence' from 'the *subjective* point of view' (B 855). As distinct from the moral belief in God, Kant also acknowledges the doctrinal belief in God, one grounded upon speculative and theoretical arguments, by mediating it with the concept of purposive unity. Doctrinal belief corresponds to the physico-theology which Kant partially rehabilitates in a new sense. But this doctrinal belief is 'somewhat lacking in stability; we often lose hold of it, owing to the speculative difficulties which we encounter' (B 855). Moral faith or belief, on the other hand, is characterised by a necessity which 'nothing can shake' (B 856). This necessity is of course a practical rather than a 'logical' one, namely a 'moral certainty' grounded in our 'moral disposition'. And this implies a pedagogical priority of morality over religious belief. If we do not first take care to make human beings at least in some measure good, 'we shall never make honest believers of them' (B 858, footnote).

The intermediate epistemic level of belief here shows itself to be subjective in a further sense. For moral disposition, as moral-practical subjectivity, is recognised in addition to the epistemic subjectivity involved in the merely subjective holding of something to be true. We thus encounter a circle here, though it is not a logical but a moral circle: where moral disposition is lacking, belief also falls away, so that God and the immortal soul are only there for the individual who

hardly needs them: for one who is morally disposed in the first place. It would appear, paradoxically, that the individual who is profoundly amoral has nothing to fear from punishing divine judgement, while the one who actually does fear it is already open to moral dispositions, but is not yet sufficiently sure and certain of them.

The first *Critique* refuses to countenance the far-reaching conclusion that God and the eternal life must forfeit their (postulated) existence where morality is lacking, since ‘in these questions no human being is free from all interest’ (B 855). For Kant the human being is a profoundly moral being, not in the sense of a brute fact, but in the sense of an ineluctably moral self-understanding since I cannot ‘disclaim’ my moral principles ‘without becoming abhorrent in my own eyes’ (B 856). Without morality, therefore, we should lose our self-respect. Or, as Kierkegaard would say, we should lose the one thing we cannot shove away in a corner, namely our own ‘existence’. Kant does not discuss the possibility of a radically pre-moral form of life, such as Kierkegaard’s ‘aesthetic’ sphere of existence or Aristotle’s idea of a life dedicated entirely to sensuous gratification (*bios apolaustikos*). For Kierkegaard, of course, such an existence is always threatened by despair (*Either/Or*: 47–135), and for Aristotle such a life is that of a slave (*Nicomachean Ethics* I: 3, 1095b 19f.).

Notes

1. Whereas the first *Critique* furnishes essential elements for a philosophy of mathematics at various places more or less throughout the entire work, Kant’s position is also presented in a relatively clearly-argued and comprehensive form in the *Prolegomena* (Sections 6–13, with the first ‘Remark’; IV: 280–8).
2. There is nothing unworthy in principle about happily satisfying our inclinations since they are neutral taken by themselves. It is only the ways and means of satisfying them that are worthy of happiness (with honesty, for example) or unworthy of happiness (through deception, for example).
3. Kant certainly recognises ‘betting’ as a sort of criterion of subjective conviction, where the amount that one is prepared to risk depends upon ‘the interests at stake’. But such betting or wagering is only relevant in the context of pragmatic belief, and for Kant, unlike Pascal, merely possesses a hermeneutically negative rather than positive significance. It merely serves as a warning against overconfidence since a bet ‘disconcerts’ (B 852) us in this connection. But if we think of ourselves as ‘staking the happiness of our whole life’ – and perhaps this remark is an echo of Pascal’s wager – then ‘the triumphant tone of our judgement is greatly abated, and we become extremely diffident’ (B 853).

In spite of the vast body of literature that has been dedicated to Kant's first *Critique*, very little indeed has specifically concerned itself with the last two chapters of the work. In these chapters, which complete what we could call his 'meta-philosophy', Kant unfolds the ultimate substantive conclusions of the 'Doctrine of Method': the notion of a truly cosmopolitan philosophy and a new conception of the history of philosophy. He thereby harvests the fruits of the 'Doctrine of Method', and, in a certain respect, of the whole of the first *Critique*. The chapter on 'The Architectonic of Pure Reason' furnishes the general outline of philosophy as a system of reason organised on the basis of principles, while the final chapter on 'The History of Pure Reason' elucidates this outline in more detail. In contrast to the standard approach which feels entitled to ignore this section of the text, we must insist that these two chapters constitute an indispensable part of the argument. For it is only here that Kant has finally gathered together all the elements which permit him to advance from the first *Critique* as a necessary propaedeutic to the system of philosophy itself. It is certainly true that his claims and observations in these pages are extremely compressed, tend to eschew discussion of various difficulties, and are sometimes even cryptic in character. But it becomes much easier to understand his argument if on occasion we also consult certain parallel points and passages in his lectures.¹

Although the titles of the last two chapters may initially sound rather heterogeneous, they both reflect Kant's persisting and fundamental interest, obvious from the two 'Prefaces' onwards, in establishing philosophy as a properly 'scientific' discipline. In accordance with the external features of such a discipline, philosophy or metaphysics must now take 'the path of a science' which 'can never be overgrown, and permits of no wandering' (B 878), a path which can be developed, for the sake of further speedy advance, into a genuine

'high-road' (B 884; cf. also earlier B 785). More important still is the specific and internally scientific character that alone permits philosophy, as a unity strictly grounded on principles, to make the otherwise dubious-sounding claim that 'there is not a single metaphysical problem which has not been solved, or for the solution of which the key at least has not been supplied' (A xiii).

22.1 The Architectonic

By virtue of the careful way in which the work has been composed, the opening pages of the first *Critique* already clearly announce that rational claim on behalf of a systematic philosophy which the chapter on the 'Architectonic' finally unfolds. And Kant's system of philosophy fulfils and exceeds all the systematic claims and demands that have previously been raised in the history of philosophy:

It was Porphyry, in the 3rd century BC., who first suggested the idea, that subsequently became so popular amongst philosophers, that all conceptual species and genera could be presented as a tree (the *arbor porphyriana*). And we still find Descartes comparing the system of philosophy and the various sciences with a trunk and its branches, an image which the authors of the great *Encyclopédie* also adopted and developed. The chapter on the 'Architectonic' also deploys the arboreal metaphor with reference to 'the common root of our faculty of knowledge' which 'divides and throws out the two stems' (B 863) of the higher rational faculty of cognition and the lower empirical faculty of cognition. But Kant specifically sharpens the systematic impulse of earlier thought. For he undertakes to present philosophy as an internally articulated, rather than externally combined, whole where all the parts are interrelated because they are derived 'from a single supreme and inner end' (B 862) as their ultimate principle. This conception emphatically refuses to treat philosophy simply as an external aggregate or arbitrary collection of claims, as a 'mere rhapsody'² (cf. B 860f.). The basic intention animating Kant's own approach has already been revealed in the 'Metaphysical Deduction' of the first *Critique*, but it can also clearly be recognised in other places, such as the *Idea for a Universal History* (VIII: 29), the 'Doctrine of Method' in the *Critique of Practical Reason* (V: 151), the discussion in the Jäsche *Logic* (Section 95), and can even be traced back to the pre-critical period (cf. *Report*, II: 305).

The demand for systematic presentation is generally directed against the tendency to Balkanise the realm of knowledge into ever smaller domains and particular specialities. Every science therefore recognises this demand, and even every partial area of a scientific discipline, as we can see within the first *Critique* itself, for example, with regard to the exhaustive table of categories and the complete system of principles that arises from it. But the chapter on the 'Architectonic' is concerned with the entire domain of pure reason. And here Kant returns to four themes already mentioned in the 'Preface' to the A edition. In the final section of the 'Architectonic' (B 877–9) Kant reinforces his original remarks concerning both the indispensability of metaphysics and the fact that this former 'Queen of the sciences' has now become an object of 'scorn' (A viii). When he refers to the task of 'preventing errors' (B 879), Kant is recalling the already mentioned duty of philosophy 'to counteract the deceptive influence that has arisen from misunderstanding' (A xiii). And finally, he insists once again that metaphysics cannot extend our knowledge. He then concludes, fifthly, with some remarks on the themes of cultivating human reason and moralising and civilising human conduct (B 878f.).

Kant borrowed the term 'architectonic' from Christian Wolff (1751², Sections 169f.) and from the mathematician and philosopher J. H. Lambert (*Anlage zur Architektonik* Sections 14–15), with whom Kant himself enjoyed friendly relations. The term generally refers to the construction of a science in accordance with an explicit plan, and in the first *Critique* it designates the edifice of reason that is constructed on the basis of principles. The intention of securing for philosophy 'the completeness and certainty of the structure in all its parts' (B 27) is intrinsic to reason itself. For human reason 'is by nature architectonic; that is to say, it regards all our knowledge as belonging to a possible system' (B 502; also B 874; cf. Tonelli 1994).

Kant begins by elucidating the concept of system from a rich variety of perspectives and proceeds to divide theoretical philosophy, by appeal to a considerable number of wholly dichotomous distinctions, into the four main disciplines that are familiar from the early modern tradition: ontology, rational psychology, rational cosmology and rational theology. One should not be entirely surprised by what might otherwise seem at this stage to be a remarkable conclusion. But Kant thereby ensures the completeness of the first *Critique* itself, which has now engaged with all four of these disciplines in turn and repudiated their claims to furnish genuine knowledge in each case. To recall the

basic argument: the 'Analytic' reduces ontology to a 'mere analytic of the pure understanding' (B 303); the 'Dialectic' exposes the three other disciplines, insofar as they raise traditional metaphysical truth claims, as nothing but delusion, and merely allows them the status of a 'limiting science' of regulative ideas. The 'Architectonic' explicates the significance of this critical-transcendental re-evaluation by contrasting two entirely different approaches to nature, a (legitimate) physical or 'immanent' one and an (illegitimate) hyper-physical or 'transcendent' one (B 873f.).

In addition to this decisive and entirely original transcendental reformulation, Kant also replaces rational psychology with a 'physiology' (B 873) that is, thematically speaking, more rational in character. On account both of the traditional distinction between the two ontological domains of thinking and extended substance, and of the duality between inner and outer sense, Kant's 'physiology' includes immanent rational physics as well as transcendental rational psychology.

Kant arrives at this articulation of the subject matter by taking contemporary chemistry and its procedure of 'isolating' material substances as a kind of model (B 870). Beginning with his fundamental distinction between the two stems of human knowledge, the rational and the empirical components of cognition, he derives the complete structure of the system of philosophy through a process of successive dichotomous division. And here he deploys the concept of 'metaphysics' in three, increasingly narrow and specific, senses (B 869f.). Metaphysics in the broad sense of the word includes 'the whole body (true as well as illusory) of philosophical knowledge arising out of pure reason [...], inclusive of criticism'. Metaphysics in the second, and intermediate, sense sets aside both the transcendental critique (or 'propaedeutic') of pure reason and the merely apparent philosophical knowledge that has been analysed in the 'Dialectic', to leave us with the 'system' of pure practical and theoretical reason. Finally, metaphysics in the 'narrow sense' (B 870) refers merely to theoretical (speculative) reason in contrast to practical reason.

Metaphysics in the intermediate sense is itself divided into the metaphysics of nature (that treats of 'what is there') and the metaphysics of morals (that treats of 'what ought to be'). It is quite true that articulation of the field does not go back to Aristotle himself, who also recognised the status of 'poietic', i.e. productive or technical, forms

of knowledge (cf. Höffe 1999²/2003). But this distinction between physical and moral objects had been a familiar one in the German Aristotelian tradition from Pufendorf onwards (*De iure naturae et gentium*, I, 1: 7).

In accordance with the original meaning of the term '*historia*', which signified the process of research, report, or description in general, Kant describes everything that appeals to 'immediate experience, narration, or also instruction', all knowledge derived from given testimony or experience, as 'historical' [*historisch*]. As Kant also argues in his essay *What is Enlightenment?*, the contrasting concept of 'rational' knowledge demands that we draw solely upon our own reason, rather than the assertions of others, if we are not simply to become a 'plaster cast of a living human being' (B 864). In his early writings too (cf. *A Report*, II: 306), Kant had demanded that what we must learn is not philosophy, but how to philosophise, that is, to 'exercise the talent of reason, in accordance with its universal principles' (B 866). In the 'Architectonic' the contrast between the rational and the historical also serves to divide the rational in the broadest sense since the latter may also derive from the reason of others, from what we have learnt from some already given philosophy. Thus 'historical' knowledge in Kant's sense includes 'in addition to history [*Geschichte*] in the strong sense, also the description of nature, the investigation of languages, positive law etc.' (*Report*, II: 306). The term '*Geschichte*', in the sense of historiography or events of the past, has a narrower meaning than '*Historie*', as the description or investigation of empirical matters in general. We can thus present Kant's division of the various forms of knowledge in tabular form (cf. Table 22.1 which is based upon the discussion at B 869f.; the abbreviation b.s., 'in the broad sense', has been added with regard to the term 'knowledge' since the 'Metaphysics of Morals' also belongs here; the upper section of the table classifies the field in terms of types of knowledge, from 'Metaphysics b.s.' onwards in terms of the philosophical sciences themselves).

