

Routledge Studies in Eighteenth-Century Philosophy

KANT'S CRITICAL EPISTEMOLOGY

**WHY EPISTEMOLOGY MUST CONSIDER
JUDGMENT FIRST**

Kenneth R. Westphal



Kant's Critical Epistemology

This book assesses and defends Kant's Critical epistemology, and the rich yet neglected resources it provides for understanding and resolving fundamental issues regarding human experience, perceptual judgment, empirical knowledge and cognitive sciences.

Kenneth Westphal first examines Kant's methods and strategies for examining human sensory-perceptual experience and then examines Kant's central, proper and subtle attention to judgment, as well as the valid use of concepts and principles to judge the particulars we confront. This provides a comprehensive account of Kant's anti-Cartesianism, the integrity of his three principles of causal judgment, and Kant's account of discriminatory perceptual-motor behaviour, including both sensory re-ference and perceptual affordances. Westphal then defends the significance of Kant's subtle and illuminating account of causal judgment for three main philosophical domains: history and philosophy of science, theory of action and human freedom, and philosophy of mind.

Kant's Critical Epistemology will appeal to researchers and advanced students interested in Kant and the relations of his thought to contemporary philosophical debates and to the sciences of the mind.

Kenneth R. Westphal is Professor of Philosophy at Boğaziçi University, İstanbul. He has edited eight books and authored eight monographs, including *Hegel's Civic Republicanism: Integrating Natural Law with Kant's Moral Constructivism* (Routledge, 2020) and *Realism, Science, and Pragmatism* (Routledge, 2014).

Routledge Studies in Eighteenth-Century Philosophy

Hume's Moral Philosophy and Contemporary Psychology

Edited by Philip A. Reed and Rico Vitz

Kant and the Problem of Self-Knowledge

Luca Forgione

Kant on Intuition

Western and Asian Perspectives on Transcendental Idealism

Edited by Stephen R. Palmquist

Hume on Art, Emotions, and Superstition

A Critical Study of the *Four Dissertations*

Amyas Merivale

A Guide to Kant's Psychologism

via Locke, Berkeley, Hume, and Wittgenstein

Wayne Waxman

Kant and the Continental Tradition

Sensibility, Nature, and Religion

Edited by Sorin Baiasu and Alberto Vanzo

Beyond Autonomy in Eighteenth-Century British and German Aesthetics

Edited by Karl Axelsson, Camilla Flodin, and Mattias Pirholt

Kant's Critical Epistemology

Why Epistemology Must Consider Judgment First

Kenneth R. Westphal

For more information about this series, please visit: www.routledge.com/Routledge-Studies-in-Eighteenth-Century-Philosophy/book-series/SE0391

Kant's Critical Epistemology

Why Epistemology Must Consider Judgment First

Kenneth R. Westphal

First published 2021
by Routledge
52 Vanderbilt Avenue, New York, NY 10017

and by Routledge
2 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN

*Routledge is an imprint of the Taylor & Francis Group, an
informa business*

© 2021 Kenneth R. Westphal

The right of Kenneth R. Westphal to be identified as author
of this work has been asserted by him in accordance with
sections 77 and 78 of the Copyright, Designs and Patents Act
1988.

All rights reserved. No part of this book may be reprinted
or reproduced or utilised in any form or by any electronic,
mechanical, or other means, now known or hereafter invented,
including photocopying and recording, or in any information
storage or retrieval system, without permission in writing from
the publishers.

Trademark notice: Product or corporate names may be
trademarks or registered trademarks, and are used only for
identification and explanation without intent to infringe.

Library of Congress Cataloging-in-Publication Data

Names: Westphal, Kenneth R., author.

Title: Kant's critical epistemology : why epistemology must
consider judgment first / Kenneth R. Westphal.

Description: New York and London : Routledge, 2020. | Series:
Routledge studies in eighteenth-century philosophy | Includes
bibliographical references and index.

Identifiers: LCCN 2020015619 (print) | LCCN 2020015620
(ebook) | ISBN 9780367534332 (hardback) | ISBN
9781003082361 (ebook)

Subjects: LCSH: Kant, Immanuel, 1724–1804. | Knowledge,
Theory of. | Judgment.

Classification: LCC B2798 .W633 2020 (print) | LCC B2798
(ebook) | DDC 121.092—dc23

LC record available at <https://lccn.loc.gov/2020015619>

LC ebook record available at <https://lccn.loc.gov/2020015620>

ISBN: 978-0-367-53433-2 (hbk)

ISBN: 978-1-003-08236-1 (ebk)

Typeset in Sabon
by Apex CoVantage, LLC

For Michael Wolff,

in gratitude, friendship and admiration



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

Contents

<i>Foreword</i>	ix
<i>Acknowledgements</i>	xi
<i>Analytical Contents</i>	xiii
<i>Sources and Citation Methods</i>	xix
Introduction	1
PART I	
Epistemological Context	15
1 Thought Experiments, Epistemology and Our Cognitive (In)Capacities	17
2 Kant, Wittgenstein and Transcendental Chaos	43
3 Kant's <i>Critique of Pure Reason</i> and Analytic Philosophy	62
PART II	
Kant's Critical Epistemology	101
4 Constructing Kant's <i>Critique of Pure Reason</i>	103
5 Human Consciousness and Its Transcendental Conditions: Kant's Anti-Cartesian Revolt	134
6 Kant's Analytic of Principles	153
7 Kant's Dynamical Principles: The Analogies of Experience	171
8 How Does Kant Prove We Perceive, Not Merely Imagine, Physical Objects?	183

9 Kant, Causal Judgment and Locating the Purloined Letter	231
PART III	
Further Ramifications	251
10 Kant's Cognitive Semantics, Newton's Rule 4 of Experimental Philosophy and Scientific Realism Today	253
11 How Kant Justifies Freedom of Agency (<i>Without</i> Transcendental Idealism)	288
12 Kant's Two Models of Human Actions	302
13 Mind, Language and Behaviour: Kant's Critical Cautions <i>Contra</i> Contemporary Internalism and Naturalism	312
<i>Bibliography</i>	335
<i>Name Index</i>	362
<i>Subject Index</i>	364

Foreword

Ken Westphal's *opus majus* on Kant's Critical epistemology is the fruit of very concerted studies and research over more than 40 years. His book is impressive for the amount of work condensed in it, for the quantity and quality of the historical and theoretical knowledge it exhibits (well testified by the notes, apparatus and related bibliography), for the accuracy with which it develops its central theses and for its exemplary integration of both historical and theoretical issues and resources. In brief, it is a good example of scholarship conjoining historical sensitivity, textual scruple and theoretical engagement. The theoretical components never compromise the accuracy or understanding of the historical components. Very skillfully, he shows that accurate historical understanding of some fundamental aspects of Kant's thought – Tetens' heritage, the criticism of global perceptual scepticism, cognitive semantics, the reconstruction of the transcendental deduction of the categories and analytic principles of understanding, just to mention some core aspects of his book – has utmost importance for addressing and solving many problems widely discussed in current analytic philosophy and philosophy of science. All the theoretical ramifications of his examination are well developed and rich in further ramifications; serious philosophical discussion should grapple with them. Westphal's new book is paradigmatic of how philosophy should and can succeed by combining historic-philosophical knowledge and theoretical developments. Quite germane is his methodological observation, that a good interpreter must be able to transcend the text s/he reads, and if necessary, must be able to correct the author (§64), by thinking through yet again those phenomena, issues, resources, problems and options examined by that author, to learn what can best be learned from that author's examination, analysis, argument, evidence, conclusions, their insights and shortcomings. His book is a decisive step towards complete and proper philosophical assimilation of Kant's Critical thought. As he recalls (§14), in 1966 Strawson observed that Kant's central epistemological insights "are very great and novel gains in epistemology, so great and so novel that, nearly two hundred years after they were made, they have still not been fully absorbed into the philosophical consciousness." Any careful

reader, whatever may be his or her epistemological views, will find Westphal's book contributing fundamentally to rectifying the situation revealed by Strawson, which has improved little since. Westphal succeeds in showing "epistemologists how and why to change their method of thinking about human knowledge, in order to make much better sense of what we can and do know, by appreciating Kant's Critical resources for our shared epistemological issues and concerns" (§18). If much of Westphal's investigation is not merely distinctive, but heterodox, against the grain of much contemporary discussion, he adroitly raises the issue central to Kant, now familiar from Frege's critique of psychologism, as it pertains to 'influence': successfully influencing a discussion does not, of itself, suffice to show that such success is warranted or justified. Westphal has the temerity to observe, justly and frankly, that "'Influence' is no measure of philosophical calibre" (§59.3). Westphal's book investigates and deeply invests in, not only epistemology and Kant's Critical epistemology, but also conditions current in today's philosophical discourse and its various agendas.

— Paolo Parrini (*Florence*)

Acknowledgements

I wish to express my gratitude to my teachers (formal or informal) who so ably introduced me to these issues in epistemology, history and philosophy of science and Kant's theory of knowledge: Bill Alston, Manfred Baum, Graham Bird, Martin Carrier, Konrad Cramer, Fred Dretske, Robert Greenberg, Paul Guyer, Bill Harper, Robert Howell, Ron Laymon, Arthur Melnick, Onora O'Neill, Tom Nickles, Fred Will, Michael Wolff and Keith Yandell. They are mentioned merely alphabetically; several taught me Kant and his methodology (and much else) by their exemplary writings. Paolo Parrini's generous foreword is, to me, a profound honour, for which I am very grateful indeed – also for very helpful and stimulating discussions of our shared interests in epistemology and history and philosophy of science (HPS).

Parts of the present research were supported by a period as a Visiting Scholar, kindly hosted by Bernd Ludwig in Göttingen, in the first half of 2011, part of which was generously supported financially by the Alexander von Humboldt Stiftung; by Martin Carrier's kind and generous invitation to conduct research in Bielefeld as a Leibniz Gastwissenschaftler (2012–13) and since 2015 by the Boğaziçi Üniversitesi Research Fund (BAP; project codes: 15B02P2, 18B02P3).

Original Publication Details. Articles revised and incorporated here first appeared in the journals or volumes indicated below. I am grateful to each of the editors, journals, publishers and their anonymous readers for so encouraging and supporting my research, and for kind permission to revise and further develop these materials here.

'Kant, Wittgenstein and Transcendental Chaos'. *Philosophical Investigations* 28.4 (2005):303–323.

'How does Kant Prove that We Perceive, and not merely Imagine, Physical Objects?' *The Review of Metaphysics* 59.4 (2006):781–806.

'Consciousness and its Transcendental Conditions: Kant's Anti-Cartesian Revolt'. In: S. Heinämaa, V. Lähteenmäki & P. Remes, eds., *Consciousness: From Perception to Reflection in the History of Philosophy* (Dordrecht: Springer, 2007), 223–243.

- 'Kant's *Critique of Pure Reason* and Analytic Philosophy'. In: P. Guyer, ed., *Cambridge Companion to Kant's Critique of Pure Reason* (Cambridge: Cambridge University Press, 2010), 401–430.
- 'Kant's Cognitive Semantics, Newton's Rule Four of Natural Philosophy and Scientific Realism Today'. In: *Kant and Contemporary Theory of Knowledge, Kant Yearbook 5* (2013):127–168.
- 'Mind, Language and Behaviour: Kant's Critical Cautions *contra* Contemporary Internalism and Causal Naturalism'. In: S. Babür, ed., *Felsefede Yöntem/ Method in Philosophy*, special issue of *Yeditepe'de Felsefe/Philosophy at Yeditepe 10* (İstanbul: Yeditepe Üniversitesi Press, 2016), 102–149.
- 'Kant, Causal Judgment and Locating the Purloined Letter'. In: S. Miguens & P. Tunhas, guest eds., 'Kant in Current Philosophy of Mind and Epistemology', *Con-Textos Kantianos 6* (2017):42–78.
- 'Kant's Dynamical Principles: The Analogies of Experience'. In: J. O'Shea, ed., *Kant's Critique of Pure Reason: A Critical Guide* (Cambridge: Cambridge University Press, 2017), 184–204.
- 'How Kant Justifies Freedom of Agency *without* Transcendental Idealism'. *European Journal of Philosophy 25.4* (2017):1695–1717.
- 'Epistemology, Cognitive (In)Capacities and Thought Experiments'. In: M.T. Stuart, J.R. Brown & Y. Fehige, eds., *The Routledge Companion to Thought Experiments* (New York & London: Routledge, 2018), 128–149.
- 'Kant's Two Models of Human Action'. In: 'Contemporary Ethics and Politics: Kantian Resonances', special issue of *Revista Portuguesa de Filosofia 75.1* (2019):1–17.
- 'Kant's Analytic of Principles'. In: M. Timmons & S. Baiasu, eds., *Kant* (London: Routledge, 2020), ch. 8.

Analytical Contents

<i>Foreword</i>	ix
<i>Acknowledgements</i>	xi
<i>Analytical Contents</i>	xiii
<i>Sources and Citation Methods</i>	xix
Introduction	1
PART I	
Epistemological Context	15
1. Thought Experiments, Epistemology and Our Cognitive (In)Capacities	17
1. <i>Introduction</i>	17
2. <i>Some Critical Cautions and a Role for Thought Experiments</i>	18
2.1. <i>Conceivability, Infallibilism and Philosophical Cogency</i>	18
2.2. <i>Naturalised Epistemology and Causal Reliability ‘Theories’</i>	23
2.3. <i>Conceptual Content, Linguistic Meaning and Specifically Cognitive Reference</i>	25
2.4. <i>Identifying and Exploiting Our Cognitive Dependencies</i>	28
3. <i>Hegel on the Semantics of Singular Cognitive Reference</i>	30
4. <i>Kant on the ‘Transcendental Affinity’ of the Sensory Manifold</i>	35
5. <i>Wittgenstein on Thought and Pervasive Regularities of Nature</i>	38
6. <i>Conclusions</i>	42

2. Kant, Wittgenstein and Transcendental Chaos	43
7. <i>Introduction</i>	43
8. <i>Realism Without Empiricism?</i>	43
9. <i>Kantian Convergence?</i>	54
10. <i>Transcendental Affinity vs. Transcendental Idealism</i>	58
11. <i>Conditional Transcendental Necessity of (Critical) Realism</i>	60
3. Kant's Critique of Pure Reason and Analytic Philosophy	62
12. <i>Introduction</i>	62
13. <i>C.I. Lewis, Mind and the World Order</i>	63
14. <i>P.F. Strawson, The Bounds of Sense</i>	72
15. <i>Wilfrid Sellars, Science and Metaphysics: Variations on Kantian Themes</i>	79
16. <i>Does McDowell Have Our Perceptual Knowledge in View?</i>	88
17. <i>Greenberg's Reconstruction of Kant's Account of Modality</i>	93
18. <i>Conclusion</i>	97
PART II	
Kant's Critical Epistemology	101
4. Constructing Kant's Critique of Pure Reason	103
19. <i>Introduction</i>	103
20. <i>Kant's Initial Clues</i>	105
20.1. <i>Tetens's Keen Deictic Point</i>	105
20.2. <i>Philosophical Reflections on Sub-Personal Cognitive Processes?</i>	106
21. <i>Concepts A Priori?</i>	107
22. <i>Sensory Binding Problems – i.e.: Forms of Perceptual Synthesis</i>	109
23. <i>Aristotle's Logic: Complete and Ever so Useful</i>	110
23.1. <i>The Square of Categorical Oppositions</i>	111
23.2. <i>Cognitive Use: Taxa and Classification</i>	111
24. <i>Formal Aspects of Judging</i>	111
25. <i>From Aspects of Judging to Judging Particulars: 12 Categorical Concepts, Plus Two: The Concepts of 'Space' and 'Time'</i>	113
26. <i>Kant's Semantics of Singular, Specifically Cognitive Reference</i>	115
26.1. <i>Knowing Particulars</i>	115