If we co-ordinate the four principal parts of the 'metaphysics of nature' with the relevant parts of the first *Critique*, we may be astonished to note that the 'Aesthetic' finds no counterpart here (cf. Table 22.2). As a theory of sensible intuition, it does not indeed belong to the higher faculty of knowledge, and as a theory of the pure forms of intuition, and thus as part of a metaphysics of mathematics, one could place it before the metaphysics of nature proper. On the

Table 22.1

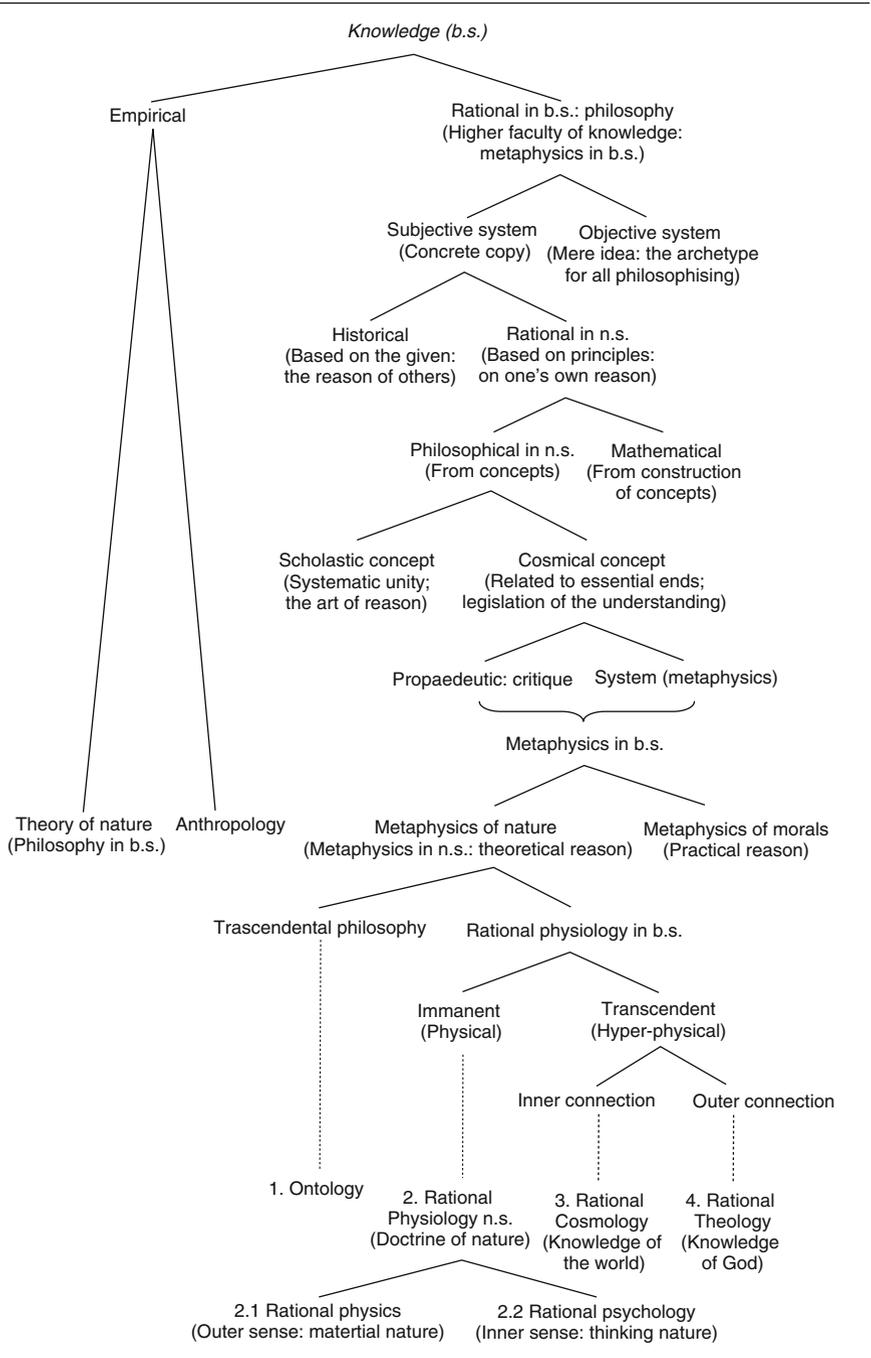
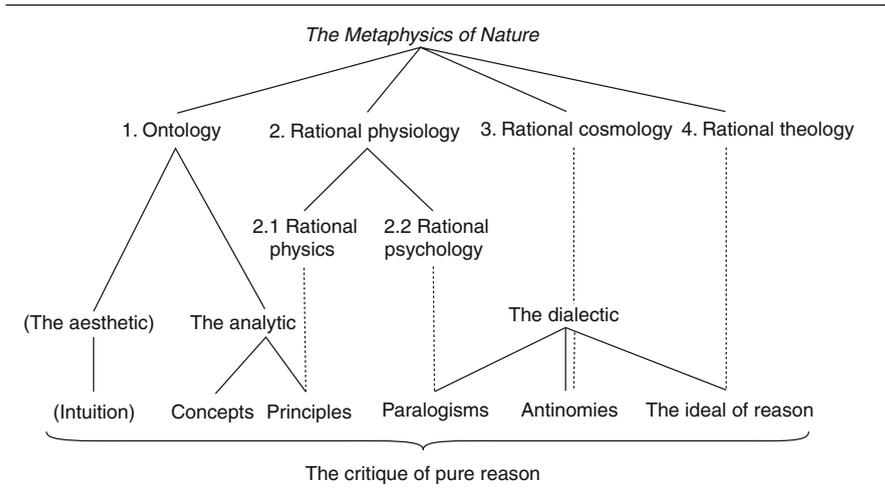


Table 22.2



other hand, since intuition is also indispensable for all knowledge of nature, it should still be recognised and included in the division of the structure of the metaphysics of nature.

The first principal part of the metaphysics of nature, ontology or transcendental philosophy, corresponds to the 'Analytic' of concepts and principles, which must of course be supplemented by the pure forms of intuition to facilitate objective judgements concerning objects of experience. And to the extent that the principles already refer to nature, as the sum of given objects, this already implies rational physiology, more specifically rational physics, in accordance with the criteria described at B 873. Rational psychology, on the other hand, corresponds to the first chapter of the 'Dialectic', that which deals with the paralogisms. The other remaining parts are also correlated with a merely negative or dialectical counterpart: rational cosmology with the 'Antinomy of Pure Reason' and rational theology with the 'Ideal of Pure Reason'.³

Kant concludes his systematic articulation of the forms of all possible knowledge by referring to two 'concerns' that are relatively easy to address. With regard to the first question as to how we can expect any a priori knowledge of objects insofar as they are given to the senses, that is, given a posteriori, he responds with his conception of minimal experience (for a discussion of the corresponding impure synthetic a priori judgements cf. Cramer 1985). For external experience, and

physics, we merely require the concept of matter, namely 'impenetrable, lifeless extension', and for inner experience, or rational psychology, the 'concept of a thinking being (in the empirical inner representation, "I think")' (B 876). With regard to the second question as to the proper place of the empirical psychology that had previously been treated as a part of metaphysics, Kant responds by indicating the possibility of establishing 'a complete anthropology' as a 'pendant to the empirical doctrine of nature' (B 877). Kant himself treats this field from a 'pragmatic perspective' now that it has been 'completely banished from the domain of metaphysics' (B 876f.).

The 'Architectonic' concludes, with reference to the three systematic parts of the 'Doctrine of Method', with a threefold thesis that unites a lofty regard for metaphysics with a renewed warning against immodest expectations with regard to the latter (B 879). Thus, in accordance with the 'Canon', it is true that metaphysics alone can complete the full cultivation of human reason; but, in accordance with the 'Discipline', it serves 'rather to prevent errors than to extend knowledge'; and Kant compares this role to a legitimate form of 'censorship' which, in accordance with the 'Architectonic', will help to restore the 'dignity and authority' of metaphysics. For metaphysics can now, as the motto drawn from Bacon suggested (B ii), secure 'the general order and harmony, and indeed the well-being of the scientific community' and prevent us 'from losing sight of the supreme end, the happiness of mankind'. In the republic of the sciences, which is essentially an epistemic republic, metaphysics thus exercises its proper rule in the service of the common good.

The creative successors of Kant, from Reinhold through Fichte to Hegel, were quite prepared to treat the first *Critique* as the propaedeutic for which they themselves would first attempt to provide the system of philosophy. But it is perfectly possible to identify the system in the Kantian sense, or 'the whole body (true as well as illusory) of philosophical knowledge' (B 869), simply with the two relevant parts of the *Critique* itself, with the 'Analytic' (true knowledge) and the 'Dialectic' (illusory knowledge). In its propaedeutic function the *Critique* already investigates all the forms of philosophical knowledge which the complete system develops in greater detail, as in the case of the pure concepts of the understanding, for example, where Kant refers us to the 'ontological manuals such as Baumgarten's' (*Prol.*, Section 39: 325, Footnote) for further discussion of 'derived concepts' or the so-called

'predicables'. Thus although the first *Critique* itself merely furnishes 'prolegomena to any future metaphysics', it nonetheless already represents what we have called Kant's own authentic 'fundamental philosophy'. It is true that this work does not present the final or definitive version of his thought, something which Kant only attempted to provide in the *Opus Postumum*, although he did not complete the task and left us with many fragmentary sketches instead (XXI: 1–158). But Kant certainly did not regard the 'system' of philosophy, as the subsequent thinkers of German idealism supposed, as something that was more fundamental than the first *Critique* itself. He merely regarded it as a more extensive development of the latter. Indeed he was never particularly interested in the various further details or additions that might be required here and was quite content to await 'the benevolent assistance of a fellow-worker' (A xxi) in this connection.

The first *Critique* begins from below, with the pure forms of intuition and the pure concepts of the understanding, moves upwards to the pure principles, then rises to the ideas, and finally to the ultimate moral end and the supreme good. If we here recall the old opposition, already familiar from Plato's parable of the cave (*Republic*, VII: 514a–8b), between an 'ascent to principles' (the approach from below) and a 'descent from principles' (the approach from above; cf. Aristotle, *Physics* I, 1 and *Nicomachean Ethics* I, 2), it is clear that the first *Critique* adopts the former rather than the latter approach. But towards the end of the work, in the 'Canon of Pure Reason', and in a certain sense also in the 'Appendix' to the 'Dialectic', the direction is actually reversed. And this also reveals a substantive, and not merely methodological, difference with respect to Fichte and Reinhold. For the latter both attempt to derive the unity of theoretical and practical reason, of knowing and willing, from a common origin, and in that sense to construct the system of philosophy 'from below'. But Kant himself grasps the unity of theoretical and practical reason from above, not by reference to a common origin, but from the perspective of what we might rather call a common roof or vantage point. Thus the first *Critique* already implies what Kant describes in the *Opus Postumum* as the 'whole with respect to physics and morality from a single principle' (XXII: 124). The internal relation between knowledge and morality on the one hand and the supreme good and the associated philosophy of hope on the other, already furnishes the allegedly missing connection (between theoretical and practical reason) that

Dieter Henrich (2001) claims to identify. We must also recognise that with respect to the regulative ideas Kant also approaches the domain of knowledge 'from above'. But in both cases Kant's 'ultimate grounding' or *Letzbegründung* proceeds teleologically, or from the perspective of ultimate and definitive ends.

22.2 Cosmical Concepts and Scholastic Concepts

Even those who are sympathetically disposed to Kant's thought have often doubted the value of his proposed 'architectonic'. For Kant himself it formed an essential part of the argument, and had nothing to do with merely external or non-epistemic matters, such as the question of elegance, but concerned the very 'rule of reason' (B 860). Rather as in Plato, philosophy is even to be regarded as 'the lawgiver of human reason' (B 867). The self-legislation of reason, with reason in its double role as both source and addressee, is emphatically revealed at that highest level of unity which is projected 'in accordance with an idea, that is, in terms of the ultimate aim of reason', rather than simply on the basis of 'contingently occasioned purposes' (B 861). Whereas the subordinate form of technical unity derives from merely external ends and is 'oriented, as it were, to success' (B 875), the higher form of architectonic unity belongs to those essential ends which render the whole system possible in the first place (B 862).

It is popularly claimed that teleological thinking is simply a relic of ancient, and specifically of Aristotelian, thought. But the fact that an undeniably modern thinker like Kant is willing to employ the concept of ends or purposes in a great variety of contexts should certainly prompt us to reconsider this question. According to the arguments developed in the third Critique, we must recognise that both aesthetic and biological judgements are oriented to concepts of 'purposiveness'. And in his essay *Idea for a Universal History* this approach is also applied to the human history considered from the perspective of the species, and in the first *Critique* even to (theoretical) reason. But the transcendental turn represents a complete reorientation of philosophy in comparison with ancient thought, and the ends or purposes in question do not lie in things themselves, but arise from the subject: 'the concept of end is always self-produced, and that of the final end is produced a priori through reason' (*Progress*, XX: 294f.).

Kant is here implicitly redeploing Aristotle's complementary concepts of possibility (*dynamis*) and actuality (*energeia*). Kant claims that science and philosophy unfold a totality which is initially given in a merely embryonic form. But if we acknowledge the Copernican turn, we must also recognise that the development of human reason does not simply proceed in a gradual and organic manner, but rather in two different phases, with the first *Critique* itself as a crucial watershed. Prior to the formulation of the *Critique*, knowledge was simply collected in a 'random' fashion (B 862) and the resulting material assembled in a merely technical manner (cf. B 863). But it is only now, through the *Critique*, that we can properly delineate the whole system in accordance with the ends of reason. *Before* the *Critique*, so 'history' shows according to Kant (cf. 22.3 below), we have witnessed revolutions in the plural, that is, various lesser transformations of one kind or another, but it is only *in* the *Critique* that we find a single decisive revolution, and only *after* the *Critique* that genuine growth is possible.

The philosopher bears the responsibility for formulating ends, although this can only be accomplished through what Kant calls the 'cosmical' concept (*Weltbegriff*) of philosophy rather than the 'scholastic' one (*Schulbegriff*) (Cf. B 866ff.; also *Logic*, IX: 24f.). Considered in accordance with its 'scholastic concept', as a merely academic discipline, as 'a system of knowledge which is sought solely in its character as a science' (B 866), philosophy may well be concerned with more than mere subtlety or elegance with regard to systematic exposition, but it still remains nothing but a rational art, or what Kant elsewhere calls 'an organon of skill' (*Metaphysics* L₂, XXVIII: 533). But considered in accordance with its 'cosmical concept', philosophy uses the totality of (theoretical) rational knowledge, including therefore mathematics, physics and logic, to 'further the essential ends of human reason' (B 867). Thus, while philosophy is certainly oriented to use, it is the (single) necessary end of morality, rather than the contingent ends of some skill or other, that it pursues. Philosophy is not described as 'cosmopolitan' on account of the universal validity which it claims with respect to different epochs or cultures. For this feature of philosophy is self-evident in Kant's eyes, and also applies to the 'scholastic concept' of philosophy. It is 'cosmopolitan' because it develops a moral-practical use, and it is this which makes the first *Critique* an essentially practical philosophy for the age of the natural sciences (cf. Chapter 1.4 above). To acknowledge the practical use of philosophy

is neither to diminish the scholastic concept of philosophy nor to corrupt it through bringing some allegedly external or non-philosophical element into consideration. But it does complete the sense in which merely theoretical reason was already seen to point beyond itself in the 'Dialectic'.

Kant thus rejects both the Aristotelian view, which he had himself been inclined to endorse in his earlier years, that knowledge is an end in itself, and the optimistic view of many Enlightenment thinkers, especially those associated with the *Encyclopédie*, that the growth of knowledge itself would improve the moral condition of humanity. For in Kant theoretical reason yields the crown to pure practical reason, though not in a way that involves the renunciation of theoretical reason. In accordance with the 'ideal of the supreme good', practical reason is connected with theoretical reason, or morality with nature, for the sake of the supreme end of 'happiness of all mankind' (B 879).

Kant also speaks of the 'ultimate end' [*Endzweck*] or 'the whole vocation of man' [*der ganzen Bestimmung des Menschen*] (B 868), although he does not really elucidate what we are to understand by this expression. If we consider the twofold significance of the word *Bestimmung*, we can exclude the meaning of mere 'determination' and 'delimitation' (*determinatio* and *definitio*) since the chapter on the 'Architectonic' is not principally concerned with the concept of man in this sense. With respect to its other possible meaning of 'end' or 'calling' (*destinatio*), it is not yet clear whether we are here principally concerned with 'role' and 'function', 'obligation' and 'regulation', or even 'fate' and 'destiny'. The passage in question speaks of the 'whole' vocation of man, a qualification that could perhaps be understood with reference to Kant's *Religion within the Limits of Reason Alone* (VI: 26f.). There Kant discusses the nature or determination of the human being in terms of three kinds of 'predispositions' [*Anlagen*]: that to 'physical or merely mechanical self-love', that to 'a self-love which is physical and yet involves comparison', and that to 'personality as a rational and at the same time responsible being'. But Kant's discussion in the 'Architectonic' gives no real support to this particular reading, and his remark that from the perspective of philosophy the vocation of man consists in morality (B 879) also arouses the suspicion that his 'whole' vocation could only lie in morality and morality alone. On the other hand, at the end of the 'Architectonic' Kant claims that the principal

end of reason lies in ‘the happiness of all mankind’ (B 879), and not therefore in morality, which itself consists merely in our worthiness to be happy.

But in accordance with the ‘general order and harmony’ to which Kant here refers (*ibid.*), the universal happiness in question is the happiness of all rational beings. This is not to be understood as a collective benefit or well-being in the utilitarian sense, but signifies the ‘happiness of all mankind’ which the ‘ideal of the supreme good’ has defined as an effect of a freedom determined by moral laws. This certainly implies a collective good, but it is not one which is directly sought as the most comprehensive and lasting possible satisfaction of all our inclinations. Rather, if everyone obeys properly moral commands and prohibitions, this general obedience will also produce an effect of happiness, namely a ‘system in which happiness is bound up with and proportioned to morality’ (B 837). But this is itself the supreme good which connects theoretical and practical reason with one another.

The ‘whole vocation’ must therefore be understood in relation to the three questions posed in the ‘Canon of Pure Reason’ (B 832–3). Since every human being is called upon to pursue knowledge, and also to respond to moral obligation, and, not least, to entertain hope for the future, the whole vocation of man lies in the connection between these three dimensions. Thus the concluding passage of the ‘Architectonic’ should be read in the following way. It is quite true that theoretical metaphysics serves rather to prevent errors than to extend our knowledge. And, in particular, it prevents the error of forfeiting or denying the three ideas of the freedom of the will, of God, and of the immortality of the soul, ideas without which the supreme good cannot properly be conceived. But the prevention of such errors itself secures that ‘general order and harmony, indeed the well-being’ of what we may describe as the epistemic commonwealth. At the same time it furthers the supreme good as the principal end of reason, albeit not directly, but simply by preventing us from losing sight of it (B 879).

22.3 A Philosophical Archaeology

It is no accident if a work that is as carefully composed as the first *Critique* should conclude with a consideration of ‘history’. Here Kant looks back over the preceding course of the argument, not in the form

of a retrospective summary, but from a new perspective on the whole. Casting 'a cursory glance over all previous contributions' in the history of philosophy with regard to 'the nature of pure reason' (B 880), Kant rounds off his conception of the purposive character that essentially belongs to reason.

Kant had been delivering lectures on the history of philosophy for many years, since 1769 in fact, lectures based to some extent upon the *Histoire* by Formey, General Secretary of the Berlin Academy. He was also familiar, at least in part, with the multi-volume history of philosophy by Johann Anton Brucker (cf. his highly critical reference to the latter at B 372), and probably with the comprehensive history by Boureau-Deslandes as well. Both in his lectures on *Logic* (IX: 27–33) and in his lectures on metaphysics Kant liked to provide a brief outline of the history of philosophy (cf. *Metaphysik Volckmann* and *Metaphysik L₂*, XXVIII: 367–80 and 535–40 respectively). But the first *Critique* does not focus upon the historical development of philosophy, but rather, in accordance with the subordinate status ascribed to merely 'historical', i.e. empirical, knowledge, concentrates entirely upon the 'scientific' character of philosophy. This latter is grounded on an 'idea' which has nonetheless been articulated in so many different ways that the history of philosophy cannot be regarded as a homogeneous discipline at all. For in spite of the shared name to which they all lay claim, we are presented here with an array of mutually incompatible philosophies, with sensualist intellectualist ones, with empirical and noological ones, with dogmatic and sceptical ones, and finally with a critical philosophy or transcendental metaphysics. We should speak more precisely of various 'subordinate ideas' within a single higher idea if this shared title of 'philosophy' is to be justified.

Confronted by this variety, one might be tempted to regard all these philosophies as equal in value, and thus to embrace a pluralism of equally acceptable 'world-views', or one might attempt, as Aristotle already did (*Metaphysics* I, 3–10), to identify a progressive development that culminates in one's own philosophy. But Kant delivers the harsh diagnosis that all efforts to satisfy the demands of human reason have been 'hitherto in vain' (B 884). The past appears to him as a history of constantly repeated failures. As his own image of buildings 'in ruins' (B 880) suggests, he beholds nothing but a scene of devastation strewn with the rubble of metaphysics. This is also why he does not proceed chronologically here. Instead of beginning with the earliest period

of western thought, with the pre-Socratics, and moving on to Plato, Aristotle and Epicurus, and then to Locke, Leibniz, Wolff, and Hume, Kant's argument is presented from an essentially systematic perspective (and with no reference whatsoever to medieval thought). Since he is interested not in a history of 'opinions', but only in a history of pure reason itself, he ignores the contingent byways of the story of philosophy, although he certainly does not thereby exclude history altogether (as argued by Kleingeld 1995: 1). What he does provide is a sketch of a fundamentally new kind of historiography, of an expressly philosophical treatment of the history of philosophy, an approach which he further develops in his *Notes on the Progress of Metaphysics* (XX: 333–52).

It is interesting to observe in this connection that Kant also speaks of a philosophical 'archaeology' (XX: 341), an expression which may well call to mind Foucault's *Archéologie du savoir*, a work which also differs significantly from historiography in the usual empirical sense. But Foucault not only addresses a different thematic object, namely the specific historical emergence of certain fundamental and internally unified discourses, he also fails to draw as strong a methodological contrast between the conceptual and the empirical domain as Kant does. For Kant is interested in an emphatically rational a priori history which derives its data from the nature of human reason itself. The first *Critique* thus speaks explicitly of a 'transcendental point of view' (B 880). Since this approach also involves a certain parallel between the historical and the systematic level of development, as well as a series of oppositions that may suggest the way in which the Hegelian dialectic proceeds by way of thesis and antithesis (although there is no 'method' of determinate negation at work here), it is worth examining Kant's perspective in its own right and not merely in relation to that of Hegel.

In every important respect Kant's view of history here is consistent with that which he defends elsewhere. As in the *Idea for a Universal History*, the essay on *Perpetual Peace*, and the *Anthropology*, so too in the first *Critique* Kant outlines a teleological development, unfolded as a (highly condensed) natural history of reason, which advances in and through a state of philosophical war towards a state of eternal peace with respect to metaphysics or what we have called fundamental philosophy. Paradoxically, however, this state of peace is not brought about through any genuine interest in peace itself, but through the same antagonism which Kant describes in these other writings as the

'unsocial sociability' of human nature, which the first *Critique* itself regards as internal to reason itself. And we must also recognise the significant personal contribution involved in accomplishing the great Copernican turn itself in relation to all those other earlier and lesser revolutions of human thought. Behind this of course there lies a painful process of learning on Kant's part. For the disappointment with the high hopes originally placed in metaphysics (B 877) precisely reflects the story of Kant's own intellectual development.

Compared with the conception of the history of philosophy which is expressed in the two 'Prefaces', and underlies the programme of the *Critique* and the execution of the general argument, the final chapter of the book introduces two further modifications, or at least clarifications. Kant speaks once again of 'the stage' (B 881) on which previous philosophical conflicts have been played out and outlines this process in terms of three issues.

Considered in the light of the 'object', the 'origin', and the 'method' of pure rational knowledge, the devastated battleground of previous metaphysics takes on a threefold appearance. And it is here that Kant's twofold modification or clarification comes into play. On the one hand, Kant finally attaches some real historical names to the conflict between sceptics and dogmatists to which he had alluded in the A 'Preface' (A ix), and draws special attention to the rather complex threefold conflict that is involved here. He does not follow the actual historical chronology, but simply delineates a fundamental conflict, or duel, between two different approaches in which neither can ultimately claim the victory. For, in contrast to Hegel's internal method of determinate negation, the conflict is resolved from without by Kant's own critical method. On the other hand, according to the B 'Preface', there is only *one* revolution in every proper science (B xiff.), while in the chapter on the 'History of Pure Reason' Kant recognises that there are so many philosophical revolutions that only the 'most noteworthy' and 'most significant' of them (B 881) can be discussed. In this context 'revolution' is to be understood as the overcoming of a previous mode of thinking, an overcoming which, in contrast to social and political revolutions, does not lead to the simple eradication of the relevant opponents, but still leaves them room to survive in one form or another.

(1) With respect to the object of *all* knowledge through reason, we are confronted by the alternative of sensibility or the understanding,

by the opposition between sensualist philosophers, with Epicurus as the 'outstanding philosopher of sensibility'⁴, and intellectualist philosophers, with Plato as their exemplary representative (B 881). Both traditions of thought structurally commit the same mistake for each recognises only one of the two sources of real knowledge.

(2) With respect to the origin, not of all knowledge, but only of knowledge through *pure* reason, we are faced with the alternative of appealing to experience or to reason, by the conflict between empiricists like Aristotle and Locke and noologists like Plato and Leibniz (the term 'noologist' being derived from *nous*, the Greek expression for 'reason'). Kant omits any mention of Epicurus, Descartes or Hume in this connection. Since the 'Architectonic' opposes the rational to the empirical, and identifies the former with pure reason (B 863), the 'noologists' can also be described as 'rationalists'. But the former term emphasises, in contrast to the latter, that we are not concerned here with the higher faculty of knowledge as a whole, with the understanding taken together with reason, but merely with its highest part, with reason taken independently of the understanding. This may be why the term 'rationalism', now standardly deployed in discussions of Kant, does not actually occur at this point, or indeed anywhere else in the first *Critique*. It is only encountered, and then rarely, in the second and third *Critiques*.

If we place the first two conflicts which Kant discusses in actual chronological order, we can trace a first revolution back to Plato and his discovery of what Kant calls the pure concepts of the understanding (cf. B 370ff.). On the other hand, according to a second revolution, represented by Epicurus, such concepts enjoy a merely 'logical' rather than 'mystical' reality (B 882). With respect to the conflict concerning the origin of rational knowledge, Aristotle takes his place between Plato and Epicurus since he introduces a revolution which, while partially anticipating Epicurus, is not, in Kant's view, nearly as consistently carried through. We could describe this as revolution 2A in distinction from Epicurus's revolution 2B. The question whether Aristotle really was an empiricist who nonetheless also occupied himself with concepts of the understanding (B 370) is one that we can leave aside in the present context.

If we do not regard Locke as a thinker who merely falls back below the level of Epicurus, or even Aristotle, we would also have to consider his own 'predecessors', especially Descartes, and interpret Locke as a

further variant of the second revolution, 2C, which Leibniz, at some considerable distance from Plato's 'mystical system' (B 882), finally completes with revolution 2D. In his lectures on *Logic* Kant includes Locke and Leibniz amongst 'the greatest and most valuable reformers of philosophy in our times' (IX: 32). If we also take into account the twofold prehistory (or 'infancy') of philosophy, we can identify six phases in all, of which the first two predate the series of intellectual revolutions precipitated by Plato (B 880f.):

(a) In the still archaic and 'barbarous state of the peoples' which antedated even the pre-Socratics and was not confined to the ancient Greeks, in this 'infancy of philosophy', human beings already concerned themselves with 'the knowledge of God' and 'the specific nature of another world'. (b) With the first stirrings of an emerging enlightenment, they interested themselves not only in theology, but also in morality, with a view to 'being happy in another world at least'. It is true that the real incentive for pursuing metaphysical questions remains theological, but without a purified interpretation of moral concepts we should simply be left, as Kant says elsewhere, either with 'crude and incoherent concepts of the Deity' or with 'an astonishing indifference' with regard to such matters (B 845). (c) Within (speculative) metaphysics and its fundamental internal conflict between empiricism and noologism we find Aristotle and Epicurus contending with Plato in the ancient world. (d) In the modern world we find a comparable conflict between Locke and Leibniz, although Locke is far less consistent than Epicurus, and Leibniz also shows significant disagreement with Plato's 'mystical' system. (e) The noologism of Leibniz is subsequently developed into the dogmatism of Wolff and Locke's empiricism gives rise to Hume's scepticism. (f) Kant's own critical method marks the conclusion and culmination of the entire story.

According to Kant's remarks at B 789, on the other hand, the process can also be described simply in terms of three phases. The first dogmatic phase (stretching from Plato to Wolff?) is presented as the 'infancy' of philosophy. The middle sceptical phase represents the first youth of pure reason. And, in the last phase, the first *Critique* corresponds to a 'mature and manly judgement', or as we might more neutrally put it, to the fully developed power of judgement.

(3) The third internal conflict, or duel, as we have described it, concerns the rigorous concept of *method*, understood as a 'procedure in accordance with principles' (B 883). At the first and elementary

level of his analysis Kant refers not to specific historical examples, but merely to systematic philosophical positions, to the general conflict between the naturalistic and the scientific method. When he speaks of a 'naturalistic' approach here Kant is not referring to the objective repudiation of a second supernatural world beyond this one, or to the epistemological restriction of knowledge to nothing but sensible experience. He is referring to 'misology' (B 883) raised to the level of principle, to a hostility to reason that rejects 'science' in the strict sense of the word (cf. *Logic*, IX: 26). In the 'Foreword' to the *Prolegomena*, Kant pointed out that the thinkers who had opposed Hume, such as Reid, Oswald, Beattie and lastly Priestley, had all simply appealed to our common human understanding (IV: 258f.). It is these Scottish philosophers of 'common sense' who represent what Kant calls the 'naturalistic method'.

At the second level of his analysis, regarding the conflict between dogmatism and scepticism to which he alluded in the A 'Preface' (A ix), Kant introduces a third modification, or what is perhaps merely a further clarification. Here it is not noologism or rationalism as a whole which is characterised as 'dogmatic', and it is not Leibniz who is the exemplary figure, but rather the 'celebrated' Wolff, as Kant puts it without any hint of irony (B 884). The charge which Kant levels at dogmatism, as we read in the B 'Preface', is the 'preconception' that we can 'make headway in metaphysics without a previous criticism of pure reason' (B xxx).