26.2.	<i>Kant's Thesis of Singular Cognitive Reference</i>	119
26.3.	<i>The Implications of Kant's Thesis for Knowledge and Epistemology</i>	119
26.4.	<i>Equivocating About 'Definite Descriptions'</i>	121
27.	<i>Kant's Constructive Strategy in the Critique of Pure Reason</i>	122
27.1.	<i>Kant's Methodological Constructivism</i>	122
27.2.	<i>The Constructivist Strategy</i>	122
27.3.	<i>The Two-Fold Use of the Categories: Sub-Personal Perceptual Synthesis, Explicit Judgments</i>	123
27.4.	<i>Kant's Lead Question, Re-stated</i>	123
27.5.	<i>Kant's most Basic Inventory</i>	124
27.6.	<i>Kant's Constructive Epistemological (Transcendental) Question</i>	124
27.7.	<i>Answering That Question Requires Addressing these Five Issues</i>	124
28.	<i>The Structure of Kant's Critique of Pure Reason</i>	125
29.	<i>A Brief Concluding Word</i>	130
30.	<i>Kant's Inventory of Basic Formal Features of Our Cognitive Capacities</i>	132
5.	Human Consciousness and Its Transcendental Conditions: Kant's Anti-Cartesian Revolt	134
31.	<i>Introduction</i>	134
32.	<i>The Modern 'New Way of Ideas'</i>	135
33.	<i>Kant's Transcendental Grounds for Rejecting Cartesianism</i>	139
33.1.	<i>Kant's Lead Question</i>	139
33.2.	<i>A Priori Concepts</i>	140
33.3.	<i>The Binding Problem</i>	141
33.4.	<i>Kant's Critique of Global Perceptual Scepticism</i>	143
33.5.	<i>Kant's Refutation of Global Perceptual Scepticism</i>	145
33.6.	<i>Causal Judgments are Discriminatory</i>	147
33.7.	<i>Rational Freedom</i>	149
34.	<i>Conclusion</i>	151
6.	Kant's Analytic of Principles	153
35.	<i>Kant's Critique of Justifiable Cognitive Judgment</i>	153

- 36. *Kant's Transcendental Critique of Judgment* 156
- 37. *Kant's Principles of Cognitive Judgment* 156
- 38. *Kant's Analogies of Experience* 157
- 39. *The Postulates of Empirical Thinking* 161
- 40. *Kant's Refutation of Idealism* 164
- 41. *Kant's Critical Grounds for Distinguishing
Phenomena and Noumena* 165
- 42. *Some Critical Observations* 166
- 43. *Diagram of Kant's Cognitive Architecture* 169

- 7. **Kant's Dynamical Principles: The Analogies of Experience** 171
 - 44. *Introduction* 171
 - 45. *Kant's Causal Principles in the Analogies of
Experience* 173
 - 46. *Kant's Justification of our Legitimate Use of These
Three Principles of Causal Judgment: A Summary
Statement* 175
 - 47. *Some Characteristic Responses* 179

- 8. **How Does Kant Prove We Perceive, Not Merely
Imagine, Physical Objects?** 183
 - 48. *Introduction* 183
 - 49. *Kant's Transcendental Focus: Epistemology for
Homo sapiens sapiens* 184
 - 50. *The Spatio-Temporality of Human Experience and
Singular Cognitive Reference* 185
 - 51. *Two Transcendental Proofs of Mental Content
Externalism* 186
 - 52. *Kant's Paralogisms Proscribe Causal Judgments
About Merely Temporal Phenomena* 189
 - 53. *Causal Judgments Are Restricted to Spatio-Temporal
Substances* 190
 - 54. *The Transcendental Character of Kant's Proofs* 194
 - 55. *Realising Kant's Semantics of Singular Cognitive
Reference* 197
 - 56. *Perceptual Synthesis and Objective Reference* 199
 - 57. *Kant, Critical Commonsense Realism and Sensory
Re-Afference* 202
 - 57.1. *Sensory Re-Afference* 202
 - 57.2. *Some Key Aspects of Sensory Perception,
Integration and Behaviour* 204
 - 58. *Kant's Justificatory Fallibilism Concedes Nothing to
Scepticism* 217

59.	<i>Corroboration by Critical Comparisons: Melnick, Sellars, McDowell</i>	219
	59.1. <i>Melnick</i>	219
	59.2. <i>Sellars</i>	220
	59.3. <i>McDowell</i>	222
60.	<i>Conclusions</i>	226
61.	<i>PS: Scientia and 'the' Analytic/Synthetic Distinction</i>	228
9.	Kant, Causal Judgment and Locating the Purloined Letter	231
	62. <i>Introduction</i>	231
	63. <i>The Irrelevance of Infallibilism to Non-Formal Domains</i>	233
	64. <i>Critical Philosophy and Philosophical Self-Criticism</i>	235
	64.1. <i>Kant's Analytic Commentators</i>	235
	64.2. <i>Kant's Phenomenological Commentators</i>	242
	65. <i>Philosophical Specialisation and Philosophical Oversight</i>	246
PART III		
	Further Ramifications	251
10.	Kant's Cognitive Semantics, Newton's Rule 4 of Experimental Philosophy and Scientific Realism Today	253
	66. <i>Introduction</i>	253
	67. <i>Newton's Rule 4 and His Causal Realism</i>	253
	68. <i>Kant's Semantics of Singular Cognitive Reference</i>	261
	69. <i>Kant's Cognitive Semantics, Newton's Rule 4 and Anti-Cartesianism</i>	267
	70. <i>Kant's Cognitive Semantics Versus van Fraassen's Constructive Empiricism</i>	272
	71. <i>To What Extent Is Constructive Empiricism 'empirically' Adequate?</i>	276
	72. <i>Newton's Mechanics: Dynamics or Kinematics?</i>	279
	73. <i>A Glimpse at the Semantics of Scientific Theories</i>	283
	74. <i>Conclusion</i>	285
11.	How Kant Justifies Freedom of Agency (<i>Without Transcendental Idealism</i>)	288
	75. <i>Introduction</i>	288
	76. <i>The Principle of Sufficient Reason: Regulative or Constitutive?</i>	290

77. <i>Kant's Semantics of Singular Cognitive Reference</i>	292
78. <i>Kant's Cognitive Semantics and Causal Knowledge</i>	294
79. <i>Freedom of Behaviour</i>	295
80. <i>Regulating our Cognitive Commitments</i>	299
12. Kant's Two Models of Human Actions	302
81. <i>Introduction</i>	302
82. <i>What Is Free Action, According to Kant?</i>	302
83. <i>Practical Judgments, Incentives and Influences</i>	304
84. <i>Conclusions</i>	310
13. Mind, Language and Behaviour: Kant's Critical Cautions	
Contra Contemporary Internalism and Naturalism	312
85. <i>Introduction</i>	312
86. <i>Kant's Key Critical Findings</i>	313
86.1. <i>A Recap</i>	313
86.2. <i>The Critical Distinctiveness of Epistemology</i>	314
86.3. <i>Kant's Analysis of the Autonomy of Our Power of Judgment Suffices to Justify Our Rational Freedom of Deliberation and Judgment, Regardless of the Causal Structure and Functioning of Our Neurophysiology</i>	315
87. <i>Causal 'Theories' and Causal Knowledge</i>	317
87.1. <i>Davidson</i>	317
87.2. <i>Burkholder</i>	318
87.3. <i>McCarty</i>	319
88. <i>Concept Empiricism Redux?</i>	322
89. <i>Contra Contemporary Anti-Naturalism in Philosophy of Mind</i>	325
89.1. <i>Philosophy or Science Fiction?</i>	325
89.2. <i>The Central Pillar of Strong Internalism</i>	327
90. <i>Regulating our Cognitive Commitments</i>	330
91. <i>Some Final Reflections</i>	331
<i>Bibliography</i>	335
<i>Name Index</i>	362
<i>Subject Index</i>	364

Sources and Citation Methods

I use mixed methods to provide short, clear citations. Collected editions of primary sources are cited by short abbreviations, given below. Kant's works are cited by the initials of their German titles. In general, volume numbers precede a colon, page numbers follow the colon; when needed line numbers follow a page number after a decimal point. I only use the abbreviations for the critical editions of Kant's (*GS*) works where necessary to avoid ambiguity. On occasion, where a single 'volume' is divided into separately bound parts, the number of the part follows the number of the volume after a decimal point; this is also done for journal volume and issue numbers (*e.g.*, 2.1:289.14–28). Secondary literature is cited by author (date, p.), with full publication information given in the Bibliography. For first editions or reprints I use the original date of publication; for later editions I use the date of the edition used. All reliable translations include the pagination of *Œuvres de Descartes* (AT) or of Kant's *Gesammelte Schriften*. I have also consulted the various editions of Kant's works in Meiner's Philosophische Bibliothek series, and excellent electronic editions issued by the Intellex Corporation (Charlottesville) in their 'Past Masters' series and by Karsten Worm, InfoSoftware (Berlin). Translations are my own unless otherwise indicated. These abbreviations and symbols are used:

'App.': 'Appendix'. 'ch.', 'chs.': 'chapter(s)'. 'n.', 'nn.': 'note(s)'.
'Pr': preface.
'§', '§§': section(s). 'Bk', 'Bks': 'Book(s)'. –so enumerated by a work's author.
'¶', '¶¶': paragraph(s). –so enumerated by an editor, translator or reader, myself included.

Primary Sources, Chronologically Listed

Sextus Empiricus

- Opera* *Sexti Empirici Opera*, H. Mutschmann, J. Mau & K. Janáček, eds., 3 vols. Leipzig: Teubner, 1912, 1954; cited by Bk:¶.
- Works* *Works*, 4 vols. Rev. R.G. Bury, tr. (Greek + English) Cambridge, Harvard University Press, 1933.
- PH* *Outlines of Pyrrhonism; Opera 1, Works 1.*

Descartes

- AT* *Œuvres de Descartes*, 13 vols., rev. ed., C. Adam & P. Tannery, eds. Paris: Vrin/C.N.R.S., 1964–.
- The Philosophical Writings of Descartes*, 3 vols., J. Cottingham, R. Stoothoff, D. Murdoch & A. Kenney, trs. Cambridge: Cambridge University Press, 1984, 1991. (Provides vol.:p. references to AT.)
- Œuvres complètes de René Descartes*, A. Gombay, et al., eds.; Connaught Descartes Project, University of Toronto. Charlottesville, Va: InteLex Corp, 2001. (Provides vol.:p. references to AT.)

Locke

- Es* *An Essay concerning Human Understanding*, P.H. Nidditch, ed. Oxford: The Clarendon Press, 1975; cited by bk.ch.§.¶.

Berkeley

- Works* *The Works of George Berkeley, Bishop of Cloyne*, 9 vols. A.A. Luce & T.E. Jessop, eds. Edinburgh, London, Melbourne: Nelson, 1949–1957.
- Prin.* *A Treatise Concerning the Principles of Human Knowledge* (1710, 1734), in: *Works* 2:1–113.

Leibniz

- GP* *Die philosophischen Schriften von Gottfried Wilhelm Leibniz*, 7 vols. C.J. Gerhardt, ed. Berlin, 1882; rpt. Darmstadt: Olms, 1978.
- NE* *Nouveaux Essais sur L'entendement humain* (1704), GP 5; cited by bk.ch.§.
- New Essays on Human Understanding*, P. Remnant & J. Bennett, eds. & trs. Cambridge: Cambridge University Press, 1996.

Hume

- En* *An Enquiry Concerning Human Understanding*, T. Beauchamp, ed. Oxford: Oxford University Press, 1999; cited by bk.ch.§.¶.
- T* *A Treatise of Human Nature*, rev. ed., D.F. Norton & M.J. Norton, eds. Oxford: Oxford University Press, 2001; cited by bk.ch.§.¶.

Kant

- GS *Kants Gesammelte Schriften*, 29 vols. Königlich Preußische (now Deutsche) Akademie der Wissenschaften. Berlin: G. Reimer, now De Gruyter, 1902–.
The Cambridge Edition of the Works of Immanuel Kant in Translation, 18 vols. P. Guyer & A. Wood, eds.-in-chief. New York: Cambridge University Press, 1992–2016. (Provides pagination of GS.)
- KdrV *Kritik der reinen Vernunft*, 1st ed., 1781 ('A'), GS 4; 2nd rev. ed., 1787 ('B'), GS 3.¹
The Critique of Pure Reason, P. Guyer & A. Wood, trs. & eds. Cambridge: Cambridge University Press, 1998.
- ProI. *Prolegomena zu einer jeden künftigen Metaphysik, die als Wissenschaftlich wird auftreten können.* (1783), GS 4.
Prolegomena to any Future Metaphysics that will be able to Present itself as Science, G. Zöllner, ed., P.G. Lucas & G. Zöllner, trs. Oxford: Oxford University Press, 2004.
- MAdN *Metaphysische Anfangsgründe der Naturwissenschaft.* (1786), GS 4.
Metaphysical Foundations of Natural Science, M. Friedman, ed. & tr. Oxford: Oxford University Press, 2004.
- KdpV *Kritik der praktischen Vernunft* (1788), GS 5.
Critique of Practical Reason, M.J. Gregor, tr. In: M.J. Gregor, ed. & tr., I. Kant, *Practical Philosophy* (Cambridge: Cambridge University Press, 1996), 133–271.
- KdU *Kritik der Urteilskraft* (1790), GS 5.
Critique of the Power of Judgment, P. Guyer, tr. Cambridge: Cambridge University Press, 2000.
- MdS *Metaphysik der Sitten* (1797), GS 6.
Metaphysics of Morals, M. Gregor, tr. Cambridge: Cambridge University Press, 1991. (Retains correct editing of Pt 1, *RL*.)

Bertrand RUSSELL

- CP *The Collected Papers of Bertrand Russell*, 29 vols. J. Passmore, gen. ed. London: Routledge, 1994.

C.I. LEWIS

- MWO *Mind and the World Order.* New York: Charles Scribner's Sons, 1929; rpt. with corrections, New York: Dover, 1956.

1. As this book is centrally on Kant's *KdrV*, which alone is designated using 'A' or 'B' pagination, '*KdrV*' is only indicated in parenthetical references when needed to avoid ambiguity. Where passages appearing in both editions are cited, the A edition pages are listed first/the B edition pages follow. Both measures reduce visual clutter.