It may seem remarkable that in his final chapter Kant does not mention that empiricism too can become 'dogmatic' when it 'confidently denies whatever lies beyond the sphere of its sensible intuitive knowledge'. And in the case of empiricism this 'lack of modesty' is 'all the more reprehensible owing to the irreparable injury which is thereby caused to the practical interests of reason' (B 499). The reason Kant does not mention this point here is that the final chapter is essentially concerned with merely speculative reason, and the issue of morality, apart from the initial reference to the 'infancy' of philosophy, is here out of the picture. And Kant's discussion of the third conflict, that surrounding the problem of method, only refers to philosophers of the modern age, and Locke, as the representative of empiricism here, does not endorse such confident denials since he asserts that 'we can prove the existence of God and the immortality of the soul with the same conclusiveness as any mathematical proposition' (B 882f.).

Kant describes the other form of scientific method as 'sceptical' and cites Hume as its exemplary representative (in his lectures on *Logic* he also referred to the sceptical thinkers of antiquity: IX: 30f.). There might appear to be a difficulty here since in the chapter on the 'Antinomies', in the section on the 'Antithetic of Pure Reason', Kant identified the 'sceptical method' with his own method of 'investigating whether the object of controversy is not perhaps merely a deceptive appearance' (B 451). But to avoid implicating Kant in a simple contradiction here we must simply remember not to conflate the sceptical procedure discussed in the 'History of Pure Reason' with the 'sceptical method' of the 'Antithetic' and recognise that it corresponds rather with what he there calls 'scepticism' itself: a 'principle of technical and scientific ignorance which undermines the foundations of all knowledge' (ibid.). In order to overcome both dogmatism and scepticism, therefore, we must adopt the 'critical path' as the only method that now lies open to us (B 884). From the perspective of method, the history of philosophy thus consists of three phases: the dogmatism which is an initially unavoidable self-misunderstanding of reason, the scepticism which is a resigned self-renunciation of reason, and the critical philosophy which overcomes both positions.

The 'History of Pure Reason' looks back over the deeply troubling confusions of past philosophers, confusions which Kant also tacitly recognises as his own. At the end, and authentic conclusion, of the entire *Critique*, however, Kant strikes an optimistic note: if the reader 'cares to lend his aid', it may be possible 'to achieve before the end of the present century', that is, in less than two decades, 'what many centuries have not been able to accomplish'. The first *Critique* has created a 'path' which those who follow can now make into a 'high-way' that will 'secure for human reason complete satisfaction in regard to that with which it has all along so eagerly occupied itself, though hitherto in vain' (B 884). This rational desire will not properly or readily be satisfied simply by curiosity concerning the ongoing investigation of the special sciences, but only by answering the question whether there is objective knowledge and, if so, whether it includes the ideas of reason.

Notes

1. This chapter develops an earlier discussion of these questions (Höffe 1998). For Kant's architectonic and his concept of system, cf. Fulda and Stolzenberg (2001). For an interesting attempt to apply cybernetics to Kant's architectonic cf. Bettoni (1991), although Kant's concept of system is misinterpreted here.
2. Kant is referring to the snatches and excerpts of song performed by minstrels or balladeers.
3. The 'Doctrine of Method', with its chapters on the 'Canon' and the 'Architectonic', already touches upon the domain of a genuine metaphysics of morals, or, more precisely, upon the preparatory ground for such a metaphysics that is presented in the *Critique of Practical Reason*.
4. The fact that Kant, from the time of his own earliest reflections on the philosophy of nature, regarded Epicurus so highly may reflect the influence of Pierre Bayle's famous article on the latter in his *Dictionnaire historique et critique* (1696). In a lengthy footnote at B 499, Kant even claims that in some respects Epicurus revealed 'more genuine philosophical spirit than any other of the philosophers of antiquity'.

CHAPTER 23

THE KANTIAN METAPHORS

The ‘dry, grey packing-paper style’ of the first *Critique* has been an object of mockery since the time of Heinrich Heine (1997: 96). And it is quite true that the reader can easily be alienated by Kant’s frequently elaborate and rather involved sentence construction. But when Kant wishes to draw the reader’s attention to some particularly important point or conclusion, he will often resort to short emphatic sentences instead. In any case, it is clear that his style is by no means long-winded if we understand this to mean prolixity or even garrulousness. Schooled as he was in the classical Latin authors, Kant is also capable of writing an excellent Ciceronian German over long stretches of his work. He concedes that the *Critique* is composed in a ‘dry, purely scholastic fashion’, but he has good reasons for adopting this style: in his original draft he had included many ‘examples and illustrations’, but as the full magnitude of his task and the abundance of themes to be dealt with became more and more obvious as he proceeded, he found it ‘inadvisable to enlarge the text yet further through examples and illustrations’ (A xviii). And if he had indeed attempted a less concentrated exposition, the already voluminous work would be inflated beyond all reasonable measure.

Nonetheless, Kant certainly does not develop his argument in a purely bloodless and abstract manner. It is quite true that he renounces the sort of florid style that he could have adopted if he had begun the work with the ‘Antinomies’. As he puts it in a letter: ‘We must first do justice to the *Schools*, and then we may perhaps see how to please the *world*’ (*Letters*: No. 166/97). Although the substantive analyses of the work are naturally conducted in an austere style of rigorous argument, we could point out that the claims of ‘sensibility’ are rehabilitated not merely in the theoretical and epistemological context of the ‘Aesthetic’, but also in the rhetorical-didactic context of striking images, comparisons and metaphors. These tend to cluster at

strategically crucial points of the text, such as the two 'Prefaces' and the 'Introduction', the transition from the 'Analytic' to the 'Dialectic' (B 294f.), the retrospective reflections of the 'Doctrine of Method', and they lend a sensuous colouring to the rigorous exposition of the central argument (as already pointed out in Eucken 1906² and more recently in Tarbet 1968). With respect to a difficult doctrine like that concerning the regulative employment of the ideas Kant explicitly furnishes a 'sensuous illustration' of the argument (B 686). And there are many other passages where Kant introduces 'images and comparisons of genuinely poetic power' (Vorländer 1992³, II: 107) which are all the more convincing insofar as they do not replace what Hegel calls 'the labour of the concept', but rather arise naturally from this labour and encourage further thought on our part. And Kant is well aware that 'sensible images' also always associated with even the most abstract of concepts: 'For how could we procure sense and meaning even to our concepts if some intuition or other [...] were not provided for them?' (*What Does it Mean to Orient Oneself in Thinking?*, VIII: 133). But in his lectures on *Metaphysics* Kant also insists: 'If one cannot distinguish concepts from images, one will never be able to think in a pure manner free of errors' (XXVIII: 369).

Hans Blumenberg (1971: 201) has celebrated 'the power of metaphors which cling to claims which are difficult to ground in argumentative or indeed in any other terms', but the first *Critique* does not regard the analysis of this phenomenon as its proper concern. It treats metaphors neither as remnants, as 'rudimentary relics from the path that leads from *mythos* to *logos*', nor as persisting elements, as "transferred senses" which cannot simply be reduced to their literal meaning or translated into purely conceptual terms' (Blumenberg 1999²: 10). Again, Kant has good reasons for his own approach. According to Blumenberg (*ibid.*: 25), such metaphors represent 'the totality of reality which can never be experienced or viewed as a whole'. Kant recognises the problem in question, but resolves it in a quite different, predominantly conceptual or argumentative, manner by recourse to the regulative ideas. Kant would emphatically reject the post-modern view (cf. Welsch 1994²: 41 or Kamper, 1994²: 169) that the conceptual world must yield to the figurative and metaphorical one. For Kant, images and metaphors cannot replace concepts or arguments, but they can certainly lend them a more vivid and intuitive form. They

are not a surrogate for our concepts, but a rhetorical complement to them, and can thus be called illustrative metaphors.

When Kant says, for example, that both parties to some philosophical dispute merely 'beat the air and wrestle with their own shadows', that they grapple 'like the heroes in Valhalla, in order to disport themselves anew in bloodless contests' (B 784), we catch a glimpse of that ironic humour that is occasionally even seasoned with scorn. Thus with regard to a theoretical demonstration of the future life, Kant says: 'It so stands upon the point of a hair, that even the schools preserve it from falling only so long as they keep it unceasingly spinning round like a top' (B 424). Kant's polemical gifts are also in evidence when he turns upon 'ancient worm-eaten dogmatism' (A x), speaks of the 'ludicrous spectacle of one man milking a he-goat and the other holding a sieve underneath' (B 83), or repudiates the alternative of either 'shallow scoffing at ever-repeated failures or pious sighs over the limits of our reason' (A 395). It is clear, at any rate, that over and above the epistemological role of sensible intuition Kant also fully recognises the role of vivid presentation and illustration for the communication of his general argument. Even Goethe conceded that anyone 'who reads a single page of Kant cannot fail to feel as though he were entering a brightly-illuminated room' (cited after Schopenhauer, *Werke* III: 159).

One should not go as far as Aristotle and regard the invention of metaphors as a mark of genius (*Poetics*, 1459a6), although it is certainly a sign of outstanding competence with regard to language and subject matter alike. The abundance of Kant's metaphors, taken in the broad sense of images, symbols, similes, and figurative expressions, reveals his highly developed sense of style and feeling for language in general, and testifies both to the broad range of experience which he addresses and to his excellent knowledge of many specific fields and disciplines, for, after all, there is hardly a single area of life which his thought ignores. Sometimes Kant's metaphors draw upon ancient mythology, as when he compares metaphysics with the helpless and rejected Queen Hecuba (A viii), or alludes to the fatal hubris of Icarus in his own 'criticism of our reason when it entrusts itself to its own wings' (B 878; and cf. B 9). Other metaphors derive from the world of the craftsman, such as the personal monogram of the master that is designed to prevent mere imitations (B 181; cf. also B 598 and 861). Other images again are taken from the broadly pedagogical

realm, such as Kant's references to the child's 'go-cart' (B 174), the 'clue' or 'guiding-thread' (B 91; 475; 833, and many other places), the 'credulity of youth' (B 783), the 'infancy of philosophy' (B 789; 880), and also his allusions to 'mock combats' (B xiv), 'pretended attacks' (B 771), and the matter of 'discipline' (B 737f.).

A large number of Kant's metaphors are also drawn from the merchant world. And Kant lived, of course, in a thriving commercial town where he enjoyed cordial relations with merchants such as Green and Motherby. Thus we read of selling off wares 'at the minimum price' (A xv), of the 'inventory of all our possessions through pure reason' (A xx), of the 'monopoly of the schools' (B xxxii), of 'borrowing' and 'drawing' from experience (B 2; 20; 166; 267; 269), of the 'credit' of principles which must be 'secured' in advance (B 7), of the 'orderly management of the possessions of our understanding' (B 362), of the 'complete estimate of our intellectual powers' (B 796; cf. B 89), and of the 'economic' principle of parsimony (B 681). And last but not least, Kant's famous remarks in his critique of the ontological argument also allude to the world of commerce: 'A hundred real thalers do not contain the least coin more a hundred possible thalers' (B 627).

When Kant compares metaphysics as to 'a beloved one with whom we have quarrelled', but to whom we nonetheless always 'return' (B 878), he bestows a new meaning upon the first component of the word *philosophy*, one which emphasises both the conflicts and disputes involved and the possibility of overcoming them. Surprisingly few of his metaphors derive from the medical sphere in the broad sense, such as his reference to the 'euthanasia of pure reason' (B 434) or to the drinking of 'poison' (B 783). He uses three examples to clarify how every negation implies the opposed affirmation: 'Those born blind cannot have the least notion of darkness, since they have none of light. The savage knows nothing of poverty, since he has no acquaintance with wealth. The ignorant have no concept of their ignorance, because they have none of knowledge' (B 603). The previous movements of metaphysics also belong to the world of the blind, one of 'random groping' (B vii) and 'wandering about' (B 862) where our claims are merely 'blindly ventured' (B 791).

The great majority of Kant's metaphors, and the most substantively significant ones, are drawn from other very specific domains which often allow him to pursue the relevant analogy into ramifying detail: from chemistry and astronomy (cf. Section 23.1), from biology (23.2),

from seafaring and navigation (23.3), from architecture and land surveying (23.4), from the realm of flight (23.5) and, above all, from that realm of law and justice.

23.1 Separating the Materials

It would be quite superficial to regard Kant's metaphors simply as expression of momentary whim. For in fact they are not only strategically well placed, but are the fruit of much careful reflection. Even when his images, like those invoking the ocean or architectural construction, point back to his own pre-critical period or to the thought of earlier philosophers, they are refashioned in a new and more precise way and thus thematically reapplied as well. In accordance with the transcendental turn towards the 'subject', Kant's images are drawn pre-eminently from the domain of human action and conduct, rather than from that of contemplation or nature in general. And since all these images and metaphors relate expressly to the method, programme, and central doctrines of the *Critique*, they may assist us here to review the fundamental claims of the entire work.

In order to clarify the critical epistemological task of discriminating different types of knowledge with regard to their respective sources, and of preventing any confusion between them, Kant compares this task with 'the chemist's procedure of separating materials' (B 870). This remark expresses an implicit criticism of Leibniz. For in his own harmonious conception of the world Leibniz only recognises a single unified continuum with respect both to substances, from the phenomenal and the intellectual point of view, and to our faculties of cognition (e.g. *Monadology*, 18–30; *Principes de la nature et de la grâce*, 3). But Kant by contrast stubbornly insists upon specific and distinctive differences. Thus he draws a sharp distinction between appearances and things in themselves, sensibility and the understanding, questions of fact and questions of justification, and, not least, mechanism and organism, just as he insists, in the *Metaphysical Foundations of Natural Science*, that 'the limits of the different sciences should not be blurred with one another, but assume their properly delimited fields' (IV: 473). Elsewhere Kant also underlines this insistence on drawing careful and precise distinctions with the striking image: 'Chisels and the hammers may suffice to work a piece of wood, but for etching we require an etcher's needle' (*Prolegomena*, IV: 259). And Kant's frequently deployed image

of the 'touchstone'¹ of truth alludes to the chemical dimension of the world of mining and mineralogy (B 84; 90; 493; 852, amongst other places).

With his most important astronomical image, that of the Copernican turn itself, we can see the 'Protestant' Kant rejecting the 'Catholic' Leibniz. For in Leibniz the image of the changed standpoint serves to describe the new perspective, namely that of God himself, from which everything reveals itself as ultimately harmonious (e.g. *Monadology*, 87f.). Kant uses the same image, by contrast, to give vivid expression to his revolutionary new insights concerning our own, specifically human, form of knowledge. Elsewhere he also deploys a fourfold analogy to suggest the radical implications of this new approach: the *Critique* stands in the same relation to traditional metaphysics as (scientific) chemistry does to (unscientific) alchemy, or as (scientific) astronomy does to the astrology of the fortune teller (*Prolegomena*, IV: 366).

And Kant also offers us a third comparison to express the radical change of perspective required by his new approach. The first *Critique* fulfils the famous Socratic injunction (cf. B xxxi) to acknowledge the 'consciousness of my own ignorance' (B 786) since it regards the 'Dialectic' precisely as the science of our necessary and unavoidable ignorance. Kant illustrates the possibility of this science by alluding to the pre-Copernican revolution in astronomy which established that the earth was not flat but spheroid: as long as I represent the earth immediately 'as it appears to my senses' (B 787) as a flat surface like a plate, I am unable to calculate its true surface area or define its limits. But once I know that it is a sphere, I can determine this area precisely, and with it 'the limits of all possible geography', even though 'I am ignorant of the objects which this surface may contain'. In a similar way the transcendental philosopher is able to grasp the limits of possible experience and, especially, to show how 'all the questions raised by our pure reason touch on what may be outside this horizon, or, it may be, on its boundary line' (B 788).

23.2 Inner Structure

A remarkably large number of Kant's metaphors are drawn from the biology of his time, and the controversies of which he always followed with the greatest interest and attention. At the start of the *Critique*

he emphasises that pure speculative reason possesses a 'true articulated structure wherein everything is an organ' and that therefore 'any attempt to change even the smallest part at once gives rise to contradictions' (B xxxviii.f.). In accordance with Kant's concept of reason, a proper 'whole' is always 'articulated' rather than simply 'accumulated'. Such a whole can certainly grow from within, rather than from without, and resembles 'an animal body, the growth of which is not by addition of a new member' (B 861).

In contrast with the process of *generatio equivoca* or 'primordial generation', a genuine system does not arise 'from the mere confluence of assembled concepts', but finds 'its schema, as the original germ, in the sheer self-development of reason' (B 863). And in the chapter on the 'Transcendental Deduction' Kant compares the three alternative hypotheses concerning the origin of the categories with the three hypotheses concerning the origin of life which were current in the biology of the time. Thus to ascribe an empirical origin to the categories amounts to 'a sort of *generatio aequivoca*', while the correct hypothesis, which regards the pure concepts as a priori principles, corresponds to an '*epigenesis* of pure reason' (i.e. a generation of organisms from inorganic material – an analogy here applied to the generation of experience from pre-empirical concepts). The other remaining hypothesis, which allegedly represents a 'middle course' by treating the categories as 'subjective dispositions of thought', is also rejected by Kant and described as 'a kind of *preformation-system* of pure reason' (B 167).

Kant also invokes the realm of biology when he describes metaphysics as 'a science which is indispensable to pure reason – a science whose every branch may be cut away but whose root cannot be destroyed' (B 24). The biological domain also furnishes Kant's image of the two 'stems' into which 'the common root of our faculty of knowledge divides' (B 863), and is similarly evoked when he tells us that the task of the 'Analytic' is to search out the pure a priori concepts in the understanding as 'their birthplace' and to trace them back 'to their first seeds and dispositions in the human understanding' (B 91). Finally, he also draws on biological metaphors when he speaks of the 'spontaneous generation of our understanding' and 'impregnation by experience' (B 793), of identifying the 'seed' from which the temptations of human reason arise and allowing it 'the freedom, even the nourishment, to send out shoots so that it may discover itself to our eyes, and then be extirpated at the root' (B 805f.).

23.3 The Deceptive Appearance of Further Shores

In the famous engraving which adorned the title page of Bacon's *Novum Organum* the two Pillars of Hercules symbolised the narrow limitations traditionally imposed upon the pursuit of knowledge, whereas the great ocean beyond represented the infinite realm of further enquiry. Kant had already adopted this image in his *Physical Monadology*, although, in contrast to Bacon, he here gave it a specifically philosophical significance: the high sea to which we must entrust ourselves no longer represents the task of the natural sciences, that of searching out new phenomena and the laws that govern them, but rather the task of philosophy, that of investigating the ground and origin of laws (I: 475). Some years later, in his essay *The Only Possible Demonstration of the Existence of God*, the ocean reappears as a dark expanse 'without shores or lighthouses', albeit one that can in principle be navigated. But we must proceed like a cautious seafarer in 'unfrequented waters' and as soon as we glimpse land, we must take our bearings to check whether 'the sea currents may not, unknown to us, have confused our course' (II: 66).

In the first *Critique* Kant adopts a different approach from that of Bacon, and of his own earlier work. In contrast to Bacon, he emphasises, just as he had in *The Only Possible Basis for a Demonstration of the Existence of God*, that the ocean presents dangers which we are willing to face, not for the sake of mere adventure, but for the prospect of discovering new lands, a previously unknown island perhaps, or even a new continent. But now it is experience which corresponds to the land that we already know, whereas the unknown corresponds to the domain of reason that lies beyond experience. On account of this changed perspective, which is concerned with the opportunities, or perhaps the limits, of pure reason rather than with the advances of the individual sciences, the image of 'the ocean' assumes a radically new significance in comparison with *The Only Possible Basis*. Now it is 'the native home of illusion, where many a fog bank and many a swiftly melting iceberg give the deceptive appearance of further shores, deluding the adventurous seafarer ever anew with empty hopes' (B 295). The ocean no longer signifies the great opportunity that faces reason, as it had in Bacon, but rather the 'illusion' that is unmasked in the 'Dialectic'. The 'Analytic', on the other hand, represents the firm 'land of the pure understanding', or 'the land of truth' which is, however, nothing

but an 'island' (B 294f.; in the *Dreams of A Spirit Seer*, II: 368, Kant had already described metaphysics as 'a small land'). And thus the Pillars of Hercules would no longer represent a narrow passage through which we may pass to reach the domain of free and unlimited enquiry, but rather the limits 'which nature herself has erected in order that the voyage of our reason may be extended no further than the continuous coastline of experience itself reaches'. But if, with traditional metaphysics, we venture out upon the 'shoreless ocean', we can only fall victim to its 'ever-deceptive prospects' and thus be compelled in the end 'to abandon as hopeless all this vexatious and tedious endeavour' (A 395f.). For there is no new land to be discovered in this ocean or beyond it.

We may note that Kant also draws on nautical imagery in the 'Second Analogy' when he illustrates the necessary objective sequence of perceptions with the example of the ship which is sailing downstream (B 237). And finally, he employs a particularly vivid image of a similar kind when he refers to certain philosophical proofs which 'like streams which break their banks, run wildly at random, whithersoever the current of hidden association may chance to lead them' (B 811).

23.4 Buildings in Ruins

To navigate the seas we require maps, and for these we require surveys and measurements. And the land which is also to be measured, in contrast to the ocean, is characterised by firmness. The realm of navigation thus already points us towards the metaphors of building in the broad sense. Images of construction play a significant role in four particular passages: in the 'Introduction', in Book I of the 'Dialectic', in the opening section of the 'Doctrine of Method' (B 735), and, as the title suggests, in the chapter on the 'Architectonic of Pure Reason'. In a pre-critical work such as *The Only Possible Basis*, Kant is still optimistic with regard to the possibility of metaphysics and explicitly opposes those of its critics 'who are only interested in turning every edifice that has been attempted into a pile of rubble' (II: 67). In the first *Critique* Kant himself has become a remorseless agent of such demolition and destruction.

The 'Introduction' deploys building metaphors to express the necessary task of *Critique*. Anyone who undermines the foundations of his

house can be sure that it will collapse (B 2). Speaking of the over-hasty, but nonetheless entirely natural, constructive ambitions of pre-critical reason, Kant says: 'It is, indeed, the common fate of human reason to complete its speculative structures as speedily as may be, and only afterwards to enquire whether the foundations are reliable' (B 9). And he generally characterises the moment that is indispensable to knowledge as the (firm) soil or ground of experience (cf. B 295; B 689; B 719; B 784).

In the 'Dialectic' Kant reinforces his ultimately moral perspective, over against the traditional metaphysical approach, by claiming that 'we must level the ground, and render it sufficiently secure for a moral edifice of such majestic dimensions. For this ground has been honey-combed by subterranean workings which reason, in its confident but fruitless search for hidden treasures, has carried out in all directions, and which threaten the security of the superstructure' (B 375f.). And Kant subsequently adds: 'But if this ground does not rest upon the immovable rock of the absolutely necessary, it yields beneath our feet. And this latter support is itself in turn without support, if there be any empty space beyond and under it' (B 612). He often refers to unreliable foundations (B 9; 512; B 753f.), and, by way of contrast, to the 'firmer ground' (B 784) which is required if we are to erect a system, and to the task of levelling and preparing the ground on which to build (B 375f.). And we should also note Kant's striking comparison of the sceptic with 'a species of those nomads who despise all settled cultivation of the land' (A ix).

Other images of building come into play in the 'Doctrine of Method' when Kant finally glances back over the whole 'Doctrine of Elements', over the dangerous and deceptive ocean of the 'Dialectic', the firm land of truth, and the 'Aesthetic'. In his pre-critical work *The Only Possible Basis* he had merely provided the 'laboriously gathered building materials' (II: 66). But with the completion of the 'Doctrine of Elements', the *Critique* has made a full and proper 'estimate of the materials' themselves, that is to say, has now 'determined for what sort of edifice and for what height and strength of building they suffice' (B 735).

Kant compares that which lies beyond experience with a 'tower', thus implicitly alluding to the Tower of Babel. Quite rightly, Kant does not reduce the sense of the Biblical story, as is often done, to the ensuing confusion of tongues, but concentrates upon human hubris as the

core meaning of the image. For in striving to build 'a tower human which should reach to the heavens', man has attempted something that in principle exceeds his own powers. In terms of the *Critique*, this corresponds to the doomed attempt to know 'the unconditioned'. Yet the epistemic building materials at our disposal will not allow us to erect a heaven-storming or transcendent tower of this kind, but suffice only for a 'dwelling-house' that is 'sufficiently commodious for our business on the level of experience' and is appropriate both to our actual stock of materials and to our need for knowledge (B 735). In the 'Discipline of Pure Reason' Kant adds that the mathematician ('the virtuoso of measurement'), so often presented as the very model for the philosopher, although in fact he employs an entirely different method, 'in philosophy can build nothing but houses of cards' (B 755). Even the metaphysics that has been rejected makes a better contribution to philosophy than mathematics does since at least material relevant to an architectonic of all human knowledge 'can be obtained from the ruins of ancient and collapsed edifices' (B 863).

The Kantian images of 'bedazzlement' [*Blendwerk*] (an expression often rendered in English simply as 'deception' or 'delusion'), of the 'deep-set foundations' of public welfare (B 777), of the 'bulwark' of religion (B 877), derive originally from the domain of defences and fortifications. And Kant also draws on metaphors of civil engineering to describe the task, one bequeathed to his successors, of turning the 'pathway' trodden by the first *Critique* into a 'highroad', that is, into a broad and secure highway that can also facilitate rapid further advance (B 884; cf. B xii). Kant generally employs the metaphor of the path or pathway to suggest the crucial significance of 'method' (from the Greek *methodos* which precisely signifies 'following a path' of investigation). Kant is concerned not merely with moving forward, as it were, but with ensuring that authentic progress which, according to the B 'Preface', characterises all genuine sciences. Hence we must abandon the overgrown footpath of pre-critical thought, embark upon the pathway cleared and opened up by the *Critique*, and finally develop that pathway into a proper highroad.

The critical cartography which permits us to reject the merely 'sceptical satisfaction' (B 786) of the problems of reason also belongs to the language of delimiting and measuring in the broadest sense, as does Kant's observation that transcendent, as distinct from transcendental, principles, only 'incite us to tear down all those boundary-fences

and to seize possession of an entirely new domain which recognises no limits of demarcation' (B 352). This is also the context for the image which Kant introduces into the discussion of the three logical principles of systematic unity: the horizon which can be greater or smaller, individual or common, or, finally, the 'universal and true horizon' (B 687).

23.5 Soaring in Empty Space

Kant compares the realm of experience not only with the firm ground required for erecting a reliable building, but also with the air which the bird requires in order to fly. It is quite true that 'the light dove', on account of the resistance it senses, 'might imagine that its flight would be still easier in empty space', yet without such 'resistance' or 'support' it could never take flight at all. And Kant adds: 'It was thus that Plato left the world of the senses, as setting too narrow limits to the understanding, and ventured out beyond it on the wings of the ideas, in the empty space of the pure understanding' (B 8f.).

If reason leaves the ground of experience and 'ventures out beyond it to the incomprehensible and unsearchable', it 'can only faint at such dizzy heights' (B 717). Since these images of airy heights and heaven-storming undertakings are intrinsically associated with insecurity, dizziness and 'lack of material' (B 735), Kant emphatically rejects the characterisation of his transcendental philosophy as some kind of 'higher' idealism: 'By no means *higher*. High towers and metaphysically great men resembling them, round both of which there is commonly much wind, are not for me. My place is the fruitful bathos [i.e. depth] of experience' (*Prol.*, IV: 373, footnote).

23.6 From Civil Conflict to Due Process

The prevailing metaphorical field of 'law' and 'right' in Kant already makes an indirect appearance in his extended image of the land of truth and the ocean of illusion when he alludes to 'opposing claims' (B 295) concerning disputed territory. Indeed in his lectures on *Pedagogy* Kant had already described the principle of right as 'the apple of God's eye on earth' (IX: 490). Since the first *Critique* presents itself as a tribunal for resolving such contested claims, and thus as a

fundamental social institution, it must also be recognised as a social enterprise with the authority of moral right. In place of all those factors which are responsible for the lamentable state of philosophy – those indicated by the rhetoric of private justice, of feuds and conflicts, of battlefields, and war in general – Kant appeals instead to an idea of peace that is represented by the due process of an open trial, one which can assist the ‘peaceful reign of reason’ (B 493) in securing its own ‘quiet possessions’ (B 771).

The realm of right is already invoked by the very title of Kant’s book since ‘critique’ signifies the process of judging, i.e. of adjudication, which is explicitly unfolded as a trial in accordance with due process. As the A ‘Preface’ explains, the ‘endless conflicts’ (A viii) of earlier metaphysics must be decided through a ‘free and open examination’, through a ‘tribunal which will assure to reason its lawful claims, and dismiss all groundless pretensions, not by despotic decrees, but in accordance with its own eternal and unalterable laws’ (A xi). In his later essay on *The Conflict of the Faculties* Kant points out specifically that such conflicts cannot be settled simply by comfortable agreement or accommodation, but require the rightful decision of a judge (VII: 33). This procedure is presented not in terms of the criminal law, although it is occasionally described as a ‘duel’ (cf. B 451), but rather of the civil law which adjudicates contested claims to rightful possession. Since the *Critique* sits in judgement on proper principles in general, it assumes the status of the highest court of appeal, or of ultimate legitimate authority. As far as reason, and specifically its theoretical employment is concerned, the first *Critique* must be regarded as the ‘Supreme Court’ which exercises jurisdiction with respect to questions concerning the ‘constitution’ of our powers.