Ludwig WITTGENSTEIN

- PI *Philosophical Investigations*, 4th ed. P.M.S. Hacker & J. Schulte, eds.; G.E.M. Anscombe, P.M.S. Hacker & J. Schulte, trs. London, Wiley-Blackwell, 2009.
- OC *On Certainty*. G.E.M. Anscombe & G.H. von Wright, eds.; D. Paul & G.E.M. Anscombe, trs. Oxford, Basil Blackwell, 1969.
- RFM *Remarks on the Foundations of Mathematics*, 2nd rev. ed. G.H. von Wright, R. Rhees & G.E.M. Anscombe, eds., G.E.M. Anscombe, tr. Cambridge, Mass.: M.I.T. Press, 1978.

Sir Peter F. STRAWSON

- BoS *The Bounds of Sense*. London: Methuen, 1966.

Wilfrid SELLARS

- SPR *Science, Perception and Reality*. London: Routledge & Kegan Paul, 1963; rpt. Atascadero, Cal.: Ridgeview Publishing Co., 1991, 2011.
- SM *Science and Metaphysics: Variations on Kantian Themes*. London: Routledge & Kegan Paul, 1978; rpt. Atascadero, Cal.: Ridgeview Publishing Co., 1992; cited by ch.¶.
- KTM *Kant's Transcendental Metaphysics: Sellars' Cassirer Lectures and Other Essays*. J.F. Sicha, ed. Atascadero, Cal.: Ridgeview Publishing Co., 2002.
- ISR *In the Space of Reasons: Selected Essays of Wilfrid Sellars*. K. Sharp & R. Brandom, eds. Cambridge, Mass.: Harvard University Press, 2007.
- EPM 'Empiricism and the Philosophy of Mind' (1956), rpt. in: SPR; cited by ¶, [§]. (In the 2011 edition of SPR, consecutive numbers are assigned to each ¶; for those using the original edition, Sellars' own § numbers are also cited in square brackets.)
- IKTE 'The Role of Imagination in Kant's Theory of Experience', the Dotterer Lecture (1978). In: H.W. Johnstone, Jr., ed., *Categories: A Colloquium* (College Station, PA, Pennsylvania State University), 231–245; rpt. in: KTM, 438–449; ISR, 454–466; cited by ¶.

Frederick DRETSKE

- SK *Seeing and Knowing*. London: Routledge & Kegan Paul, 1969.
- KFI *Knowledge and the Flow of Information*. Cambridge, Mass.: MIT/Bradford Books, 1981.
- NM *Naturalizing the Mind*. Cambridge, Mass.: MIT Press, 1995.

John McDOWELL

- M&W *Mind and World*. Cambridge, Mass.: Harvard University Press, 1994; rpt. with new Introduction, 1996.

- HWV 'Having the World in View' (1998). *Journal of Philosophy* 95:431–491; rpt. in: *idem.* (2009), *Having The World in View* (Cambridge, Mass., Harvard University Press), pt I (3–65).

Bas VAN FRAASSEN

SI *The Scientific Image*. Oxford: The Clarendon Press, 1980.

ES *The Empirical Stance*. New Haven: Yale University Press, 2002.

Other Literature

- KTPR Westphal, Kenneth R., *Kant's Transcendental Proof of Realism*. Cambridge: Cambridge University Press, 2004.



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

Introduction

Wo Zusammengesetztheit ist, da ist Argument und Funktion, und wo diese sind, sind bereits alle logischen Konstanten. – Wittgenstein, *Tractatus* §5.47¹

This is not a study of ‘transcendental arguments’. I do argue that epistemology must consider judgment first, not only because ‘knowledge’ cannot be exhaustively analysed into three necessary, jointly sufficient sub-concepts, ‘belief’, ‘truth’ and ‘justification’. These concepts do identify crucial aspects of cognition which epistemology must consider – rather more carefully than they are in much current ‘post-Gettier’ epistemology, including Timothy Williamson’s ‘knowledge first’ approach. To highlight the central importance of Kant’s account of cognitive judgment to epistemology, PART 1 reviews concisely some main themes in recent epistemology, in part to highlight both insights and deficits which deserve more careful reconsideration than they currently receive, and to show how Kant’s Critical epistemology pertains also to contemporary epistemology. PART 2 then examines, assesses and defends Kant’s Critical epistemology, and the rich yet neglected resources it provides for understanding and resolving fundamental issues regarding human experience, perceptual judgment and empirical knowledge – including causal realism – which were obscured by preoccupation with so-called ‘transcendental arguments’. Such arguments focus on concept-possession and proceed by pure conceptual analysis. Kant recognised that conceptual analysis is insufficient for resolving substantive philosophical perplexities, that instead we must use partial (incomplete) yet discerning conceptual explication (A727–30/B755–8) and examine our capacities for using key concepts and principles in actual cognitive judgments about actual

1. ‘Wherever there is compositeness, argument and function are present, and where these are present, so are already all the logical constants’. (All translations from German are my own unless otherwise indicated.)

spatio-temporal particulars we can (and often enough do) sense, perceive, experience, recognise, identify and know – however commonsensical or precise our knowledge may be, and whatever may be the kind or scale of the spatio-temporal objects, events, persons, structures or processes of which we may gain cognisance. Kant’s epistemological investigations centrally concern the possible *validity* of our cognitive judgments. To identify which issues of validity must be addressed, he very subtly dissects and reconstructs issues about our sensory-perceptual cognitive functions, to identify how and why self-conscious human perceptual experience – even if merely apparent – is a *result* and indeed a (proto-)cognitive *achievement*, only possible for us very finite, embodied cognisers on the basis of a host of sub-personal cognitive functions working effectively (if fallibly) outside the scope of self-conscious ‘access internalism’.

This much of Kant’s strategic aims may be familiar, generally speaking, but exactly how and how well he executes these investigations has not been sufficiently detailed or assessed previously. Kant’s ‘transcendental’ proofs aim to identify and to justify important claims about conditions which must be satisfied if we *homo sapiens* are actually to become and to be *sapientes* – cognisant, self-aware beings who can sort even apparent sequences of apparent events appearing to us to occur before, during or after others. Remarkably, Kant’s proofs do not require transcendental idealism; instead, some of his most important analyses and proofs directly undermine his own key arguments for that idealism.² Much more important is how Kant re-examines phenomena of human sensory-perceptual experience so as to establish why and how this apparently innocuous premiss about sorting even apparent sequences of sensory appearances is the key phenomenon on which to focus (cited in the premiss of his Refutation of Idealism; B275), and why and how this key premiss, once properly understood and appreciated, is the proper and sufficient premiss by which to prove mental content, semantic and justificatory *externalisms*, and to justify Critical commonsense realism about (some) molar particulars we perceive in our environs. Kant’s investigation and proof are expressly *regressive*, seeking to identify specific, philosophically salient grounds which make possible an acknowledged phenomenon (which may be cited in a premiss, as at B275). To understand and appreciate why and how Kant focuses on this apparently innocuous phenomenon (sorting merely apparent sequences of sensory appearances), and then why and how Kant identifies fundamental *externalist* factors which make this phenomenon possible for us at all by fulfilling (satisfying) a host of specific *formal* constraints (conceptual, sensory and *also* (N.B.) material), requires that the present study, too, be regressive: beginning with what is more familiar to contemporary readers, and working towards

2. This is a main theme in *KTPR*; here I merely indicate the key points when relevant.

identifying, understanding and appreciating Kant's truly profound anti-Cartesian revolt.

Accordingly, the first several chapters of this book are devoted to examining, understanding and in the main defending Kant's methods and strategies for identifying and explicating this key phenomenon (chs. 1–5). I then sketch Kant's very subtle and distinctive proof strategy twice, first very concisely (ch. 6), then in greater detail (ch. 7), before providing a detailed statement and defence of Kant's main line of sound philosophical proof (ch. 8). Kant's methods and strategies require this care because they are so easily mis-understood by common philosophical pre-occupations. One such is neglect of Kant's central, proper and subtle attention to *judgment*, and so to the humanly possible valid *use* of concepts and principles to judge particulars we confront; not merely to re-analyse their content, meaning, intension or possession. Several related pre-occupations and their shortcomings are identified throughout; their central theme is Cartesianism, and Kant's profound and far-reaching anti-Cartesianism, which has not yet been fully appreciated – hence neither has it been fully or properly assessed. One case study of such mis-readings and consequent mis-understandings is presented (ch. 9) by detailing how and why the integrity of Kant's three principles of causal judgment in the 'Analogies of Experience' – these three causal principles can only be used conjointly, because causal judgment is discriminatory – has been neglected, though it was identified and detailed by Paul Guyer (1987).

PART 3 then examines and defends the significance of Kant's subtle and illuminating account of causal judgment for three main philosophical domains: history and philosophy of science, theory of action and human freedom, and philosophy of mind. Kant's account of causal judgment supports, directly and cogently, causal realism in philosophy of science; his semantics of singular, specifically cognitive reference undergirds decisively Newton's Rule 4 of Natural Philosophy, thus supporting Newton's causal realism about gravitational force (ch. 10). Kant's account of the scope and limits of causal judgment demonstrates that we are only able to make valid (accurate and justifiable) causal judgments about *spatio-temporal* particulars, though causal *knowledge* only results from successful, exclusively causal *explanation* of actual events, or carefully specified classes of events. One direct implication is that the principle of universal causal determinism is not, nor can it be, a *known* causal law. Hence the key premiss in the purported debate about freedom of human action is, in principle, unknown and unknowable speculation; a classic philosophical pseudo-problem (chs. 11, 12). Finally, Kant's accounts of mental content and semantic externalisms and his account of causal judgment have major implications for two main trends in contemporary philosophy of mind: Cartesian internalism and reductive or eliminative causal naturalism (ch. 13). Examining, understanding and (so far as possible) explaining the details of human experience, cognition or mindedness must be an

interdisciplinary undertaking, to which philosophy can indeed contribute, but for which philosophical resources do not suffice. Kant's functionalist cognitive architecture offers much to interdisciplinary cognitive sciences (Brook 1994, 2016). I very much hope that the present examination, reconstruction and defence of Kant's methods, strategies, analyses and results may help to make Kant's contributions to contemporary epistemology, philosophy of mind and multi-disciplinary cognitive sciences more clear, convincing and attractive than hitherto. (I, for one, have learnt much more from Kant about all these current issues regarding human mindedness and sensory-perceptual experience since 2004, and indeed since achieving the interim results published in the various articles which have been revised, extended and made more precise to form chapters of this book.)

My findings developed from long-standing interests both in epistemology (including history and philosophy of science, 'HPS') and in Kant's philosophy, including his epistemology. My first book on their intersection, *Kant's Transcendental Proof of Realism* (2004), argued in detail that Kant's analyses and proofs regarding the scope and character of human experience and empirical knowledge were in several regards *more* insightful and incisive, *more* important and *better* justified than Kant himself realised, and that these stronger results show directly, on strictly internal grounds, why Kant failed to justify his transcendental idealism, *and* why his Critical epistemology does not need that idealism (at all), nor any such view. These textual and philosophical demonstrations are rather formidable, to many epistemologists forbidding reading.³

This study is altogether positive: I aim to make Kant's Critical epistemology intelligible, attractive and useful to epistemologists, and to philosophers and cognitive scientists more generally, not least by demonstrating that epistemological issues cannot be assimilated to, nor resolved by, those in (*e.g.*) philosophy of language, philosophy of mind or formal logic (singly or combined). PART 1 examines prominent themes in recent epistemology and identifies some important intersections between Kant's Critical epistemology and contemporary, post-Gettier epistemology (ch. 1). This includes critical appraisal of some neglected themes in Wittgenstein's *Philosophical Investigations* (ch. 2) and of key works of analytical Kantianism by C.I. Lewis, P.F. Strawson and Wilfrid Sellars (ch. 3). These chapters introduce key issues and analyses in Kant's Critical epistemology

3. I reply to several criticisms of *KTPR* in Westphal (2020b), an extended German version of ch. 9. I add that neither does Kant's moral philosophy nor his theory of action require transcendental idealism; his critique of rational judgment and justification suffices also for practical (including moral) philosophy; see Westphal (2016a), (2018a), §§2–3, and below, chs. 11, 12. Both the present study and *KTPR* say only the necessary minimum about Kant's Deduction of the Categories, which is examined in detail in Westphal (2020d).

–resources neglected by ‘analytic transcendental arguments’, and by much current epistemological discussion. Kant’s Critical epistemological resources are examined and developed much more thoroughly in PART 2.

One theme highlighted in PART 1 (and amplified in PART 3) is the persistence of Cartesianism in contemporary philosophy, despite manifold efforts or at least claims to reject it. Cartesianism persists due to both methodological and historical oversights, which are remediable and, I argue, are remedied by Kant’s Critical epistemology. PART 2 explicates Kant’s aims, resources and constructive strategy in the *Critique of Pure Reason* (ch. 4). It then examines Kant’s anti-Cartesianism (ch. 5) and reconstructs central phases of Kant’s anti-Cartesian epistemology in three measured, cumulative stages (chs. 6–8). I then demonstrate that, how and why some of Kant’s most important epistemological findings about perception and causal judgment have been pervasively disregarded (ch. 9).

One central finding I call Kant’s THESIS OF SINGULAR COGNITIVE REFERENCE (§§2.3, 26, 75). This simple though decisive thesis achieves the key aim of verification empiricism, *without* invoking any theory of (linguistic) meaning or conceptual content (intension). This thesis puts Kant’s epistemology in excellent philosophical company, including J.L. Austin, Gareth Evans, David Kaplan, Keith Donnellan, Fred Dretske, John Perry, Howard Wettstein, Charles Travis and İlhan İnan – though Kant’s Critical epistemology buttresses and greatly augments their views about singular reference by demonstrating the discriminatory character of causal-perceptual judgments within our actual worldly circumstances. Demonstrating how and how very well Kant examines the discriminatory character of causal-perceptual judgment puts my *Tractarian* epigram to a very non-*Tractarian* use, in accord with the later Wittgensteinian themes examined and defended in chapter 2; centrally, Wittgenstein’s aim to articulate a realism without empiricism.

PART 3 buttresses and augments those findings by examining how, and how fundamentally, Kant’s Thesis of Singular Cognitive Reference corroborates and supports Newton’s Rule 4 of scientific method. Kant’s Thesis demonstrates that justificatory infallibilism is not ‘too strong’, but rather is – in principle – *irrelevant* to all non-formal domains. Kant’s Thesis supports Newton’s causal realism about gravitational force, in part by exposing a crucial, widely neglected *infallibilist* fallacy in Bas van Fraassen’s case for ‘Constructive Empiricism’ (§§70–74). I then show that, and how, Kant’s Critical epistemology suffices to justify freedom of human action and moral responsibility, *without* transcendental idealism (§§75–84). One pillar of this result is that the very *premiss* of the debate about determinism *versus* free will is – in principle – unjustifiable, cognitively transcendent, altogether idle speculation. I then further corroborate the cogency and significance of Kant’s Critical epistemology by diagnosing the popular but in principle ill-founded

debates in much contemporary philosophy of mind between Cartesian internalism and reductive naturalism or causal materialism, including the so-called ‘hard problem’ of consciousness (§§85–89). I conclude (§§90, 91) by briefly summarising some central methodological and substantive findings of Kant’s Critical epistemology, to underscore the importance of his ‘changed method of thinking’ and the decisive philosophical insights his method affords.

Current epistemology has shifted focus dramatically in the wake of Timothy Williamson’s *Knowledge and its Limits* (2000). Yet many of these changes are not altogether salutary, because central to epistemology are issues concerning singular cognitive reference to particulars one localises in one’s surroundings, together with issues concerning the accuracy and cognitive justification of such referential, deictic achievements. These issues cannot be addressed using the resources of philosophy of mind, nor of philosophy of language, nor of first-order quantified predicate logic, whether singly or in conjunction. Williamson is correct that a strict conceptual *analysis* of the concept of ‘know’ or of ‘S knows that *p*’ is neither available nor particularly useful. Kant already knew that; this is one reason why he eschews conceptual analysis as a philosophical method, and advocates instead conceptual explication (A727–30/B755–8), where the adequacy of any conceptual explication must be assessed within humanly possible contexts of its actual proper use, not merely in logically possible contexts of its supposed, imaginary use. These points are central to, and are buttressed by, Kant’s Thesis of Singular Cognitive Reference, which is crucially important both to our empirical knowledge and to epistemology, in ways detailed and defended below, though these are obscured by Williamson’s ‘knowledge first’ approach.

One central reason Kant is correct that epistemology must consider judgment first, and one central example of why Kant is correct that understanding human knowledge and experience requires a profoundly ‘changed method of thinking’ (Bxviii, cf. A270, 676/B326, 704), may be highlighted concisely by examining a key philosophical opportunity neglected by Williamson (2009b) in his reply to Charles Travis (2009). The implications of this opportunity for renewed epistemological reflections ramify throughout contemporary epistemology, though how so shall be left to readers to consider, as this study focuses on Kant’s Critical alternative. Travis (2009, 257) expressly indicates that his comments aim ‘to see where the crucial issues lie’ between his own views and Williamson’s, especially, yet not only regarding meaning. Here I seek to elucidate these crucial issues more precisely to buttress some of Travis’s reflections on what he calls ‘Aristotle’s Condition’, so as to highlight key referential, semantic and epistemological issues regarding cognitive judgment within cognitive (*i.e.*, perceptual and technical-explanatory) contexts, issues systematically neglected by how Williamson’s approach to ‘knowledge first’

is committed first and foremost to what he himself (2009b, 380) avows as ‘logical orthodoxy’.⁴

Travis re-examines Aristotle’s well-known statement regarding truth and falsehood (*Met.* Γ 7.27), highlighting (in part) how things and their features, whatever they be, can be said by us to be as they are, or misstated to be otherwise than they are. One central point Travis highlights is that Aristotle’s condition does not suffice to warrant the determinate truth-value for assertions using one or the other of whatever predicates P or $\sim P$; predicates may be mutually exclusive (and exhaustive) and so conform to the principle of bivalence, yet bivalence holds *de dicto*, and does not automatically map onto features, characteristics or properties of *things*, to which pertains the *de re* principle of excluded middle. Travis avers that various contexts can be specified in which predicates we ordinarily use competently (and bivalently) neither pertain nor fail to pertain straightforwardly to some indicated *res* or state of affairs; one candidate case is ‘is blue’, said of Lac Lemman (268, 270). Understandably, Frege (1903, §56) requires bivalence of definitions (Travis 275); Travis (276) avers that we can in various contexts use phrases to speak accurately about how things are (not), without using bivalently specified or defined predicates.

Significantly, Williamson’s reply focuses entirely on issues of bivalence as a requirement for meaningful predicates, and appeals to Kaplan’s account of character and content, according to which linguistic ‘character’ is context-bound, and provides for mapping between linguistic meaning and its conceptual content in a (specified) context (380). Kaplan’s semantics does indeed provide powerful resources for disambiguation of usage, meaning and expressed contents as functions of context of usage. Williamson’s account of vagueness acknowledges that linguistic reference to any one specific property ‘is a far less transparent matter than is usually assumed’ (379). Despite such lack of transparency, Williamson presumes the direct semantic link of first-order predicate calculus between the *de dicto* principle of bivalence and the *de re* principle of excluded middle. This is fundamental to the ‘logical orthodoxy’ he advocates.

Williamson’s replies are important, yet insufficient. He contends, in effect, that with care we can resolve issues of opacity about meaning and expressed contents so as to identify specific properties designated by bivalently defined predicates. Perhaps in some, even many cases we can, but these lines of response disregard Travis’ most important point *de re* regarding Aristotle’s condition: Travis’ thesis ‘is not, as it stands, a thesis about words’ (274). How and how commonly worldly things or their

4. Since present introductory purposes are served by these two articles, only page numbers are indicated parenthetically with clear attribution to Travis or to Williamson, respectively.

features may not admit of clear, determinable or decidable description by our predicates I shall not pursue, but one simple, hypothetical scientific example Travis suggests merits closer examination and realisation. He considers fictitious Attic Greek scientists who developed two different kinds of scales, one built with springs, the other with a balance (260). They establish the reliability of both kinds of scales, and the consistency of measures of weight provided by either device. All of this is done at sea level. When they take their scales and weighing activities high into the mountains, they discover discrepancies between the two devices: the balance gives the same results regardless of altitude, whereas results of the spring scale differ at high altitude from those at sea level.

Travis' Attic Greek scientists may be fictitious, but the phenomenon he illustrates is not: Whatever may be our predicates, and however carefully disambiguated they may be, whether they designate the properties they purport to designate depends not only upon our logical syntax and semantics, but also upon how the world – nature, the very *res* itself – is (*cf.* Travis 276). Establishing measurements of physical parameters requires establishing a scale (a metric) and often a device which provides indications within that scale and which in fact responds reliably to a robust natural regularity. Such 'robustness' requires that no unknown physical factors interfere with that regularity nor with the device used to measure it. This independence from unknown physical interference cannot be established by theory, by measurement conventions (stipulation) or by experiment (available at a time and place), nor by all three combined.⁵ Official Bureaus of Weights and Measures have much real scientific research and testing to do! Such natural potentials (of unknown interference) entail that the terms used in measurement procedures, however bivalently precise they may be stipulated to be, do not and cannot guarantee that they map appropriately onto the natural phenomenon (*res*) they purportedly measure (there may not *be* that specific phenomenon!), or onto the natural indicators they presume to use as measures (indicators).

An entirely parallel point undermines Carnap's empiricist semantics, which requires simple observation predicates which can be easily used in readily testable affirmations or denials by simple observation. The required 'simplicity' of these predicates is that each can be used independently of any others. This semantic atomism is required for Carnap's empiricist semantics. One reason this fails is: regardless of whether our logical syntax may treat a predicate as a single-place (monadic) predicate, the property it (supposedly) designates may be, unbeknownst to 'us' (at some time and place), relational, and so require instead a polyadic predicate. *E.g.*, 'is red' (and all colour terms) turn out to depend, in part, upon

5. See Parrini (2009), Westphal (2015c), §3.2.

relative velocity of the source and the perceiver (Westphal 1989, 60–2). It is not at all incidental or accidental that standard weights and measures are specified by reference to such conditions as ‘standard temperature and pressure’.

Travis is correct that ‘at stake here is how we apply logic, not logic itself’ (265); whatever our concepts, terms or meanings may be, ‘it is open to the world to decide, in being as it is, whether a given deployment of [our concepts] satisfied Aristotle’s condition or not’ (276). Travis does not merely rehearse ‘the truth platitude’; his point is that the world may be such *de re* that, when properly used in an assertion or denial, *neither* of a pair of mutually exclusive (and exhaustive, hence bivalent) predicates expresses a truth or a falsehood in any accurate, determinate or satisfactory way. His further point is that we do not and cannot know in advance, on the basis of our logically sanitised and regimented syntax and semantics, whether, when or how this conundrum may arise.

These are very considerable reasons why epistemology must consider cognitive judgment and the kinds of actual cognitive circumstances (actual perceptual circumstances or technical investigations) in which our concepts and principles – however general, commonsense or specialised – can *be* used, in *reference* to their putative domains of application (to relevant particulars, *res*), and their use can *be* assessed, by further critical judgments. My points here are not – in the least! – opposed to shrewd and sound use of rigorously defined logical syntax and semantics; nor are they opposed to providing as much philosophical analysis as possible within the formal mode of speech. Rather, the technical resources of logical syntax and semantics and of formal modes of speech are not, and in principle cannot be, *sufficient* for epistemological understanding, insight and philosophical explication. Carnap’s best semantic attempt to avoid such contextual factors is made in ‘Empiricism, Semantics and Ontology’ (1950b). However, on strictly internal grounds that account fails, because the choice of which linguistic framework to adopt requires – as he indicates – some sort of assessment, that is *judgment* – of the expected utility of using that framework, where actual use of any linguistic framework will afford and require assessing – that is, *judging* – how and how well it works, so as to identify whether it can be improved, or better replaced by another linguistic framework. These are all framework-*external* factors in the use and assessment of any linguistic framework (Westphal 1989, 64–6). These forms of semantic and justificatory externalism are corroborated and augmented by Carnap’s most detailed explication of ‘conceptual explication’ (1950a, 1–18; *cf.* Westphal 2015a, §§2–3). Carnap’s explication of conceptual explication puts paid to the ‘classical’ hopes of pure conceptual analysis of puzzling terms or phrases into their explicitly defined and integrated necessary and sufficient conditions of meaning or proper use. Carnap’s explication of conceptual explication draws directly from Kant’s (A727–30/B755–8), which likewise relegates

conceptual analysis (and ‘analytic truth’) to the periphery of our philosophical resources. Hence the paramount importance of considered judgment (Elgin 1999), both to knowledge and to epistemology!

Note further that assessing the utility – whether expected or demonstrated (by its ‘track record’) – of the use of any linguistic framework is *comparative*: whether any one available framework can be made to work adequately and to work better than any available alternative. Consequently, the assessment of linguistic frameworks is *historical*, as well as logical, syntactic and semantic. Which history and how much of it may be required must be determined, that is *judged*, in context. Wilfrid Sellars understood this very well, hence his extensive and intensive examinations of historical philosophy, to understand as well as possible the kinds of issues central to, or perennial within philosophy, and to assess as well as possible the locutions devised by philosophers to consider, understand, assess and resolve those issues. Historical philosophy provides crucial benchmarks by which to assess the significance and the adequacy of recent or indeed the latest innovations (*cf.* Westphal 2015a, 2018a, §§100–10). Such historical benchmarks are decisive also for Kant’s Critical epistemology, as he indicated himself, albeit only by a sketch (A852–6/B880–4; *cf.* Westphal 2020c). Novelty is easy enough, innovation or insight are more demanding desiderata (*cf.* Kant, *KdU* §46, 5:308).

My point here against Williamson’s ‘knowledge first’ approach and his adherence to ‘logical orthodoxy’ is that this orthodoxy obscures or indeed occludes these important issues about that *res* which alone we can know: the world we inhabit, and about how and how well we can know it, by using our logic and our best concepts and principles in actual cognitive contexts within which actual cognitive *judgments* are made, used and assessed. This, I submit, is why and how Williamson neglected the splendid philosophical opportunity provided by Travis’ objections. Reichenbach (1920) understood correctly the point made above about establishing measurement procedures; the ‘logical orthodoxy’ soon brow-beat him into conventionalist orthodoxy (Reichenbach 1922). This same pervasive logical orthodoxy has occluded for 40 years a decisive infallibilist blunder lodged at the core of van Fraassen’s defence of Constructive Empiricism (below, §§70–73). For even longer, that pervasive logical orthodoxy has occluded an unjustifiable use of disjunctive syllogism which defines the core issue between determinists and libertarians regarding human action (below, §§75–84). Kant is quite right that gaining epistemological insight requires a fundamentally altered method of thinking (Bxviii, *cf.* A270, 676/B326, 704). One central change is no longer to regard any mere logical possibility as having *ipso facto* cognitive status or relevance to knowledge. The supposition that mere logical possibilities undermine or ‘defeat’ cognitive justification remains pervasive; it is central (*e.g.*) to global perceptual scepticism and to the ‘hard problem’ of consciousness (below, §§85–90). Philosophers who suppose

that mere logical possibilities *ipso facto* are relevant to epistemology or to human cognition are infallibilists, whether covert or overt. This book is addressed (*inter alia*) to them, and against that supposition. Having indicated these issues and points of departure, I turn in PARTS 1 and 2 to my positive elucidation, reconstruction and defence of Kant's Critical epistemology, which rightly considers judgment first.

That singular demonstrative reference is fundamental to epistemology could and should have been learnt from Evans, Austin or Frege; 'the Morning Star' and 'the Evening Star' are not only descriptive phrases denoting what were discovered to be one and the same planet; they also clearly and unmistakably identify those contexts here on Earth in which one can actually perceive *that* particular planet. Frege's 'modes of presentation' (*Sinne* as *Arten des Gegebenseins*) are not mere descriptions or propositions, and they are not limited to conceptual or linguistic resources. Surprisingly, these central, fundamental points about specifically *cognitive* reference and equally fundamental points about the multiple cognitive achievements (or conversely: failings) pertaining to our perceptual beliefs about, or our perceptual experience or knowledge of, particulars in our environs were examined incisively, in much greater and more illuminating, integrated epistemological detail by Immanuel Kant in his *Critique of Pure Reason*. Accordingly, this book joins (though seeks to improve upon) Sir Peter Strawson's effort to show that two centuries later, philosophers have much of cardinal importance to learn from Kant's *Critique* (*per* below, §14).

Above I describe these achievements as 'proto-cognitive' because Kant's Thesis of Singular Cognitive Reference serves to identify and to justify several regards in which cognitive judgments and their cognitive justification afford ranges of accuracy or sufficiency, and conversely: ranges of insufficiency or failure in these several regards. These epistemological insights do set limits to the scope and competence of philosophical epistemology, yet they also provide constructive links to many issues in contemporary cognitive sciences, from base level issues about sensory binding and perceptual affordances to high level issues regarding self-consciousness. One aim of the present study is to demonstrate why and how understanding human cognisance must be a multi-disciplinary undertaking, to which epistemology can contribute some important core findings, yet for which philosophical resources do not and in principle cannot suffice.

The surprising – I hope also welcome – findings include showing that, and how, Kant in 1787 demonstrates by very shrewd transcendental reflection that human perception is perceptual-*motor* activity, that perceptual discrimination and identification of any sensed particulars is episodic (temporally extended), fallible yet often sufficiently accurate and justified, that perceptual discrimination is counter-factually structured because it involves anticipating and discriminating *causally* relevant

alternatives to what one presently perceives, and that we can only perceive particulars with sufficient causal integrity to *be* distinguishable from our perceiving of them *as* we are perceiving them, because perception involves and requires discriminating those changes within our sensory intake which are due to our surroundings from those which are due to our own bodily comportment. Yes, in 1787 (indeed, in 1781) Kant identified on philosophical grounds the significance of the phenomenon now known as sensory re-afference! Kant's Critical account is – as Harper (1984a) noted – very much in accord with J.J. Gibson's account of perceptual affordances, and Kant's philosophy of perception is far closer to that developed by Merleau-Ponty than the latter had recognised. My reconstruction of Kant's account of cognitive judgment also aims to provide sophisticated account of information extraction – both sub-personal and explicitly self-conscious – of the kinds required though not supplied by Dretske's information theoretic epistemology.