Regarded in terms of a civil and administrative legal investigation, the ‘Aesthetic’ and the ‘Analytic’ both involve a metaphysical and a transcendental examination or deduction. In accordance with this judicial concept of ‘deduction’, the former clarifies the facts of the case (*quaestio facti*), while the latter clarifies the issue of justification (*quaestio iuris*). Even with regard to the object of the ‘Dialectic’, namely the ‘ideas’, Kant attempts to furnish a judicial deduction (cf. B 393; 697f.; 699). And the title of the chapter on ‘The Antinomy of Pure Reason’ also involves a juridical concept, as do his references to the ‘document of truth’ (B 779), to a ‘title’ in the legal sense of the word (e.g. B 768), and to our rightful rather than merely presumed ‘title to secure possession’ (B 767).

A considerable number of other Kantian metaphors also belong to the realm of law: the demand for the 'testimony' of experience, the comparison of the critical enterprise with the 'police' whose business is 'to prevent the violence of which citizens stand in mutual fear' (B xxv), the references to the 'despotic' rule of the dogmatists, to the 'anarchy' of the sceptics, to the pretensions of metaphysics as the 'supposed', i.e. alleged, Queen of the sciences, to the alternative of 'intestine wars' or 'civil society', understood in the sense of a publicly established legal order (A ix). We might also mention his analysis of the subsumptive faculty of judgement which allows us to distinguish 'whether something does or does not stand under a given rule (*casus datae legis*)' (B 171), his reference to the necessity for opposing parties 'to defend themselves, terrorised by no threats, before a jury of their equals' (B 504), his allusion to the legal 'satisfaction of both parties' in the 'suit' regarding the third and fourth antinomies (B 558), to the process of 'public authorisation' (B 777), and to the legitimate 'censorship exercised by reason' (B 788). And we should notice, above all, an otherwise rarely observed moral and judicial presupposition of Kant's argument: since it is expressly left to the reader to judge the success of the first *Critique* (A xv), the work requires that minimum of personal justice on our part, that 'candour and honesty' which 'does not wish to see a righteous cause defended in an unrighteous manner', but proceeds instead in 'an entirely sincere way' (B 778).

If we adopt the contrary approach, we can only resort to unfair means of prosecuting our case. Amongst these we should perhaps include that of 'the special pleader who attempts to take advantage of an opponent's carelessness' (B 458), or the cunning method of presenting 'an old argument disguised as a new one'. For it is unfair to appeal to 'the agreement of two witnesses' where the first 'merely changes its dress and voice' (B 634) in order to disguise itself as a different one. And the same applies to 'sophistical arguments', to 'deceit, hypocrisy and fraud' (B 777), to 'unreliable testimony' (B 802). The entirely contrary approach, where we simply declare war on our opponents, only involves the 'throng of arguments and counter-arguments' (B 492) and the clash of 'dogmatic weapons' (B 782), not to mention that spurious warfare which involves the 'mock combats' already alluded to (B 492; cf. also the 'vain attacks' of B 771) and the contests where both parties merely 'beat the air and wrestle with their own shadows' (B 784). And every form of 'dictatorial'

authority naturally negates the very idea of publicly recognised right (cf. B 720 and 766).

If comparisons with the realm of law and justice appear characteristic of the B 'Preface', they occur just as frequently in the second section of the 'Discipline of Pure Reason', that concerned with the 'polemical' employment of reason (from the Greek *polemos*: war). Once again we encounter 'two persons engaged in a dispute over a contested issue' which can only be resolved by 'the critique of pure reason as the true tribunal for all disputes of pure reason' (B 778f.). Kant specifically describes the pre-critical state of philosophy as 'state of nature' where reason can only assert and secure its claims by recourse to 'war'. The proposed alternative, the tribunal of reason itself, on the other hand, can procure 'the security of a legal order' and thus establish an 'eternal peace' (B 779). In order to secure this peace, as Kant says in the closing words of the 'Transcendental Doctrine of Elements', it has proved 'advisable, with a view to the prevention of such errors in the future, to draw up in full detail what we may describe as being the records of this lawsuit, and to deposit them in the archives of human reason' (B 732).

The self-reflexive character of the critical enterprise is also described in judicial terms since human reason 'recognises no other judge in turn than universal human reason itself' (B 780). And the tribunal of reason also has the specific competence to rule that philosophy is not permitted 'to deck itself out with the title and insignia of mathematics, to whose ranks it does not belong' (B 763). That the realm of law and justice indeed represents the principal source of many of Kant's most important metaphors is also clearly revealed when he alludes to the 'procedure' of reason (B 609) or the 'interrogation' of 'dialectical witnesses' (B 731), deploys the rhetoric of prosecution and defence (B xlv; B 767: B 804), of lawsuits (B 116; B 452), of retorts (B 770), of self-defence (B 805), of 'giving a hearing' (B 785), refers to pretended claims or presumptions of one kind or another, and, last but not least, to the 'admission' of our own ignorance (B 785).

Note

1. Originally a dense black variety of chert (lyddite) used to check the quality of gold and silver alloys in coins etc.

24.1 Re-Transcendentalising Philosophy

From the time of Nietzsche at least we can identify the emergence of an emphatic scepticism concerning the fundamental idea of transcendental philosophy, namely that there is a single world to be known. Rorty (1978) criticises the notion that there is *one* epistemically accessible world in the context of a brief history of modern philosophy narrated in terms of two broad phases. In the first phase, that of *re*-transcendentalisation, we find several very different attempts to renew transcendental philosophy by identifying conditions of knowledge that are independent of experience, as in Peirce's pragmatism, Husserl's phenomenology, Heidegger's *Being and Time*, Wittgenstein's *Tractatus*, or the earlier thought of Russell. But this eventually gave way to a second phase of *de*-transcendentalisation. In the development of pragmatism from Peirce to Dewey, in the movement within phenomenology towards a philosophy of 'the Other', in the developments within analytical philosophy that led to Quine and Sellars, and then to Davidson and Putnam, in the path that led Wittgenstein from the *Tractatus* to the *Philosophical Investigations*, and in Heidegger's gradual turn from fundamental ontology to a philosophy of 'commemorative thinking', we can recognise a common thread. In every case these thinkers came to renounce the quest for an a priori conceptual structure or an Archimedean point or foundation for all knowledge. According to Rorty's account, Kant's hope of finally bringing philosophy onto 'the sure path of a science' has effectively yielded instead to a kind of epistemological behaviourism. Thus Quine (cf. 1960 already, and 1981: 2) presents three arguments that contest the assumption of a priori foundations. For he claims that truth and knowledge are essentially issues to be decided by scientific rather than philosophical considerations, that the conceptual structure in terms of which we in fact know reality

is only one of several possible such structures, and finally that philosophical questions are entirely dependent upon context.

This is not the place to discuss the accuracy of Rorty's brief history of modern thought. But *one* of his arguments, that which appeals to Hegel's critique of Kant as developed in the *Phenomenology of Spirit*, can surely only provoke a fundamental objection. It may be true that Hegel offers a more dynamic alternative to Kant's static claims concerning objectivity, insofar as spirit raises different claims to objectivity in accordance with the different levels on which it finds itself in each case. But these claims are only relativised by reference to an already anticipated objectivity allegedly certified and disclosed on the very highest level of experience. Thus Hegel holds that a fully completed philosophy accomplishes the very thing that Rorty vehemently rejects: a form of knowing in an emphatic, and indeed absolute, sense that far exceeds Kant's own claims concerning the a priori. And while the first *Critique* attempts to elicit the pure concepts of the understanding essentially from something which is antecedent, namely the table of judgements, Hegel attempts to 'derive' them, in accordance with their inner determinate character, from the immanent or self-determining movement of the concept itself.

Rorty's own historical thesis in favour of a general historicisation of philosophy is already cast in doubt by the fact that this position, which is by no means as new as it sounds, has not succeeded in establishing itself as the prevailing view. It is quite true that the sciences, with respect to their method and the cognitive interests that define them, by no means constitute such a unified field as to justify the sort of unified philosophy of science *as such* which the first *Critique* undertook to provide. But we can delete that qualification here, thus cease to investigate science in the *singular*, and content ourselves instead with the 'genuine' sciences that are thematised in the first *Critique*. And then, as our progressive investigation of the *Critique* has indicated, we can certainly find good reasons for endorsing many of Kant's claims. Thus while it is true that physics has transformed the concept of causality in terms of theories of probability, it has not thereby abandoned the principle of causality itself: the preceding (event) still counts as the ground of what comes after it. And while the mathematics now employed in the science of physics has been expanded and developed in many fundamental respects, *some* form of mathematics has still proved to be indispensable.

A third point against Rorty's claims is actually furnished by the cross-cultural comparisons to which he likes to appeal himself. For we know of no culture or epoch whatsoever in which human knowledge can dispense with space and time as the forms of intuition or with reasoning in terms of cause and effect in some way or other. Thus there are at least four serious candidates for synthetic a priori status: space, time, causality, and mathematics as the language required for objective measurement. And cultures in which intensive scientific investigation is expressly pursued would also have to recognise the regulative ideas as a fifth element in this connection. If we attempt to conceptualise our actual cognitive practices, we may well acknowledge a certain contextual dependence on the part of philosophical theses, but we shall also remain highly sceptical concerning the exclusivist claim that is raised by epistemological behaviourism.

Finally, we should not forget that Kant is not primarily concerned with the synthetic a priori itself, but with a critical examination of reason which partly legitimises the claims of the latter, but also, and pre-eminently, limits them. And this provides a fourth consideration which will lead us to interpret the recent history of philosophy rather differently than Rorty: insofar as Peirce, Husserl, the early Wittgenstein, Heidegger and Russell were principally interested in exploring the a priori elements involved in experience, they merely rehabilitated one side, the affirmative side, of the critique of reason. To the extent that the other side, the unmasking side, of critique was ignored, they fell victim to a kind of optimism with regard to reason which is alien to the intentions of the first *Critique* itself and reminds us of the foundationalist aspirations of Descartes or of German Idealism more than it does of Kant. It is necessary and inevitable therefore that the further development of philosophy now has to emphasise the negative and essentially limiting side of the critical enterprise which had effectively been thrust into the background.

In both of these re-transcendentalising and the de-transcendentalising phases of modern thought we witness the disintegration of the unified conception of the task of philosophy which was crucial in Kant's eyes and constitutes the great achievement of the first *Critique*: the twofold programme of legitimation and limitation. In refusing the exclusivist claims of both foundationalist re-transcendentalisation and pragmatist-behaviourist de-transcendentalisation, this original programme promises greater

philosophical success than either alternative. And in fact even Descartes does not seek an Archimedean point from which to revolutionise the world of knowledge. For the God who furnishes the central principle for Descartes is merely supposed to vouchsafe the possibility of truth. But of course we must recognise that Kant himself – and this provides yet another argument against Rorty's interpretation – renounces this kind of authoritative guarantee anyway. Insofar as Kant is interested in the issue of grounding, he is concerned with 'reasons', or *logoi* in the classical sense: with rational grounds or arguments rather than with the bases or 'foundations' of knowledge. And anyway his own transcendental arguments are concerned with disclosing the conditions of the possibility of (scientific) arguments, rather than with these latter arguments themselves. The first *Critique* seeks to identify the structural elements with which the sciences themselves construct their respective edifices of knowledge, in accordance with the foundations specific to each particular science. The principle of transcendental apperception too is merely *one* element within a rich network of arguments, one which even as a whole does not claim to provide some kind of 'ultimate grounding' in the Cartesian or Fichtean sense, but seeks instead to exhibit the unity of reason by recourse to the concept of ends. And the image of the Archimedean point also appears inappropriate to Kant since he regards everything that lies 'beyond' our knowledge, the thing in itself, as intrinsically inscrutable and therefore addresses himself entirely to what lies 'within' the domain of the knowable.

But in addition to these five basically historical considerations, there is also a sixth, and substantive, argument against Rorty's position. This argument distinguishes between a stronger and a weaker reading of transcendental philosophy, and only regards the latter reading, which is actually weak in a twofold sense, as truly appropriate to Kant's project. Thus in our earlier assessment of Kant's theoretical claims we concluded with respect both to philosophy and to the sciences of physics and mathematics that they are more strongly determined in a historical sense and less strongly determined in an a priori sense than they appear to be in some, though not many, of Kant's specific formulations. Thus we cannot derive the exclusive validity of Euclidean space with respect to either mathematics or physics on the basis of what we have called transcendental spatiality. And we have also recognised that Kant's normative concept of 'genuine science' ascribes a privilege to

mathematics and mathematised natural science which the sciences no longer accept in principle, even if attempts to re-establish that privilege repeatedly continue to arise.

On the other hand, we must also recognise that Kant does not simply deny all scientific character to fields such as chemistry, jurisprudence or history. He merely argues that they cannot be regarded as 'genuine' sciences in the emphatic sense. And what is more, he also relativises this normative concept of science himself when he engages, as in the third *Critique*, with the life sciences, or when he composes his own *Anthropology from a Pragmatic Point of View*. And even if we pursue this broader perspective further beyond Kant, and include the whole world of the human and social sciences within our purview, it hardly suffices to confirm Rorty's claim that philosophy, science and rationality in general can now only draw on essentially historical elements in their own construction. And it seems impossible to avoid the threat of the kind of pragmatic self-contradiction involved in propositions such as: 'The Cretan asserts that all Cretans are liars'. If we deny universal assertions, we cannot present this negative claim itself as universally valid, as Rorty does. And the only kind of claim that is valid in a strictly universal sense is that whose possibility Rorty contests: the (synthetic) a priori.

24.2 Subversive Affirmation

While for Kant the proper object of philosophy is 'reason', for Rorty and for many others it has now become the 'farewell to reason'. Kant is thinking of reason in the emphatic sense, which naturally appears in the singular here, even if it is presented in the twofold form of its theoretical and practical employment. It is only this concept of reason which enables philosophy to assert itself alongside mathematics and the natural sciences which were already successfully established in his time, and thus to fulfil its own autonomous tasks and not merely to serve an ancillary role in the form of a theory of science. Of course, it is quite true that Kant does not attempt to provide the simple opposite of an ancillary science either, which is why in this respect too he cannot plausibly be presented as the proper enemy of much current philosophical reflection.

As far as the first *Critique* is concerned, 'reason' signifies a highest form of rationality to which philosophy, with its project of legitimation

and limitation, makes a double contribution. On the one hand, the properly philosophical theory of knowledge and objectivity permits the conceptual clarification of two extra-philosophical forms of rationality, namely physics and mathematics, and in demonstrating their legitimacy does perform something of the role of an ancillary science. On the other hand, the properly philosophical insight into the clear limits of knowledge serves to counter the ever-present danger of ascribing absolute validity to one particular form of rationality, indirectly in relation to the exclusive claims of the sciences, directly in relation to the exclusive claims of theoretical philosophy, and, in the last instance, directly also in relation to the exclusive claims of theoretical rationality as such, which embraces the sciences as well as philosophy. And Kant's trial of reason contradicts throughout the essentially naive view that reason in the greatest and most emphatic sense, as the faculty which ultimately controls and integrates everything else, is simply given as something to which we could immediately lay claim.