Frege devoted serious philosophical attention to judgment (*cf.* Macbeth 2005, Travis 2013); more worried than Frege about psychologism, Carnap sought to eschew judgment (as too psychological) and to focus so far as possible on propositions and their assessment. Yet Carnap always recognised that his formalised syntax and semantics require for their significant use their proper complement, a 'descriptive semantics' which actually belongs to pragmatics, the domain of actual use by actual scientists of concepts and principles within their contexts of inquiry. These pragmatic aspects of Carnap's views were lost upon Quine, spawning the prevalent myth that Carnap was a formalist. This myth is central to today's logical orthodoxy, which, together with Williamson's 'knowledge first' approach, occludes altogether many important, hard-won epistemological insights reviewed below (PART 1). Concern with judgment has re-entered contemporary epistemology through the back door of virtue epistemology. Cognition does involve a host of skills, responsibilities, duties and virtues. These can best be brought into proper epistemological focus by considering judgment first. *That* is central to Kant's Critical epistemology!

Readers who may seek a bridge between these epistemological and methodological investigations and Kant's *Critique of Pure Reason* may find it in Graham Bird's (2006a) commentary, *The Revolutionary Kant*, or in Jay Rosenberg's (2005) *Accessing Kant: A Relaxed Introduction to the Critique of Pure Reason*. Readers interested in 'modal metaphysics' should please consult Greenberg (2008), Stang (2016) and Abaci (2019). Readers seeking more direct engagement with analytical semantics and theory of reference should begin with Bird's (2006c) excellent guide to 'Kant's Analytical Apparatus', and then consult Robert Greenberg's *Kant's Theory of A Priori Knowledge* (2001) and his *Real Existence, Ideal Necessity* (2008). Greenberg's chief concerns are with Kant's theory of *a priori* knowledge, whereas mine (here) is with Kant's theory

of empirical knowledge, both commonsense and natural-scientific. My many substantial points of agreement with Bird and with Greenberg are not, however, discussed here; neither are their findings presupposed by the ensuing re-analysis, reconstruction and defence of Kant's Critical epistemology.⁶ I have much to say about the singular cognitive reference required for any empirical knowledge, widely neglected in recent philosophy and by Kant's commentators (including Greenberg; it is recognised by Bird), though it is as important philosophically as it is basic. Greenberg and I agree that Kant provides excellent grounds to dismiss Quine's dismissal of singular terms and their proper empirical, cognitive uses.

Readers who may seek further bridges between Kant's Critical epistemology and the cognitive sciences are advised to consult the many excellent studies by Andrew Brook and his collaborators, and by Paul Natterer (2003). Brook has pursued these connections ever since publishing his excellent book, *Kant and the Mind* (1994). His recent survey of the relevance of Kant's philosophy to the cognitive sciences (Brook 2016) concludes that Kant's philosophy offers rich resources, not all of which have been used within the cognitive sciences. I hope that the present study may facilitate further integration of Kant's Critical epistemology with the cognitive sciences, by augmenting Brook's findings about Kant's account of the human mind and its functionalist cognitive architecture.

6. I dissent from much of the detail of Greenberg's (2008) chs. 2–5, whilst largely agreeing with his dual-aspect interpretation of Kant's objects (*Dinge*). My version of Kant's dual-aspect theory is in *KTPR* §§4–14; what little from that account needed here is charted below, §46.



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

Part I

Epistemological Context



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

1 Thought Experiments, Epistemology and Our Cognitive (In)Capacities

1. Introduction

Credible, informative epistemology has been difficult, even before Descartes's *Meditations* elevated it to first philosophy, not least because we must use most if not all of our cognitive capacities to consider and to specify the character, scope and limits of our cognitive capacities. Worse yet, the problem of global perceptual scepticism appears as easy to formulate as it is difficult to solve: Simply as a matter of logic, all of our beliefs, thoughts and experiences could appear to us to be just as they are, even if none were veridical (Stroud 1994b). Curiously, Stroud inadvertently overstated his case: As a mere matter of logic, all of our empirical beliefs and experiences could be as they are, they could be altogether true, yet entirely lack cognitive justification; this too suffices to formulate global scepticism. Since Gettier, Quine and Davidson, it may appear that philosophers can only reply to sceptics by telling them to get lost, Rorty (1986) suggested. Gettier's (1963) famous paper countered the classical analytical aim to analyse the concept 'knowledge' exhaustively into the concepts of 'justification', 'truth' and 'belief', each of which is to be analysed into their necessary and sufficient conditions of meaning or of use. All of Gettier's counter-examples turn on contextual factors of which his benighted protagonist, Smith, is unaware, and of which he cannot become aware merely by reflecting upon his own attitudes, beliefs or experiences. Varieties of epistemological externalism flourished in response. Quine (1969b, 75) belittled the 'make believe' involved in the empiricist attempt to reconstruct the world on the sole bases of logic and one's own (putative) sensory experiences, advising instead to naturalise epistemology by embracing cognitive psychology. Davidson (1987 [2001, 154]) conceded to Rorty's (1986) suggestion.

Does epistemology collapse for lack of resources other than logic, conceptual analysis and descriptions of one's own apparent experiences, thoughts and beliefs? No, but understanding how and why not, Kant

noted, requires a ‘changed method of thinking’ („*veränderte Methode der Denkungsart*”; Bxvii, B704). Some of these methodological changes are summarised in §2 to identify a philosophical role for thought experiments to help identify logically contingent, yet cognitively fundamental capacities and circumstances necessary to human thought, experience and knowledge. As Kant also noted, experiments are only informative in response to posing the right question, indeed: the right kind of question (Bxii–xiv). Accordingly, preparations for these epistemological thought experiments (§2) fill half of this chapter. The second half (§§3–5), examines three such thought experiments, variously developed by Kant, Hegel, C.I. Lewis, Austin, Wittgenstein and F.L. Will.

2. Some Critical Cautions and a Role for Thought Experiments

To change one’s ‘method of thinking’ is not merely to exchange one philosophical method or one set of assumptions for another. It involves changing one’s basic ways, means and strategies of *thinking*, one’s whole approach to philosophising, and thereby to change one’s ways of using or assessing any philosophical method, or its scope, limits and results. Accordingly, the following remarks can only characterise some relevant changes and, I hope, make them plausible, though not (yet) to defend them in detail – they are developed throughout PARTS 1 and 2.

2.1. *Conceivability, Infallibilism and Philosophical Cogency*

Global perceptual scepticism is logically possible. Is this logical possibility, conceivable as it is, epistemologically relevant? Why or how, exactly? Deductive logic concerns avoiding various fallacies by which false conclusions would be drawn (spuriously) from true premises. Although knowledge involves avoiding or minimising error so far as possible, there is no good reason to think that, in addition to truth (or sufficient accuracy) and belief, the justification condition(s) for knowledge can be specified or satisfied by deductive logic alone, however one may analyse (*‘a priori’*) one’s concepts, beliefs or apparent experiences. Why suppose that cognitive justification sufficient for knowledge must eliminate any and all logically possible, merely conceivable alternative states of affairs, whether regarding the content of the belief or claim, its origins, or whatever else may be thought to contribute to or to constitute its cognitive justification? If one could exclude or eliminate any and all logically possible alternatives, that would certainly suffice to guarantee the truth of the belief or claim in question – if any truth remained, but why suppose that failure to exclude or eliminate all

logically possible alternatives is required for empirical knowledge, specifically: for its cognitive justification?¹

Infallibilism about cognitive justification is most familiar from Descartes' attempt to outwit the possibility of a malignant, deceptive genie. Descartes' attempt is vitiated, not by one, but five distinct circularities, each vicious.² The worst concerns the prospect that, not the Divinity, but rather the malignant genie imbued Descartes with exactly the same innate ideas of simple natures as he reports having, including his idea of the Divinity, but so arranges the rest of creation that none of Descartes' ideas (other than that of his own occurrent thinking being) are true – especially his idea that any being with one perfection must have all perfections, because one divine perfection is that, within the Divinity, *all* perfections are simply *one* and unitary.³ Descartes deliberately wrote meditations rather than disputations, but co-meditating epistemologists who do not receive the divine neo-Augustinian illumination to which Descartes purports to guide our attention, must instead develop a radically different approach to epistemology.

The classic empiricist alternative was to reduce all talk about physical objects and events to talk about elementary sensory episodes and various logical (re)constructions of them. Though often proposed, none came closer to achieving such a reduction or (re)construction than Carnap (1928). The most fundamental problem confronting any such (re)reconstruction is that either the (re)construction takes the temporality of the sequences we experience for granted, and so fails to complete the proposed reduction or (re)construction; or else appeal to unreconstructed temporal ordering is avoided, but then the reduction or (re)construction can only specify symmetrical relations amongst elementary sensory episodes which in principle fail to formulate the asymmetrical temporal relations involved in anyone's experiences, including those historical events investigated and explained by any empirical theory, including their

1. I shall continue to speak of 'cognitive justification', where it has become common to speak of 'epistemic' justification, to be cautious about level confusions in epistemology (Alston 1989, 153–71), and to keep in plain view that the relevant justification is first-order, 'material', and thus distinct to those issues or achievements regarding the justification of any philosophical theory of knowledge. This is part of my campaign against mistaken tendencies to assimilate cognitive justification to mere attributions (second- or third-person) of what is merely said to be [cognitive] justification to Someone else. Attributions of knowledge (or error) require scrutiny of their accuracy and warrant no less than does anyone's knowledge first-person – for anyone to whom knowledge (or error) may be attributed.
2. The five circularities are detailed in Westphal (1987–88). Subsequent defences of Descartes against charges of circularity have neglected the complexities and difficulties confronting his epistemological project in the *Meditations*.
3. Med. 3, 5; Replies 1/AT 7:49–50, 137, 240, 241; 8.1:12.

procedures and processes of observation and data collection, all of which are temporally extended processes. Empiricist reductionism fails prior to posing issues about cognitive justification.

Infallibilist standards of cognitive justification would be wonderful, were they within our capacities – or were they germane to knowledge of logically contingent truths. ‘Infallibilism’ requires not only that strict logical deduction would suffice, but also that it is necessary to cognitive justification. Infallibilism equates cognitive justification with provability. Provability constitutes justification, however, only within strictly formal domains. The one strictly formal domain is a properly reconstructed Aristotelian square of opposition (with conversion); only within that domain are sentences provable (demonstrable) on the basis of form alone (Wolff 2009a). All other domains involve various existence postulates, including semantic postulates. The adequacy and the use of these postulates cannot be assessed by formal methods alone. We can of course formalise various domains or linguistic frameworks (Lewis MWO 298; Carnap 1950b), but within such formalised logistic systems, strict deduction can at most be necessary, though never sufficient for justifying specific claims within their domains. Justifying specific claims always involves the further semantic or existence postulates constitutive of their domain, and requires assessing the use of those postulates in connection with the specific claim in question. This is no objection to formalised logistic systems; it is a fact. Problems for epistemology lie in failure to recognise this fact and its implications. One implication of this fact is that infallibilist standards of justification are appropriate, *i.e. relevant, only* to formal domains. Empirical knowledge concerns spatio-temporal objects, events, persons, structures or processes. Accordingly, empirical knowledge is a non-formal domain. Hence infallibilist standards are not ‘too stringent’, as has frequently been claimed: Infallibilist standards of justification are in principle *irrelevant* to empirical knowledge. As Kant noted, deductive logic is a canon for rational judgment, but (outside strictly formal domains) no organon for knowledge (*KdrV* A52–4, 60–1, 795–7/B76–8, 85–6, 823–5). In this, Kant wisely echoed Galileo (*Two New Sciences*, EN 8:175/1914, 137–8). We shall see below (ch. 10) that their coincidence is no accident.

An important corollary to this interim finding is that the prime methodological problem confronting epistemology is to determine, within the domain of all logical possibilities, which possibilities pertain to human cognition. An important feature of this vast perplexity is highlighted by considering the philosophical fate of Aristotle’s model of philosophical knowledge, *epistēmē* or *scientia*, which he modelled on Euclidean geometry, but which he expressly insisted must be matched to the precision afforded by any domain of inquiry. How and why did this flexible model (*cf.* Betti, de Jonge & Martijn 2010–11) become the strict deductivist infallibilism associated with *scientia* in the Modern period? It was not

Descartes' innovation. It was legislated in March 1277 by Étienne Tempier, Bishop of Paris, upon authority of the Roman Pope, when he condemned as heretical 220 neo-Aristotelian theses in natural philosophy (Piché 1999). It is both explicit in Tempier's condemnation, and implied by many of his comments on those theses, that the Divine Omnipotence can do anything which is not logically self-contradictory, including bringing about any effect without its typical causes. This holds, too, for those 'effects' we typically regard as our sensory experiences of our surroundings. Knowledge – *scientia* – requires eliminating all logically possible alternatives to any cognitive claim (Tempier asserts and repeatedly implies). All else is either divine revelation or fallible conjecture; natural philosophers can do no more, and no better, than to propose (merely) possible explanations of natural phenomena. That edict was later violated by Copernicus and Galileo, though honoured by Descartes (at least officially).⁴ Tempier's edict made mere logical conceivability into a mainstay of philosophical analysis, argumentation and (dis-)proof (Boulter 2011), even if its implications for global perceptual scepticism were first explicitly generalised in Descartes's *Meditations*.⁵

Infallibilism about cognitive justification limits epistemology to conceptual analysis, not only because it proscribes appeal to logically contingent empirical premises (other than those pertaining to first-person reports of appearances to oneself), but also because it requires reliable first-person awareness of *all* justificatory factors relevant to any claim at issue; the view now called 'access internalism'. This includes full, competent reliable access to the factors constitutive of knowledge, so that one can determine whether these factors are, in any specific case, satisfied. This is the strong 'K-K' principle, the purported requirement that, to know that x , one must know that one knows that x . These considerations drove 'traditional' (pre-Gettier) epistemologists to seek a pure conceptual analysis of 'knowledge' as consisting in 'justified' 'true' 'belief', as the conceptually necessary, jointly sufficient conditions for any and all empirical knowledge.

The chief methodological problem confronting epistemology as conceptual analysis is the Paradox of Analysis: How can any conceptual analysis be informative, and yet also be recognised to be complete and adequate? If we can recognise a conceptual analysis to be complete and adequate,

4. *Prin.* 3.46, AT 8.1:100–1; *Disc. Meth.*, AT 6:45–6; *Le Monde*, AT 11:36.

5. Widely known to Mediaevalists, the Paris Condemnation of 1277 remains just as widely neglected even by specialists in 17th-century European philosophy, including those concerned with philosophical history; most recently, *e.g.*, Lærke *et al.* (2013). Papal infallibility was only made official dogma by the First Vatican Council (1870) in its 'First dogmatic constitution on the Church of Christ', ch. 4, §9. It became the majority Catholic view during the Reformation, *i.e.* a century after the Paris Condemnation; see Tierney (1972).

we must already understand the concept(s) so analysed, in which case the analysis is uninformative. If instead a conceptual analysis is informative, how can we tell whether it is complete or adequate? This paradox of analysis greatly exercised philosophers from the 1940s into the 1990s, though neglected since. This neglect is reflected, if inadvertently, in how easily philosophers today offer or accept as serious challenges remarks of the form: ‘But couldn’t s/he say _____?’, or: ‘But couldn’t it be, couldn’t it happen that _____?’ Such questions presume that any and all logically possible (grammatically consistent, or at least not obviously self-contradictory) alternatives to any proposed account must be eliminated in order to justify the challenged proposal. Such philosophers have inherited their methodological predilections from Bishop Tempier. Consider again Descartes’ statement that one perfection of the Divinity is that within the Divinity all perfections are simply one and unitary (AT 7:137). So saying does not suffice to *conceive* this purported truth; it is as much a contradiction as insisting that within the numerical unit, 1, all numbers are simply one and unitary: Any plurality of perfections is inconsistent with their simple numerical unity. Saying or claiming otherwise does not make it otherwise conceivable. Merely *thinking* that one is speaking or thinking cogently, however sincerely one may so suppose, does not suffice *actually* to think or to speak cogently. Neither our concepts, our meanings, nor the cogency of our own thinking or speaking are transparently self-evident in the ways philosophers still too often and habitually suppose (*cf.* Burge 2010).

The best solutions to the Paradox of Analysis all, implicitly or explicitly, replace conceptual analysis with conceptual explication (*cf.* Hare 1960). It is striking and significant that both Kant (A727–31/B755–9) and Carnap (1950a, 1–18) distinguish between conceptual analysis and conceptual explication, in these very terms, and for very much the same reasons and to the same effect. Conceptual explication does not aspire to completeness; conceptual explication is selective and aspires to improve the clarity of the explicated concept(s) and to improve upon their use *in the context(s)* of original use of the concept(s) in question. No conceptual explication is known to be complete; all remain corrigible and partial; their assessment is always in part a function of their improved functioning within possible contexts of their *actual* use, *not* within merely imagined contexts of their (allegedly) possible use! Because they are context-bound in this way, conceptual explications involve – and invoke – important aspects of semantic externalism, the thesis that the content (intension) of a concept or term may be specified by factors unacknowledged by a competent speaker, S, and which may concern circumstances of which S/he cannot become aware by simple reflection. Simply *calling* a philosophical account of a concept, term, phrase or principle an ‘analysis’ does not suffice for that account to *be* a conceptual analysis. If the content or adequacy of that account depends in part upon its context of actual use, it is an explication. The first methodological maxim is to make such

context-dependence into a philosophical virtue. The questions are how to do so, and whether such virtues can aid epistemology.

Gettier's (1963) counter-examples in effect echo Carnap's distinction between conceptual analysis and conceptual explication, insofar as Gettier's counter-examples invite us, his readers, to re-consider how we would use, understand and explicate the concepts 'empirical knowledge' and (cognitive) 'justification' in the kinds of circumstances of use in which Smith believes he knows something which, in view of contextual factors unknown to him, he cannot know.

2.2. *Naturalised Epistemology and Causal Reliability 'Theories'*

Another way of stating the exorbitant demands of infallibilism about cognitive justification (of empirical knowledge)⁶ is that it requires proving *a priori* that our cognitive capacities suffice for empirical knowledge in any possible environment, before trusting ourselves to know anything about our actual environs. These *a priori*, merely analytic aspirations of 'traditional' (pre-Gettier) epistemology were discarded by 'naturalised' epistemology, which appeals in various ways to various empirical factors or findings in order to understand empirical knowledge. One popular genre of naturalised epistemology takes the form of 'causal reliabilism'. The popularity of causal 'theories' of knowledge, of language or of human mindedness, unfortunately, exceeds their cogency. (I make this case briefly here; it is detailed in ch. 14.)

Davidson (1980, 80; 2004, 98) noted that we lack knowledge of relevant causal laws and mechanisms in these domains. That is correct, significant, yet insufficient. Dretske's information-theoretic epistemology established three important semantic points:

1. Causal relations are neither necessary to nor sufficient for information relations. (*KFI*, 30–9)
2. Information relations are necessary for any specifically *semantic* content, and hence also for linguistic meaning or conceptual content. (*KFI*, 214–30)
3. Information relations are necessary though not sufficient for representations or for relations of representation, whether sensory or conceptual. (*KFI*, 153–230; *NM*)⁷

6. Hereafter I omit reminders that my topic throughout is empirical knowledge, and whatever knowledge may be involved in understanding or assessing empirical knowledge.

7. This point is developed gradually in Dretske (*NM*); it concerns the relations between 'natural' and 'functional' meaning, and how representational systems must function in order to be capable of misrepresentation.

These points stand, regardless of the (in)adequacy of Dretske's account of the information decoding required for belief or knowledge (*KFI*, 57, 144, 219),⁸ and regardless of the shortcomings of his attempt to naturalise the mind (*NM*). Dretske's findings entail that bland appeals to 'causality' in matters of human mindedness are, as Pinker (1997, *ix*) remarked about earlier philosophical views of the mind, 'too vapid to be wrong'.

If indeed we can know anything (such as how to see, recognise, read and understand these very words), it is in part because our psychophysio-neurology functions in ways which enable us to know something. The difficulty is to fill in this platitude with sufficient, informative specifics. This, I believe, must be a multi-disciplinary task. The proper task can be formulated and pursued only by heeding a major problem with its predecessor at the turn of the 20th Century (c.e.): 'psychologism'. Reviewing that multi-disciplinary (also polyglot, robustly international and inter-continental) literature, as I recently did, underscores just how grave and pervasive were problems of psychologism, and why it so exercised not only Frege, but still at mid-century also Carnap (1950a, §11). One chronic error of philosophers is simply to postulate whatever psychological or neurophysiological processes they suppose are required to fill in between the aspects of human mindedness they describe philosophically; so doing is evident not only, *e.g.*, in Brentano (1874), Lipps (1901, 1912, 1913), or Wundt (1907), but also in Quine (1995).⁹ More significantly: to pertain to knowledge or to epistemology, causal regularities or psychophysiological processes must satisfy *proper*, that is: properly *cognitive*, functions. They must be properly responsive to truth, to accuracy and in many cases to evidence, relevance or analysis (*i.e.*, their detailed assessment). These parameters are inherently normative, even though they are instantiated, effected or sub-served by our socio-psychological neurophysiology. The recent rise of 'virtue epistemology' in effect addresses a gap in epistemology resulting from rejecting anything so (apparently) psychological as judgment. Yet many beliefs don't just happen to happen; many (if not most or all) beliefs are formed, and they are formed more or less responsibly – if often habitually so. Even Russell's deliberately simple example, 'The cat is on the mat', requires not just sensory experience, but noticing the cat, the mat, and their respective locations. Seeing is not believing; believing is not simply seeing. Believing is propositionally structured in ways that sensory perception alone is not (Dretske *SK*, ch. 2). In many cases, beliefs result not merely from judgments, but as they should:

8. For concise discussion, see Westphal (2003a), §§26, 27.

9. On Quine, see Murphey (2012), Westphal (2015a). Ignorance if not contempt of our predecessors has reached such extremes that it is worth noting that Lipps' translation of Hume's *Treatise* is excellent, and that much current philosophical 'naturalism' is no more cogent than that at the turn of the 20th Century (c.e.); see below, §§86, 87.

from considered judgment (Elgin 1999). Frege took judgment seriously; Carnap most strongly and effectively urged eschewing judgment to focus upon propositions. One central aim of this book is to demonstrate that, and why, Kant (and Frege) were right to address issues of judgment, and why propositions alone are insufficient for epistemology; their proper use and assessment involve proper, *i.e.*, considered judgment.

2.3. *Conceptual Content, Linguistic Meaning and Specifically Cognitive Reference*

A more fundamental problem confronting currently popular causal ‘theories’ highlights both the distinctiveness of epistemology and a long-standing methodological shortcoming of much analytic philosophy. Causal theories of human mindedness (language, thought, belief, knowledge, action) describe various intelligent capacities, actions or achievements in causal terms. Whether those causal terms refer, and if so how accurately, to any instantiations within our neurophysiology, is merely assumed by most so-called ‘causal’ theories; they are neither established nor investigated by causally-minded philosophers. Responsible naturalistic epistemologists rightly appeal to results of relevant empirical sciences (*e.g.*, Kornblith 2002, Millikan 2004, Ryder *et. al.* 2012); this is as it should be. Cognitive reference to relevant, specific causal particulars and their kinds can be borrowed in this way – though only from *actual* scientific results.

Too often neglected by causal theorists of human mindedness is a basic distinction between (*e.g.*) uttering a sentence and making a claim. To be a *claim*, even a *candidate* cognitive claim, a sentence must be used to make a statement about some relevant particulars (of whatever kind or scale). The linguistic meaning or the conceptual content (intension) of any sentence, statement or proposition *in principle* does not suffice to determine (*i.e.*, to specify) whether there are any such particulars, or whether there are several, or only one such. However detailed or extensive a description may be (when used to explicate the linguistic meaning or conceptual content of any proposition, sentence, thought, belief or utterance), and regardless of whether it includes one or more putative (grammatically) definite referring expressions,¹⁰ intension cannot secure definite singular reference, because there may be no such particular as satisfies that intension, or there may be several such (who knows where). Predication as a linguistic form does not suffice for predication as a proto-cognitive act of ascribing characteristics *to* any one (or more) particular(s). Conversely,

10. Such as, *e.g.*: ‘the’, ‘the one and only’, ‘the very one itself’, ‘those very ones there’, ‘whoever just entered’ or ‘the shortest spy’ (who may be triplets of equal stature and profession).

an intension may in part be inaccurate, and yet be used successfully to designate some particular; this is part of Donnellan's (1966) point about successful referential use of inaccurate definite descriptions, such as 'The man in the corner holding a Martini', which can pick out one person within a group clustered in the indicated (ostended) corner, where the others (let us suppose) evidently hold soft drinks, yet the designated individual in fact drinks from his Martini glass only water.

The epistemological significance of the distinction between predication as a grammatical (sentential, propositional) form and predication as a proto-cognitive achievement of ascribing a characteristic(s) to some particular individual(s) is augmented by Evans's (1975) account of predication. Evans argued (soundly, I submit) that mastery of predicates within some language requires being able to distinguish particulars or their specific aspects which are properly characterised by the predicate(s) in question, where such discrimination involves identifying by delimiting the relevant region occupied by the relevant particular(s) or their aspect(s). Evans showed that ascription of any characteristic and spatio-temporal localisation by delimitation of any particular exhibiting that characteristic are mutually interdependent proto-cognitive achievements.

Donnellan's and Evans's findings hold regardless of considerations about accuracy or precision; sufficient accuracy or precision to discriminate the relevant individual(s) or characteristic(s) from other individuals and characteristics suffices, even if they are approximate. Their points hold regardless of whether a single, particular individual or a plurality of particular individuals may be at issue; they hold regardless of the scale or duration of the relevant individual(s), and they hold regardless of issues about any cognitive or doxastic justification of the relevant attribution. Their findings are decisive for epistemology, for the following reasons.

To make even a candidate claim to know something empirically requires localising the relevant particular(s) within space and time, and ascribing some characteristic(s) to it (or to them). Predication in the form of ascription of characteristic(s) to some particular individual(s) is necessary for Someone's claim to *have* any truth value, or any value as an approximation. Such attribution is also necessary to *evaluate* the truth or the accuracy of that attribution. Such attribution is also necessary for *S*'s claim to *have* any cognitive justification, of whatever form(s) and to whatever extent it may be cognitively justified. And – waiving for now issues about error, false belief and radical mis-representation – *S*'s claim having some kind and extent of cognitive justification is required to *assess* its cognitive justification, and whether it suffices for knowledge. (These conditions must be satisfied by any other claims required to specify whether *S*'s attribution errs or fails radically.)

Whatever may be the proper account of linguistic meaning or linguistic reference, and likewise whatever may be the proper account of conceptual content (intension), these do not suffice for epistemology, because

they do not suffice for specifically *cognitive* reference – even putative, proto-cognitive reference – to localised, discriminated individuals. The ego-centric predicament posed by global perceptual scepticism voids not only the justificatory resources required for any empirical knowledge; it voids also the referential resources required to make even *candidate* cognitive claims (within the non-formal domain of putative empirical knowledge). This point concerns proto-cognitive *reference* to particulars. I stress ‘proto-cognitive’, because such reference is necessary for any empirical claim to know something; it is necessary for any claim even to be a *candidate* cognitive claim; accuracy and sufficient cognitive justification are distinct, further cognitive requirements. Consequently, philosophy of language and philosophy of mind may contribute to epistemology, but they do not suffice for epistemology: accuracy of ascription and specifically *cognitive* justification are not phenomena within the domains of philosophy of language or philosophy of mind (whether singly or combined). Ultimately, this is why philosophers of language such as Quine, Rorty or Davidson could only tell sceptics to get lost (above, §1).¹¹ Merely thinking or supposing that one ascribes various characteristics to something does not suffice for any *actual* ascription. Actual ascription, even putative ascription, requires localising the relevant particular(s), sufficiently to discriminate them from their neighbours or relatives (*i.e.*, from similar, though relevantly different sorts of individuals).¹²

This contrast between descriptive content and referential attribution (ascription) parallels the distinction between sentence meaning and speaker’s meaning, where the latter concerns what Someone means to state by using a token of some meaningful sentence. The epistemological point advocated here, and defended in detail throughout this study, is that knowledge is distinct to information, just as cognitive content is distinct to linguistic or conceptual intension, insofar as knowledge (or even presumptive knowledge) concerns Someone judging, claiming or believing that some indicated particular(s) instantiate adequately whatever attribution S/he makes in so judging, claiming or believing. Demonstrative (deictic) reference (whether direct or indirect, *e.g.*, by instruments)

11. Though Quine (1969b) appeared to advocate naturalising epistemology, he never did so himself. His referential ‘proxy functions’ preserved no more than cardinality, but prescinded from any determinate ascription of characteristics to localised particulars. Quine said that physical objects are only a simplifying posit, but his own semantics precludes associating any specific or adequate concept(s) with his physical inscriptions or utterances. Talk is cheap; actually saying something significant is more demanding; see Westphal (2015a).
12. I beg the reader’s forbearance if I appear to belabour the obvious, but recent literature provides all too much evidence that these elementary points of epistemology and ascription (as distinct to mere description) are widely neglected; *e.g.*, much of the resurgence of ‘analytic metaphysics’ presupposes it.

is required for any truth value, or for any value as an approximation; deictic reference in actual circumstances is required for there to *be* any issues of cognitive justification for *S*'s judgment (*etc.*), and deictic reference is required to *assess* either accuracy or cognitive justification. Too many philosophers have mistakenly followed Russell's view of definite descriptions and Quine's extensionalist rejection of singular terms so that they try to force linguistic or conceptual intension to replace or to obviate deictic reference. That is language gone on a hopeless holiday, lost in a foggy meta-language lacking any real use.