But Kant's repudiation of the presumed claims of reason leads neither to Foucault's merely subversive programme (cf. 1961) of denying reason's rights to any exemplary or criterial status, nor to that *Farewell to Reason* with which Feyerabend (1987) continued the expressly anarchistic argument of his earlier book *Against Method* (1975). One of the intentions lying behind such polemics as these may certainly be quite legitimate: in Foucault's case that of rehabilitating marginalised groups, such as those who have been characterised as mentally ill or sexually deviant, and in Feyerabend's case that of challenging established criteria of rationality that had been drawn too rigidly or narrowly. But while the general intention, on the other hand, the attempt to bury the western idea of reason once and for all, may well plume itself for its radicality, it lacks both an accurate diagnosis of the problem or a measured grasp of the issues.

If in our reflection on the sciences, for example, we concentrate not merely on the existing given range of knowledge, methods, and cognitive interests, but recognise instead the open and ongoing process of investigation that is operative in all three of these respects, we cannot blankly contest the role of reason in the sciences. The first *Critique* rightly challenges the general polemic against scientific rationality which subsequently prevails in the work of Nietzsche and Heidegger, in the first generation of the Frankfurt School, and later again in the thought of Foucault, Feyerabend and Rorty. Even a relatively brief

glance at the history of science and philosophy suffices to show that Kant's fundamental intention is clearly superior in this respect: to promote thought not *in place of* science, but to promote a science which is legitimated and furthered by thought, but which is also assigned its proper limits by thought.

If we recognise the democratic constitutional state, along with its own potential for self-criticism and internal reform, as providing the basic grammar, as it were, of modern society, and if in addition we endorse the attempt to encourage at least a minimum of individual and democratic rights even at the global level, we cannot fail to regard the allegedly radical subversive projects outlined above as in truth astonishingly one-sided in character. Of course, these projects which seek to subvert or bid farewell to the traditional priority of reason are by no means completely unjustified. For on closer examination many a conception of reason reveals itself as not particularly rational at all. But that is precisely what recommends Kant's project, or at least his fundamental approach, so emphatically, an approach that combines a specific and well-defined subversion of reason with an openness for an equally specific and well-defined affirmation of reason. We could thus describe Kant's position as one of subversive affirmation.

It is of course true that the generally subversive approaches with which we are most familiar today derive from philosophy after the time of Hegel. But we do not have to look in Kierkegaard, Marx or Nietzsche, in Frege, Wittgenstein or Heidegger, or in the Frankfurt School, to discover the first examples of such a conception. For we might consider Blaise Pascal, an author who appears to have been largely forgotten in this regard, when he wrote: 'Les hommes sont si nécessairement fous que ce serait être fou par un autre tour de folie de n'être pas fou' (*Pensées*, no. 414: 'Men are so necessarily mad, that not to be mad would amount to another form of madness'). Pascal's brilliant aphorism criticises the pride, especially in times of supposed Enlightenment, that man takes in his own reason. Can we claim that he is thereby anticipating the work of the first *Critique*? Pascal certainly expresses radical doubt concerning the possibility of complete and undiminished rationality. To hold that man is so mad, that he would, in another sense, be mad not to be mad, is to voice a profound scepticism concerning human reason. For 'folie' here represents not just the counter-concept to reason, but the hypertrophied extreme of unreason itself. But Pascal himself also makes use of the faculty that

he has so directly attacked. In other passages he explicitly lauds the power of reason, now described as 'pensées' (for example in no. 146 or 365). Thus Pascal already practises what Kant will present for the first time as an explicit programme: a critique of reason that is mounted by reason.

And Pascal's claim is not entirely without precedent itself. Only a few years earlier La Rochefoucauld had observed that 'One who lives without madness is not nearly as wise as he believes he is' (Maxim no. 209). And before him Montaigne (*Essais* III, 8) had cited the advice of Cato the Elder that the truly wise man should seek instruction from the madman whom he had formerly so despised. But perhaps we should speak more appropriately of the 'fool' rather than the 'madman' here. Erasmus had already attacked the self-conceit of the wise in his entertaining satire *In Praise of Folly*. And before that Nicholas of Cusa had presented three philosophical dialogues in which a complete layman (*idiota*) had effectively instructed the philosopher in 'wisdom' – the very thing for which the latter claimed a special competence. Two aspects of the critical enterprise have thus revealed themselves long before the first *Critique* itself: the humbling of reason (produced in Kant by the 'discipline' it properly requires) and the insight that, with respect to the fundamentally existential questions, the 'highest philosophy' enjoys no special privilege over 'the commonest understanding', either with respect to our moral judgement or our essential human ends (B 858 ff. and 835f.).

And Pascal's frequently cited remark that 'le coeur a ses raisons, que la raison ne connaît point' (*Pensées*, no. 277: 'The heart has its reasons, which reason does not know') anticipates another Kantian thought. For Pascal's alternative point of reference here, the complex authority of the heart ('*coeur*'), is not only responsible in matters of religious faith (cf. *Pensées*, no. 278), but also for the ultimate premises of demonstration, and even for the true principles of mathematics (no. 282). Thus Pascal criticises a 'reason' which either fails to address certain things which are of crucial importance to human beings, such as religious faith, the principles underpinning theoretical knowledge, and also the human passions (nos. 412–4), or even actively opposes them. Pascal also anticipates a fourth Kantian thought. For he is not content simply with defending a merely negative critique, but also strives to incorporate, through his celebrated 'wager', the aspect of religious faith which reason initially lacked. And since Pascal's claim concerning

inevitable folly also implies an epistemic modesty which attempts to integrate the knowledge of our ignorance within our knowledge in general, he foreshadows another Kantian theme.¹

Since the concept of a subversive form of rationality was not first discovered by post-Hegelian philosophers, it is problematic to generalise so hastily about 'the' project of modernity and then proceed to the radical repudiation of the project in question. For we can see that an alternative approach, that of subversive affirmation, is already adumbrated in Pascal's brilliantly formulated aphorisms, for example, in his paradoxical remark: 'Se moquer de la philosophie, c'est vraiment philosopher' (*Pensées*, no. 4: 'To laugh at philosophy is truly to philosophise'). But of course this alternative approach is only formulated as a conceptually articulated and argumentatively developed project in Kant's first *Critique* itself. For the critical project avoids the narrower and more reductive approach that threatens to return in post-Hegelian philosophy. Beginning with Marx and Nietzsche, and from the first generation of 'critical theory' through to Foucault, to discourse ethics and, in another way, to Luhmann, the subversive critique of reason tends to become dogmatic in turn. This type of critique seems to seek nothing more eagerly than the status of a new orthodoxy. As far as the politics of 'theory' is concerned, the students and disciples of such approaches readily gather in factions which are highly intolerant of other 'deviant' views and perspectives.

Pascal already proceeded very differently. He was himself a successful practitioner of what he criticised, a connoisseur of the mathematical mentality, and in a sense even extended it, via the calculated method of the wager, to religious faith itself. Thus he also remained open to the rights of the approach he criticised, although of course he clearly recognised their merely partial and limited character. For Pascal counteracted the demands of the mathematical mentality by appealing to the entirely heterogeneous factor of the complex authority of the heart. Considered as a whole, therefore, Pascal's attempted overcoming of an excessively narrow conception of reason led not to a richer and more comprehensive, though still internally homogeneous concept of reason, but to a carefully qualified pluralistic approach.

Compared with Pascal's perspective, Kant's version of subversive affirmation is far more ambitious, and is fully developed in detail: the first *Critique* justifies the claim to objectivity on the part of experience, demonstrates that mathematics is indispensable for this, exposes the

cognitive claims of reason as presumptuous, while still permitting a specific regulative role to the ideas, and discloses morality, along with its further development in terms of moral theology, as the distinctively practical employment of pure reason.

24.3 Trans-Subjectivity

The thinkers of German Idealism initiated a critique of subjectivity which they also directed, astonishingly enough, against Kant himself. Principally on account of the concept of transcendental apperception, the first *Critique* has been subsumed under what has been described as a typically modern 'philosophy of consciousness', with its methodological solipsism that presupposes an entirely self-transparent rational subject that is immediately capable of apprehending truth, a subject 'which is understood as essentially pure and worldless and therefore untouched by the dimension of history or social praxis [...], as solitary in principle' (Kuhlmann 1987: 144). But anyone who reads the first *Critique* with due care will certainly have serious reservations about these charges. In this connection it will be helpful to sketch the different versions of the supposed alternative to Kant's approach (cf. Höffe 2002, Chapter 12): (1) In a moral sense we can describe individuals as anti-solipsistic if they relativise their own private interests, also act with a view to the common good, reject egoism as an exclusive principle, and thus accept a place for altruism. (2) Social-theoretical anti-solipsism claims that the subject intrinsically and essentially stands in relation to other subjects. (2a) According to the 'logical' variant of this view, subjects are only constituted in and through intersubjectivity: personality presupposes inter-personality and individual self-recognition presupposes reciprocal social recognition. (2b) According to the empirical variant of the same view, human beings cannot be understood as atomic individuals, but only as participants in a sociality which involves both the social structure in general as well as various sub-communities, and ultimately embraces all humanity, including that of the past and the future. (3) According to the linguistic and semantic anti-solipsism of Wittgenstein, and his private language argument, there cannot possibly be an exclusively private language whose words 'refer to what can only be known to the speaker; to his immediate private sensations' (*Philosophical Investigations*,

Section 243). (4) Finally, there is an epistemic anti-solipsism which takes (4a) a transcendental-pragmatic form (Apel and followers such as Kuhlmann) or (4b) a universal-pragmatic form (defended most recently in Habermas 2001) and argues for the impossibility of ignoring the specific historical and cultural features of reason.

We should also mention here that certain theoretical accomplishments as such are essentially subjective in character, such as, for example, the fact that I can remember something, that I may make a slip of the tongue, that I can be deceived or mistaken, that I entertain a specific prejudice or conviction, and so on. Simply on this level, of course, it is not possible to engage in a serious discussion of the claims of the first *Critique*.

We may already doubt the validity of the solipsistic interpretation of Kant simply by recalling his emphatic criticisms of Descartes, the thinker who is paradigmatic for the central role of subjectivity. With regard to the fundamental intention and basic structure of his thought, and to the method he employs and the substantive conclusions he defends, Kant develops an explicitly anti-Cartesian and equally explicitly anti-solipsistic philosophy. But since Kant also follows in the footsteps of the *Discours de la méthode* by providing a 'treatise on the method' of philosophy (B xxii), and by engaging directly with the problem of scepticism, we can say he concurs with Descartes in these two specific respects, although they are quite unconnected with solipsistic assumptions of any kind.

And we should note that in the moral context Descartes does not deserve the charge of solipsism anyway since he clearly subscribes to the comprehensive duty 'which obliges us to procure, as much as in us lies, the general good of all mankind' (*Discourse on Method*, Part VI, p. 119). Here again Kant agrees with Descartes, and behind him with Bacon who anticipated both thinkers in this regard. From the motto from Bacon (B ii) with which Kant's book really begins ('in commune consultant': consulting together concerning the dignity and welfare of man) through to the final parts of the book, in the last paragraph of the 'Architectonic' (B 879), the first *Critique* expressly seeks throughout to serve the general good. It directly serves our epistemic general good, negatively by overcoming the endless disputes surrounding metaphysics, and positively by promoting 'the common interest of an ever more enlightened reason' (*Prol.*, IV: 380). And it even contributes indirectly to our general moral good, once again negatively

by 'silencing for ever all objections to morality and religion' (B xxxi), and positively by articulating the ideal of the highest good. The opening line of Bacon's motto even underlines Kant's moral anti-solipsism: he who is silent about himself, in order to foreground the fundamental question at stake, also serves the general good by setting his own purely individual interests aside.

Methodologically speaking, it is quite true that Descartes follows a solipsistic-looking paradigm with regard to the rules of mathematics in the *Discours*, and also in the *Meditations* which are conducted, as the title suggests, in the first person singular.² Kant rejects both aspects of this Cartesian approach. In his tribunal of reason Kant adopts instead a genuinely social and profoundly anti-solipsistic model, both in his fundamental intention of clarifying the dispute between rationalism and empiricism and in the discursive method he adopts for resolving the argument, not least in the demand that our judgements must 'allow of being communicated' (B 848f.).

The discourse-theoretical approach defended by Habermas and Apel pursues the goal of rationally motivated agreement with respect to disputed validity claims. But in relation to metaphysics or fundamental philosophy, the first *Critique* is discursive in an even more basic and comprehensive sense. This is already clear from the beginning with regard to the dispute over metaphysics which is so fundamental that it requires a searching investigation of the very possibility of philosophy in the first place. This discursive approach is consolidated by establishing a criterion for 'scientific' philosophy that facilitates the reaching of 'common agreement' (B vii) and is completed by appeal to a 'free and open examination' (A xi, footnote) which eschews all judgements possessing 'only private validity' (B 849) and appeals exclusively to universal human reason. And this perspective itself is also defined in social terms. For in the tribunal of reason that is instituted by reason itself each individual must perform the role of both prosecutor and counsel for the defence, and, not least, that of judge as well.

In Kant's typically enlightened point of view, no one can appeal here to special technical knowledge or expertise, or lay claim in this respect to any particular status or privileged position, whether established by the grace of God or sanctioned by human power. Kant vehemently repudiates any 'monopoly of the Schools' (B xxxii) in favour of 'the agreement of free citizens' (B 766). Philosophy thus 'remains the sole

trustee [*Depositär*] in regard to a science which benefits the public' (B xxxiv). And it is even a 'sacred right' that in philosophy 'everyone has a voice' (B 780). The motto of the Enlightenment thus certainly involves a moment of (modest) personal morality. But the 'courage to use one's own understanding' (*What is Enlightenment?*, VIII: 35) has nothing directly to do with the alternatives of solipsism or anti-solipsism.

We can only come to the following conclusion: once we dispense with the vague expression 'rational subject', and distinguish the object under investigation, namely the faculties of sensibility, understanding and reason, from the reason which conducts the critical examination itself, it should be clear that the latter, at least, is not remotely solipsistic in character. On the contrary, the first *Critique* frees itself so emphatically from solipsism that we can see, as we have suggested, that the allegedly new paradigm of 'discourse' and 'communication' did not actually arise in Frankfurt, or in the 'Cambridge Metaphysical Club' where the early American pragmatists first gathered together, or, finally, in the work of George Herbert Mead. If we disregard even earlier possible sources, we have to say that this approach was actually born in Königsberg.