2.4. Identifying and Exploiting Our Cognitive Dependencies

The ego-centric predicament of global perceptual scepticism purports to rob us of both our justificatory resources *and* of our referential (deictic) resources, required for even candidate empirical claims to know anything. Despite his infallibilist aspirations, one feature of Descartes' strategy in the *Meditations* merits credit: In various regards Descartes sought to characterise his manifold dependencies, including his cognitive dependencies, and to exploit these for epistemological benefit. (Descartes himself did not advocate the disembodied mind invented by his successors; *cf.* Ferrini 2015.)

Here, at last, is a role for thought experiments in epistemology: Can thought experiments be devised to help us identify some of our fundamental cognitive capacities, and our consequent incapacities? Can thought experiments be devised to help us identify how some of our fundamental cognitive capacities are in principle and in practice dependent capacities, in ways which illuminate epistemological issues, without simply dismissing issues about scepticism, or simply replacing epistemology with empirical cognitive science? Can thought experiments contribute philosophically to the multi-disciplinary research required to understand human cognition?

Three such thought experiments are considered below (§§3–5). They are thought *experiments*, not merely examples; they experiment with our human capacities for *thought*. They aim to contribute to our self-knowledge as cognisant beings, by helping us to identify some very basic features of our very finite form of human cognisance, and to appreciate their epistemological implications. In this regard, these examples are not merely conceptual, and concern not merely what is possible logically, but what is possible *for us* human beings.¹³

13. Bird (2006c, 135) elucidates Kant's method as mapping our cognitive capacities and resources, so 'designed . . . to *articulate* the structure of experience . . . accurately . . . without immediate prompting from skepticism. The aim is . . . to construct an accurate map, a transcendental topic, of our experience, and only then to consider how far

Against Strawson's (*BoS*) analytical reconstruction of Kant's 'Objectivity Argument', Rorty observed:

Arguments of the Strawsonian type rest on considerations of which words can be understood independently of which other words. The relevance of these considerations vanishes if we admit the possibility of a being who could experience something as an X but could not use the word 'X' nor any equivalent expression. (Rorty 1970, 224; *cf.* 231)

Rorty's observation epitomises the characteristically 'analytical' misunderstanding of Kant's transcendental methods and proofs, a misunderstanding running through the whole discussion of 'analytic transcendental' arguments. Conceptual content or linguistic meaning as such cannot suffice for epistemology (*per* §2.3). Rorty's question, whether 'a being who could experience something as an x but could not use the word "x" nor any equivalent expression' is *possible*, itself belongs to the infallibilist tradition inaugurated by Bishop Tempier in 1277 (Boulter 2011), skewered by Carnap (1950b, 1–18) and Gettier (1963), though superceded by Kant in 1781 (*per* below, §§22–26, 33, 62). Unless *we* are that kind of being whose possibility Rorty supposes, that possibility is irrelevant to *our* human form of finite cognisance.

The prospects for epistemology are not significantly improved by seeking some form of 'broad' conceptual necessity; for that, too, we would need adequate criteria for adequate explication of 'broad' conceptual necessity, *and* adequate grounds for supposing that any such 'broad' conceptual necessity pertains to *us* as the finite cognisant beings we are. Not only metaphysics, but too much epistemology has 'merely groped about, and worst of all: amongst mere concepts' (*Bxv*)!¹⁴ Like Kant, some exceptional ordinary language philosophers recognised that epistemological issues cannot be addressed merely in terms of linguistic meaning, conceptual or propositional content (intension) or other forms of conceptual analysis. Specifically epistemological issues are only engaged when we

its correction of earlier maps yields antiskeptical conclusions about that experience'. Though my approach here differs from Bird's (2006a), I believe my approach complements his, working (so to speak) from the bottom up, from re-considerations of perceptual experience and its constitutive features, structures and conditions.

14. The pervasive error here illustrated from Rorty (1970) was not due to lack of good information; see Watson (1881), Caird (1889), Mahaffey & Bernard (1889), Bird (1962), Dryer (1966). The error was made pervasive by philosophers' willingness to heed Russell's (1922; *CP* 9:39) battle-cry, 'back to the 18th Century', by which Russell had meant Hume, not Kant. Such default empiricism persists today within the pervasive 'logical orthodoxy'.

consider how *we* can form and use thoughts to make putative cognitive claims or judgments, whether in specific cases or wholesale.

Consider one point Kant claims to establish in this way. He grants that it is entirely conceivable that there be no space at all, and that we can conceive of space as being entirely empty, but he denies we can *represent* to ourselves the absence or lack of space (A24/B38–9). Kant's point concerns the fundamental role within human cognisance of representing individuals and events spatially, and how spatial representation is required for us to represent anything *as* distinct to ourselves. He makes comparable points about how we experience all appearances temporally, that is, within time (A31/B46). My present point is not (yet) to defend these claims, but to highlight Kant's concern with identifying *our* human forms of sensibility, which are (partly) constitutive of our human form of mindedness, namely, that we experience whatever we do spatially and temporally. (Nothing yet turns on whether our experiences are veridical.) The logical possibility of other forms of cognisance is altogether beside Kant's elementary epistemological point.

We cannot expect an entire epistemology from a few thought experiments, but we can expect some epistemologically significant results. In view of the manifold constraints on philosophical theory of knowledge just reviewed, that is far from nothing. Here I hope to make clear how to appreciate and assess these kinds of thought experiments; I examine and defend their details below, especially in PART 2. Here I consider them in systematic rather than chronological order, beginning with singular cognitive reference (above, §2.3).

3. Hegel on the Semantics of Singular Cognitive Reference

Hegel's phenomenological method involves establishing some positive conclusions through strictly internal critique of the views and principles he opposes, considered in connection with their intended domains of use. About Hegel's method Robinson (1977, 2) observed that '... bad theory makes for bad practice, and the bad practice shows up the logical difficulties of the theory'. In *The Phenomenology of Spirit* (1807), and in his subsequent systematic philosophy, Hegel undertakes to revamp and augment Kant's Critical account of rational judgment and justification, whilst dispensing with Kant's transcendental idealism (and any such view). These aims, together with Hegel's methodological strictures, especially to avoid *petitio principii*, require Hegel (*inter alia*) to argue strictly internally against aconceptual 'knowledge by acquaintance'. This he does in the first chapter of the *Phenomenology*, by using thought experiments concerning commonsense cognitive claims, to elicit our recognition of fundamental and pervasive roles of various concepts and our competent use of them within even the apparently 'simplest' claims to

know anything. The form of consciousness Hegel calls ‘sense certainty’ espouses naïve realism. Hegel’s phenomenological presentation of this paradigmatic naïve realism highlights varieties of ‘mediation’ involved in what sense certainty purports is utterly immediate knowledge. Many of the ‘mediations’ revealed by Hegel’s examples are conceptual and cognitive, involving the competent use of various concepts in connection with various sensed particulars.¹⁵

Anticipating by a century Russell’s early view that ‘this’ is a logically proper name, Hegel queries:

Thus *sense certainty* itself is to be asked: *What is the this?* If we take it in the doubled form of its being, as the *now* and as the *here*, the dialectic which it has within itself will receive just as comprehensible a form as the this itself is. To the question, *What is the now?* we thus answer for example: *The now is night.* A simple experiment suffices to test the truth of this sense certainty. We write this truth down; a truth can lose nothing through writing it down, just as little as by preserving it. If we look *now, this noon*, again at this written truth, we must say that it has become stale.

The now, which is night, is *preserved*, that is, it is treated as what it was given out to be, as a *being*; but it proves itself much more to be a non-being. Of course the *now* itself sustains itself, but as a something that is not night; and it sustains itself just as well against day, which it now is, as something that also is not day, This self-preserving now is thus not something immediate, but instead something mediated, for it is determined as something remaining and self-preserving *through* the fact that another is not, namely the day and the night. Nevertheless it is still as simple as before, *now*, and in this simplicity it is indifferent to that which occurs in it (*PhdG* 9:64.29–65.11)

Hegel’s example and discussion may appear either quaint or confused, but he is a master of taking views absolutely literally and identifying what follows from them, *and* what does *not*, and using these findings to identify further assumptions which allow that view to have appeared plausible or tenable. Hegel does not here distinguish between the ‘is’ of predication, the ‘is’ of being and the ‘is’ of identity, but he is arguing against a view which rejects any and all conceptual distinctions as unnecessary for simple, ‘immediate’ commonsense knowledge of anything. Of

15. I argue that Hegel is fundamentally and expressly a Critical philosopher in Kant’s mould in Westphal (2018a), (2020a), (2020c). For critical synopsis of Hegel’s method and critique of naïve realism see Westphal (2009); for their bearing on Russell, see Westphal (2010). Quotations are brief to curtail scholarly digressions fuller quotation would require.

course *we* know how to, and we do, sort out and sequence our experiences of various particulars, and our experiential episodes, but not simply by *sensing* whatever transpires around us! Seeing *that* it is now night, or day, or dusk or dawn is a conceptually mediated, propositionally structured cognitive achievement, however commonsensical, automatic or apparently ‘immediate’ it may appear to us first-person.

Some philosophers have responded (in discussion) to such examples by reporting that they are unaware of using concepts in making any such claims or observations. Perhaps they are unaware of using concepts, but such lack of awareness proves nothing without the further premiss of strong Cartesian self-transparency (*i.e.*, ‘access internalism’). Descartes deceived himself about how self-transparent were his own clear and distinct ideas (Westphal 2014, §4.1); so too do naïve realists. Here we begin to appreciate the point and character of Kant’s transcendental inquiries, which Hegel further developed, to try to identify basic capacities we must, can and do exercise in order to be sufficiently self-aware as to wonder (*e.g.*) about the scope and character of human cognisance. Like Kant’s, Hegel’s cognitive psychology accords well with much recent cognitive science (deVries 1988, 2013; Ziemke 1992, 1994). Like Kant’s, Hegel’s cognitive psychology invokes and so seeks to identify accurately subpersonal cognitive functions which must be sufficiently reliable to enable us to be perceptually aware of our surroundings, and self-consciously aware of our perceiving our surroundings.

As for distinguishing the ‘is’ of identity and the ‘is’ of predication, in ‘Sense Certainty’ Hegel *justifies* this distinction by *reductio ad absurdum* of aconceptual naïve realism, which disregards their distinction. This point comes to a head when sense certainty retrenches to an alleged specious present awareness of any one particular (*PhdG* 9:67.23–32). Hegel continues his pursuit:

The *now* is pointed out, *this now*. *Now*; it has already ceased to be as it is pointed out. The *now* that *is*, is an other than the one pointed out, and we see, that the now is just this: insofar as it is, already no longer to be. The now, as it is pointed out to us, is something that *has been*, and this is its truth; it doesn’t have the truth of being. It is therefore of course true that it has been. However what *has been*, is in fact *no being*; *it is not*, and the concern was with being.

We thus see in this pointing out only a movement taking the following course: 1) I point out the now; it is maintained as the true. But I point it out as passing, or as something sublated. Thus I sublate the first truth and 2) now I maintain as the second truth, that it *has been*, or is sublated. 3) But what has been is not. I sublate the second truth, its having been or its being sublated. Thus I negate the negation of the now, and thus return to what was first maintained:

that *now* is. The now and the pointing out of the now are thus so constituted, that neither the now, nor the pointing out of the now, is an immediate simple; instead, each is a movement which contains distinct moments within itself; But this now, which is reflected in itself, is not exactly the same as what it first was, namely, something *immediate*. Instead, it is just *something reflected within itself*, or a *simple* which remains what it is in other-being; a now that is absolutely many nows. And this is truthfully the now; the now as a simple day that has many nows within it, hours; such a now, an hour, is just so many minutes, and this now similarly is many nows and so on. – *Pointing out* is thus itself the movement which pronounces what the now is in truth, namely a result, or a plurality of nows taken together; and pointing is the experience, that now is a *universal*. (*PhdG* 9:67.33–68.21)

If Hegel's points may now be obvious to us demonstrative sophisticates, that does not make them insignificant. Hegel points out that any specific *use* of the concept 'time' involves specifying in context some relevant *period* of time; in adjoining paragraphs he makes the parallel points about using the concept 'space', 'region of space' and the personal pronouns (first-, second- or third-person), and how specifying (sufficiently, if approximately) the relevant scope of what is 'here' and 'now' – and *S/he* to whom it is so – is required to designate any specific individual as *this* particular here and now – or that one there and then, or witnessed by you or by her when- and wherever it was located and localised by Someone in particular. Our use of none of these concepts or terms is pointillistic, as it were; all of them are determinable concepts; their relevant scope and reference must – and can only be – be fixed (*i.e.*, specified, 'determined') *in situ*. Using these determinable concepts in such determinate ways, specifying their scope in context, is necessary for forming even the most ordinary commonsense knowledge, including any seeing *that* ____ such and so is the case (*e.g.*, that the tire there in plain view is flat, to borrow Dretske's example; *SK* 127, 132).

In the final two paragraphs Hegel makes the further point, like Evans (1975), that fixing *in situ* the relevant scope and reference of whatever in particular one claims to know about, requires not just descriptive intension (classification), but *ascriptive* attribution of characteristics to specific, localised individuals (or their aspects, features) which we (putatively) delimit within space and time. Hegel expressly notes – like Kant, *contra* Leibniz – that however extensive or detailed a description may be, it may equally well describe several individuals, none at all, or perhaps (by sheer contingent luck) only one: which case obtains is neither specified nor settled by that description (intension, classification), but instead by localising some putative individual(s) to which one ascribes some characteristics (*PhdG* 9:70.20–29).

In this way, Hegel argues by using these and related thought experiments to identify and facilitate our appreciation of logically contingent, though fundamental and pervasive features of *our* cognitive capacities, competences and achievements. Taken together, Hegel's examples constitute a *reductio ad absurdum* of naïve realism, which justifies the Thesis of Singular Cognitive Reference (above §2.3). This decisive, incisive thesis is Kant's, though he left his readers to find it in the joint implications of the Transcendental Aesthetic and the Amphiboly of the Concepts of Reflection.¹⁶

Hegel's initial characterisation of a 'universal' (concept) matches exactly that introduced by Hume in his account of distinctions of reason (*T* 1.1.7.17–18), which marks the downfall of concept empiricism: Hume's official 'copy theory' of sensory impressions and ideas, together with this three official 'laws' of psychological association, can at most account for classifications of sensed characteristics, as fine- or coarse-grained as one can perceptually discriminate. However, to account for merely determinable concepts, such as 'time', 'period of time', 'space', 'region of space', 'I', 'physical object' ('body') or 'word', Hume can only appeal to our 'imagination', but for these capacities of the imagination Hume can offer no *empiricist* account (Westphal 2013a).

Finally, the Thesis of Singular Cognitive Reference (§2.3) can be seen to undergird O.K. Bouwsma's (1949) brilliant exposé and critique of Cartesian scepticism. Bouwsma exhibits how the evil genius's deceptive strategies can only evade the protagonist Tom's detection by obviating any experiential *reference* by Tom to any evidence or indicator of deception. Bouwsma's critique neither invokes nor requires any specific account of conceptual or linguistic content (intension); hence it is not verificationist.