We might still be tempted, of course, to direct the charge of solipsism against the 'reason' which constitutes the object of investigation in the first *Critique*, but the charge can be met here too. In general it derives apparent plausibility only from a highly selective reading of Kant which appeals to the concept of transcendental self-consciousness as 'the highest point' for all employment of the understanding (B 134, footnote). But the 'understanding' involved here is only one of three equally legitimate faculties of knowledge, so that transcendental apperception merely forms the highest point of the understanding as such, not the highest point of the theory of sensibility or of reason. Even in the context of the theory of the understanding, transcendental apperception does not represent the constructive conclusion of the argument, which we must seek rather in the 'System of Principles'.

And even the solipsistic interpretation of the principle of the transcendental 'I think' is open to criticism. To interpret the 'I think' as an internal monologue or a private inner world in contrast to a collectively shared, genuinely communicative social and linguistic world is to miss the point at issue. For the 'I' in question, considered as a

condition of knowledge, is not a specific individual ego with which we might contrast some alter ego, but already undercuts this alternative. Thus the argument of the 'Deduction' can switch quite unproblematically from the 'I' to the 'we' and back again to the 'I'.

In order to forestall misunderstandings, Kant also provides other possible expressions for the 'I think', such as the 'x' which symbolises the unknowable here and has nothing to do with the usual notion of a quite general but still empirical ego: 'Through this I or he or it (the thing) which thinks, nothing further is represented than a transcendental subject of the thoughts = X' (B 404).

If we still wished to maintain the (now much weakened) charge of solipsism against the pure 'I think', we should equally have to direct it against other higher-level elements too, and thus against the pure forms of intuition, the categories, the schemata and the principles, also against the regulative ideas, and, further, against the circumstance that human, as opposed to divine knowledge, is neither purely spontaneous nor purely intuitive in character. But all these elements arise from a theoretical subjectivity beyond any particularity of empirical subjects. This theoretical subjectivity, as the shared character of all subjects, is intersubjectively valid. Since it is not formed between (inter) historical subjects, and equally precedes both historical subjectivity and historical inter-subjectivity, we should speak more precisely of a 'trans-subjectivity' in this connection. The standard alternatives of 'subjective versus inter-subjective', of 'monological versus dialogical' or 'monological versus communicative', which have often rather hardened into dogma, actually contribute little to a proper understanding of the first *Critique*. The building materials for human knowledge and scientific investigation which are furnished and developed in the 'Doctrine of Elements' do not require consensual legitimation, but they are certainly capable of it and equally make it possible. For as the conditions of a common world, one that is shared in the strictest and most objective sense, they facilitate every consensus, and as conditions of the possibility of consensus they deserve the 'agreement of free citizens' (B 766). More precisely put, both the citizens and the consensus which they achieve always already have these elements behind them.

It is typical that none of these supposed alternatives raises the question whether knowledge that is intersubjective in the strict sense, i.e. valid for all subjects at all times, would still be possible if we deny the

elements Kant identifies and repudiate the pure forms of intuition, along with pure concepts, transcendental laws of nature, and regulative ideas or their functional equivalents. And with regard to the constructive side of the first *Critique*, its 'substantial theory' of mathematics or theoretical physics for example, neither Apel's transcendental pragmatics, nor Habermas's universal pragmatics, nor Rorty's pragmatism, offers a convincing alternative.

And Kant himself already cultivates that general openness to 'history, tradition, language, social praxis, life, finitude etc.' (Kuhlmann 1987: 149) on which the various forms of pragmatics and pragmatism lay such emphasis. But for Kant this openness is based on different reasons. The pre-communicative and ahistorical elements of the first *Critique* are very modest, as in the case of spatiality for example, and indeed more modest than Kant himself assumed. Indifferent as they are to particular differences of history and language etc., these elements make all further specification and modification possible in the first place.

Insofar as we have already occasionally acknowledged the necessity of making somewhat more modest claims than Kant sometimes does, we are also pursuing a certain de-transcendentalisation in this connection, albeit in a different way than that recommended by Rorty. Thus the project of transcendental thought is not simply rejected, with much rhetorical pathos but little careful examination of the argument, but is restricted to its proper and defensible function. Formulated paradoxically, Kant's claims are weakened here precisely in order to strengthen the transcendental case.

But the first *Critique* offers far more than merely an anticipation of later approaches. Indeed it also furnishes an alternative model to all attempts to reduce objectivity to sociality or intersubjectivity. Kant has no difficulty in endorsing the idea of a collectively shared, and thus social world. But he sees the ground of this shared world in objectivity rather than sociality, an objectivity whose conditions simultaneously constitute the conditions of all sociality. It is merely in this sense that all individuals, however different from one another they may otherwise be, can nonetheless be said to constitute something like a single human being. Thus in a relatively early work we already find Kant saying: 'If every person amongst other human beings has his own world, then we would assume he is dreaming', whereas it is clear, once we are awake, that we all 'inhabit a shared world'

(*Dreams of a Spirit Seer*, II: 342).³ The anti-solipsism of the first *Critique* could be encapsulated as follows: on the transcendental level we are simultaneously concerned with a subject determined (a priori) by rules and with a rule-governed society.

24.4 An Epistemic and Moral World Republic

That Kant emphatically rejects Plato's conception of the philosopher king (*Republic*, V: 473c–d) is clear not only from his late essay on *Perpetual Peace* (VIII: 368f.), but already from the democratic criterion of the 'agreement of free citizens' explicitly formulated in the first *Critique*. Of course, democracy here is not to be understood in a merely empirical sense, as if we were primarily concerned with some kind of majority decision. We must rather withhold judgement 'until the weight of the evidence is such as to compel assent' (B 615). And this assent is only possible on account of the elements which, according to the Copernican turn, already lie in the theoretical subject itself, and which furnish, as it were, the democratic constitution of the realm of knowledge, one that embraces all humanity, including that of the future. The rule-governed society that is formed by rule-determined subjects enjoys the status of what we have called an epistemic world republic.

The democratic constitutional state in the usual sense is characterised by democracy, human rights, and the division of powers. All three of these elements are also encountered in the first *Critique*. To take the democratic element first: Kant's exemplary claim that the understanding is 'the lawgiver of nature' (A 126), that it 'prescribes the law, as it were, to nature' (B 159), clearly also applies to the a priori forms of sensibility too, though not of course to the material of knowledge which is furnished through the sensuous affection of the mind. All epistemic power thus derives from the epistemic community at large, from the whole body of cognitive subjects.

Secondly, along with this division of powers between the 'objective' material and the 'subjective' forms, we must also recognise a further one. For within the subjective realm itself, epistemic power is also shared between the three faculties of sensibility, understanding and reason.

Thirdly, and above all, there are epistemic principles which, on analogy with pre-positive and the supra-positive human rights, also

possess a pre-empirical and a supra-empirical significance. Kant thus repudiates the notion of a merely private language in an even more fundamental sense than Wittgenstein. It is true that Kant does not argue his case explicitly in terms of the philosophy of language. Yet Wittgenstein too appeals primarily to the necessity of criteria (rules) which must in turn be public in character. For with a supposedly merely private criterion, 'I have no criterion of correctness. One would like to say: 'whatever is going to seem right to me is right. And that only means that here we can't talk about "right"' (*Philosophical Investigations*, Section 258). This type of argument can already be found in the first *Critique*. By recognising the rules that are required for all correctness or objectivity, Kant explicitly rejects the arbitrariness which allows itself 'a free and unlimited activity' (B 738). If we follow Kant's 'discipline' and restrain the 'tendency to disobey certain rules' (B 737), we have to acknowledge the significance of rules as such. And of course the concepts which furnish the elements of the understanding also essentially function as rules.

Since Kant's principles represent the conditions of the possibility of any particular language, they belong to a systematic language that is 'original' in a non-historical sense. Just as human rights essentially constitute the core grammar of the social world, so too the elements identified by Kant constitute the (transcendental) core grammar of the epistemic world. The building materials are provided by the pure forms of intuition, the pure concepts of the understanding, together with their origin in transcendental apperception, the pure schemata, the principles of the pure understanding and the regulative principles of all scientific investigation, and last but not least the immanent transition from theoretical to practical reason.

In spite of all subsequent attempts to improve, and even to refashion, the general argument, Kant's fundamental thought retains its original validity: just as there 'can only be one human reason, [...] there can be only one true system of philosophy from principles', just as there is only a single science of chemistry (*MS*, VI: 207). Kant's claim that chemistry must now proceed 'in accordance with Lavoisier', and philosophy in accordance with the first *Critique*, is certainly rather overoptimistic. But there is no doubt that neither field can legitimately fall back to a less developed stage of thought.

In accordance with its cosmopolitan significance, philosophy is fundamentally concerned with 'that in which everyone necessarily has an

interest' (B 867, Footnote). Knowledge in the strictest sense belongs to this existential interest. Insofar as the first *Critique* deals with nature, it endorses a generic universalism for which all human beings, of whatever culture or epoch, share the same world of nature. In our age of globalisation it thus provides a valuable alternative to the arbitrary perspectives of postmodernism or cultural relativism. While from the political point of view we are only beginning to develop a truly cosmopolitan approach, since the idea of a global order of right is still embryonic, from the epistemological point of view we already live in a shared inter-cultural and trans-cultural world. This is strikingly true in the case of physics and mathematics, which Kant regarded as strict sciences, but also of the sciences of chemistry, biology, and engineering, and even, along with a certain methodological pluralism, of the social and human sciences as well. It is true of course that some cultures are more receptive to these sciences than others. But the first *Critique* is not primarily interested in furthering the inter-cultural recognition of science, but in articulating its a priori grounds. In this regard we are all epistemic citizens of the world: called to know the world we share and also capable of doing so. In an analogous sense we are also already judicial citizens of the world, and thus called to a coexistence governed by principles of right, in both the synchronic sense of the existing world and the diachronic sense of the ongoing life of the generations, and capable of such a coexistence. In both domains, and in respect of both the calling and the fundamental capacity, we all possess the same shared and universally human faculty, in the first case that of theoretical reason and in the second that of practical reason.

But in the last analysis, the first *Critique* defends more than a restricted universalism which, if understood exclusively, is rightly charged with over-privileging human beings (with so-called 'speciesism'). Kant endorses a complete and comprehensive universalism: if other finite rational beings dependent on sensibility exist in other solar systems, they too are subject to the same epistemic demands as we are, and should we ever encounter such beings, they too would belong with us to a shared epistemic world republic. Thus, above all, the first *Critique* can claim a genuine cosmopolitan status since the elements and conditions which it has identified constitute the objective epistemic world common to all rational beings. In this respect philosophy can be said to exercise a governing role in the

epistemic republic, a role which also serves the common epistemic good since the authority of philosophy has now been clearly limited and defined.

Along with the possible coexistence of different kinds of rational beings, there is something else which is equally important: the coexistence, already mentioned, of different epistemic communities, i.e. those of the sciences of nature, of engineering, of the social and human sciences, and of their various subdivisions. But since the first *Critique* concentrates upon the strict sciences, pre-eminently upon mathematical physics and in a subsidiary sense upon mathematics in general, it can hardly be said to have addressed the task of clarifying the coexistence of the different sciences.

The world republic which arises from the shared character of reason does not simply content itself with the world of knowledge and the world of nature which is its object. In accordance with the three fundamental Kantian questions already discussed, it extends to three worlds. Thus the first *Critique* undertakes to justify a universalism of three dimensions: all finite rational beings, whatever the world they inhabit, are full and equal members of both the world of knowledge and the world of morality, and indeed, not least, of the world of justified hope. And, we may simply add in parenthesis, since the principle of right belongs to the second of these worlds, that of morality, the fulfilment of right in the political or cosmopolitan context as this is usually understood represents merely *one* perspective, the half of a third, a sixth therefore, of the full range of Kant's more comprehensive concept of world citizenship.

With respect to the question which now immediately arises, that concerning the order, or even hierarchy, at work within these three dimensions, Kant appeals to the idea of a final end which characterised the 'cosmical concept' of philosophy. The final end consists not in the completion or fulfilment of knowledge, but in morality, or in pure practical reason, and its unity with theoretical reason in the ideal of the highest good. In connecting its existential interest with the primacy of morality in this way, the first *Critique* thus becomes, as our general introduction originally suggested, a practical philosophy appropriate to the age of the natural sciences.

Since pure practical reason ultimately governs everything else, we might initially fear that theoretical reason is here subjected to an alien or external power, even to a kind of dictatorial rule. But morality does

not intervene in the legitimate domain of theoretical reason at all. The relevant 'Doctrine of Elements', including the third antinomy and the cosmological concept of freedom, is merely concerned with knowledge. Even the ideas retain their genuinely theoretical regulative significance. Likewise, the limitation of theoretical reason arises internally rather than externally since the limits in question are determined solely by appeal to theoretical arguments. Morality assumes a merely complementary governing role, and this itself is legitimated through the concepts of 'end' and 'system' which already belong to theoretical reason. Thus we encounter a kind of immanent extension here, a self-transcendence of theoretical in the direction of practical reason: within the single faculty of reason, its theoretical employment is ultimately compelled to pass over into its practical employment.

This immanent process of self-transcendence only strengthens and confirms the twofold intention already clearly expressed in both the A and B 'Prefaces': in the theoretical context reason is essentially motivated by the desire to remove contradictions, in the practical context by the desire to overcome materialism, fatalism and atheism. And this twofold intention is repeated at the end of the first *Critique*. The completion and fulfilment of theoretical reason in the 'system' which was demanded by Kant's cosmopolitan concept of philosophy derives from the theoretical interest in unity that is in turn supplemented and also exceeded by the practical interest in our human moral calling. And the true completion of the entire argument is only attained in the unity of practical and theoretical reason: in the ideal of the highest good.

Notes

1. In the first *Critique* Kant himself establishes no explicit connection with Pascal, even though there may be an indirect allusion to the latter in Kant's reference to the bet or wager as a touchstone of pragmatic belief (B 852f.). But Pascal does not seem to belong amongst the authors who are particularly highly valued by Kant. In his discussion of 'inner sense' in the *Anthropology* (Section 24) he speaks of the 'enthusiastic and terrifying' feelings of a mind like that of Pascal.
2. But the title 'Meditations' can still hardly be interpreted in terms of solipsism in a discourse-theoretical sense. It is intended rather to express the philosopher's anti-scholastic, anti-authoritarian, and quasi-biographical approach: Descartes describes his own intellectual path towards true knowledge, one which the reader is also encour-

aged to follow, even if that path is certainly presented in idealised form as an elaborate systematic argument in its own right.

3. Kant refers to Aristotle here, although he is actually quoting some lines of Heraclitus (B 89, Diels-Kranz 22).

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