The general corollary to that Thesis is this: Global sceptical 'hypotheses' are hypotheses in name only, because they lack any determinate, specifiable reference (ascription) *to* any particulars alleged to be responsible for blocking the veridicality (or the justification) of any and all sensory experience. They must prescind from any such referential ascription so as to evade both empirical investigation and also self-refutation. By evading reference in these ways, they fail to be even *candidate* cognitive claims; they are mere logical possibilities, with *no* assessable truth-value, accuracy or cognitive justification. In all three regards they lack cognitive standing, and so cannot serve to defeat or to undermine the cognitive justification of any claim with cognitive status, even as putative knowledge (ascriptive attribution to some localised, putative individuals), however approximate or weakly justified it may be. Both Kant and Hegel recognised that fallibilism about cognitive justification is no sceptical

16. It was brought to my attention by Melnick (1989); I develop it in *KTPR*, and much more exoterically below, in accord with Bird (2006a).

capitulation. Conversely, this is why pure conceptual analysis alone is insufficient for epistemology; that was the key lesson of Gettier (1963), which brought down that conceptual house of cards (epistemology as pure conceptual analysis).

4. Kant on the ‘Transcendental Affinity’ of the Sensory Manifold

Taunting Leibniz, Hume (*En* 5.21) noted that his view of human concept- and belief-formation through customary habituation affords, as it were, a pre-established harmony between the order of nature and the order of thought. Hume is right about our cognitive dependence upon perceptible natural regularities, though his empiricism precludes its full appreciation. Kant noted that, although all human knowledge begins with experience, it does not for that reason all result from experience (B1). For all the sophistication of Kant’s account of the *a priori* concepts, principles, structures and functions of the human mind, he insisted that our cognitive capacities only become active in response to sensory stimulation *ab extra*. Though necessary, sensory stimulation as such is insufficient: It must be such that we can process it, by bringing it under concepts in judgments whereby we classify and identify (at least putatively) various particulars (objects, events, structures, processes or persons) surrounding us. This basic point holds, *mutatis mutandis*, Kant argues, regarding the contents of sensations, of empirical intuitions, of experiences and of the objects we experience.

Kant’s thesis is that unless the contents of one’s sensations have a minimum, humanly recognisable degree of regularity and variety they would not admit of perceptual synthesis, and so would provide no basis for even putative cognitive judgments using either *a priori* or empirical concepts. This ‘affinity’ (associability) of the sensory manifold is transcendental because *a priori* it is a necessary condition of possible apperceptive (self-conscious) human experience (of oneself *as* being aware of some appearances appearing to occur before, during or after others).¹⁷ It is formal because it concerns the orderliness and orderability of the contents of sensations. However, ultimately it is satisfied neither by the *a priori* intuitive conditions of experience (spatiality and temporality as forms of our sensory receptivity) nor by the *a priori* conceptual conditions of cognitive judgment. Its satisfaction is due to the ‘content’ or the ‘object’ of experience (A112–3, A653–4/B681–2).

17. This parenthetical clause restates Kant’s Thesis to his Refutation of Idealism (B275) and distinguishes Kant’s premiss from Descartes’ (see below, §§33, 40, 54–59). I shall not repeat this qualification every time I mention Kant’s view about self-conscious (apperceptive) human experience, I shall merely recall the qualification by using Kant’s term ‘apperception’.

Appearances must be associable if we are to be able to make any cognitive judgment(s) at all. This associability, Kant argues, must have an objective, necessary ground if experience is to be at all possible for us. This ground Kant calls the ‘affinity’ of the sensory manifold. He argues for it using a wildly counterfactual thought experiment:

Now if this unity of association did not also have an objective ground, . . . it would be entirely accidental that appearances should fit into a connection in human knowledge. For even though we should have the capacity to associate perceptions, it would remain entirely undetermined and accidental *whether they themselves were associable*; and in case they were not associable, then a multitude of perceptions, and indeed an entire sensibility would be possible, in which much empirical [sensation] would occur within my mind, but separated, and without belonging to *one* consciousness of myself, which, however, is impossible. For only because I ascribe all perceptions to one consciousness (original apperception) can I say of all perceptions that *I* am conscious of them. There must, therefore, be an objective ground . . . upon which rests the possibility, indeed, the necessity, of a law that extends to all appearances – a ground, namely, for regarding all appearances as data of the senses that must be associable in themselves and subject to universal rules of a thoroughgoing connection in their reproduction. *This objective ground of all association of appearances I entitle their affinity*. . . . According to this principle all appearances, without exception, must so enter the mind or be apprehended, that they conform to the unity of apperception. Without synthetic unity in their connection, which is thus objectively necessary, this would be impossible. . . . (*KdrV* A121–3; emphases added)

In this passage Kant points out that an intact and complete human sensibility and understanding, capable of associating perceptions, does not of itself determine whether any appearances or perceptions it has are in fact associable. If they weren’t, there may be fleeting, random sensations, but there could be no unified, and hence no self-conscious, experience. The necessity of the associability of the sensory manifold is *conditional*; it holds between that manifold and any self-conscious human being (*S*). Necessarily, if a human being is self-consciously aware of anything *via* any sensory manifold (any plurality of sensations), then the content of that manifold is associable. The associability of this content is its ‘affinity’. Because such sensory affinity is necessary for possible self-conscious human experience, this affinity is transcendental.

Kant stresses the transcendental status of this issue in the following passage, though here he speaks of a ‘logical law of genera’ (pertaining

to possible classifications of repeatables) instead of the ‘transcendental affinity’ of the sensory manifold:

If amongst the appearances offering themselves to us there were such a great a variety . . . of content [*sic*], *i.e.*, regarding the manifoldness of existing beings – that even the most acute human understanding, through comparison of one with another, could not detect the least similarity (a case which can at least be thought), then the logical law of genera would not obtain at all, no concept of a genus, nor any other universal concept, *indeed no understanding at all would obtain*, since the understanding has to do with such concepts. The logical principle of genera therefore presupposes a transcendental [principle of genera] if it is to be applied to nature (by which I here understand only objects that are given to us). According to that [latter] principle, sameness of kind is necessarily presupposed in the manifold of a possible experience (even though we cannot determine its degree *a priori*), because *without it no empirical concepts and hence no experience would be possible*. (*KdrV* A653–4/B681–2; emphases added.)

Despite Kant’s shift in terminology, the minimum condition which satisfies the ‘logical law of genera’ likewise satisfies the ‘transcendental affinity’ of the sensory manifold: Below a certain (*a priori* indeterminable) degree of regularity and variety amongst the contents of sensations, our understanding cannot make judgments; consequently under that condition we cannot be self-conscious (because we cannot identify ourselves *as* being self-consciously aware of anything else). Consequently, this condition is a necessary, transcendental condition for the possibility of self-conscious experience. Above this minimal level of regularity and variety, there is then a reflective issue about the extent to which we can systematise (integrate) our experiences of the world. Insofar as we must use concepts to see *that* anything is or is not the case, we can only do so within a world exhibiting humanly identifiable kinds of variety and repeatability amongst the particulars we experience.¹⁸

Kant’s example of what we may call ‘transcendental chaos’, *i.e.*: sensory contents so irregular we could not detect any regularities or varieties amongst them, provides a thought experiment which strongly supports the view now called mental content externalism. Kant expressly grants that transcendental chaos is logically possible; his transcendental point is that such chaos cannot hold of any world (of any environment) of which we human beings can be aware, nor within which we can be aware of ourselves *as* being aware of some sequences of appearances occurring before, during or after other sequences of appearances. (Nothing

18. I discuss Kant’s examples and also Wittgenstein’s (below, §5) in greater detail in §§7–11.

yet turns on whether any of these appearances be veridical. Kant's link between these forms of awareness is examined below, (§§19–60.) If Kant's thought experiment about transcendental chaos is correct, it provides sufficient ground to block the sceptical generalisation from occasional possibility of perceptual error or misjudgment to the alleged possibility of universally nonveridical sensory 'experience'. The point of Kant's thought experiment lies neither in the question whether a world of sensory chaos is logically possible, nor in the question whether an unfortunate human being might possibly be flooded with incomprehensibly chaotic sensations. The reflexive, transcendental character of Kant's thought experiment lies in the question, whether *you*, dear reader, could be self-aware within a world in which your sensibility were flooded only by incomprehensibly chaotic sensations?

Kant's thought experiment may not be decisive, but it is bolstered by his analysis of the kinds of conceptual, judgmental achievements required to integrate sensations into percepts, and percepts into perceptual episodes, and those required to use the first-person pronoun. Those analyses do not rely on thought experiments, but rather upon considerations of what is necessary for us to process and integrate sensory information over time (and through space).¹⁹ It is worth noting here, however, that Hegel's thought experiments *contra* naïve realism (§3) and Kant's thought experiment regarding transcendental chaos nicely complement each other. This holds too of the third thought experiment, from Wittgenstein (§5).

Kant himself did not work out the full implications of his transcendental thought experiment about sensory chaos, for a reason later noticed and exploited by C.I. Lewis (*MWO*). Fully developed, Kant's thought experiment can replace much of the 'Transcendental Deduction of the Pure Categories of the Understanding', and it refutes Kant's Transcendental idealism – supporting instead Lewis's robust pragmatic realism, including his pragmatic conception of the relativised *a priori* (see below, §13).

5. Wittgenstein on Thought and Pervasive Regularities of Nature

The thought experiments considered in this chapter comport with this aim of Wittgenstein's:

Not empiricism and yet realism in philosophy, that is the hardest thing. (Wittgenstein, *RFM* vi, §23; p. 325)

19. See Guyer (1989), Strawson (1989); on Kant's identification of our basic logical forms of judgment see Wolff (2017), (forthcoming).

In a note to the *Investigations*, Wittgenstein observes:

What we have to mention in order to explicate (*zur Erklärung*) the significance, I mean the importance, of a concept, are often extremely general facts of nature. Such facts as are hardly ever mentioned because of their great generality. (*PI* §142*n*.)

Wittgenstein sternly advised caution whenever a philosopher starts talking about how things must be.²⁰ Yet caution about how things ‘must’ be is consistent with pointing out how things must be, under specified conditions. For example, Wittgenstein showed forcefully that we can use language and can follow rules only within and due to our relatively stable and identifiable social and worldly context (Savigny 1991, Schroeder 2001, Travis 2006, Wright 1986).

To highlight the character and significance of ‘extremely general facts of nature’ Wittgenstein develops and suggests some very radical, probing thought experiments. One such experiment begins with a chair which disappears, or at least seems to occasionally, though at other times we can touch it (*PI* §80). Occasions such as these are perplexing, but Wittgenstein underscores their significance by radicalising the suggested instabilities of our surroundings:

Only in normal cases is the use of a word clearly prescribed to us; we know, have no doubt, what to say in this or that case. The more abnormal the case, the more doubtful it becomes what we now are to say here. And if things behaved quite differently from how they actually behave – if there were for instance no characteristic expression of pain, of fear, of joy; if rule became exception and exception rule; or if both became phenomena of roughly equal frequency – this would make our normal language games lose their point (*Witz*). – The procedure of putting a lump of cheese on a balance and fixing the price by the turn of the scale would lose its point if it frequently happened that such lumps grew or shrank for no obvious reason. (*PI* §142)

Wittgenstein draws attention to how our language is governed in ways that suit the nature we know and live in. His considerations highlight a crucial *conditional* necessity, that to have any point or any use at all, the structure of our language must broadly comport with the structure of the world we inhabit (*PI* II §*xii*).

20. Cf. *PI* §§81, 101, 131; *RFM* II §41, III §§30 ¶2, 31 ¶1, VI §§7, 8, 24, 46, VII §67.

Wittgenstein invites us to imagine these wildly counterfactual circumstances:

If a ruler expanded to an extraordinary extent when slightly heated, we would say – in normal circumstances – that that made it *unusable*. But we could think of a situation in which this was just what was wanted. I am imagining that we perceive the expansion with the naked eye; and that we ascribe the same numerical measure of length to bodies in rooms of different temperatures, if they measure the same by the ruler which to the eye is now longer, now shorter.

It can thus be said: What is here called ‘measuring’ and ‘length’ and ‘equal length’, is something different from what we call those things. The use of these words is different from ours; it is *akin* to it; and we too use these words in a variety of ways. (*RFM* I §5, *cf.* §140)

Wittgenstein’s example is expressly enthymematic. The situation in which the rapidly expanding ruler is ‘just what was wanted’ is one in which there are, not just rooms of various temperatures, but also many other objects which expand readily (and very nearly at the same rate) with changes in temperatures, just like the ruler. Such a regularity would give sense to the imagined, non-standard practice of measuring. This imagined non-standard measuring practice underscores ways in which our standard measuring practices are rooted not only in arithmetic but also in very general regularities of nature: Most particulars we ordinarily deal with do not expand dramatically with small changes in temperature. Wittgenstein’s examples also underscore the importance of the scientific practice of specifying critical quantities like density by reference to standard temperature and pressure.

Wittgenstein’s thought experiments invite us to reflect on cases where ‘things behave quite differently from how they actually behave, . . . if rule became exception and exception rule’ (*PI* I §142). This suggests a massive inversion of typical regularities, by which the common rule would become the isolated instance whilst normally bizarre cases would become ubiquitous. Consider a world in which things in our environment did not conserve their quantities, either of volume, or weight or number; imagine that they melded together like drops of viscous liquid or bits of soft dough, but without preserving mass, volume or shape in any noticeable way. If such non-conserving goo congealed or parted relatively slowly, perhaps we might be able to track some portions of it. If instead their behaviour were quite rapid, we could not track them. If this were our environment, we could not identify these items (even if there were ‘items’), we could not count them, and we could not develop or use arithmetical concepts.

The transcendental character of Wittgenstein's examples are plainest in *On Certainty*.²¹ Wittgenstein again stresses the role of identifiable, stable natural regularities for the very point of our language games (OC §513, cf. §505); without such regularities truth and falsehood would be impossible (OC §514). This is one of Wittgenstein's 'fundamental' statements, statements that are neither logical truths nor results of empirical investigation (OC §§110, 138, 402, 494, 512); *i.e.*, they defy Hume's fork. Nevertheless, they form the stable basis, rooted in practice (OC §§7, 29, 110, 139, 402), without which we simply could not think (OC §§403, 506), hence not even about ourselves. Wittgenstein's reflections are genuinely transcendental because they concern the contingent, conditional necessities which must be satisfied if self-conscious human thought or experience is to be at all possible for us.

Inspired by Wittgenstein, Waismann (1945) detailed the 'porosity' or 'open texture' of all empirical concepts, which precludes any conclusive (empiricist) verification of any empirical claim. Likewise our empirical classifications of individuals, their features and their kinds remain in principle and in practice corrigible. Waismann's points are important scores against infallibilist presumptions about cognitive justification. Similarly inspired, and likewise critical of infallibilist presumptions about cognitive justification, Austin (1946) suggested we consider this radical thought experiment:

'Being sure it's real' is no more proof against miracles or outrages of nature than anything else is or, *sub specie humanitatis*, can be. If we have made sure it's a goldfinch, and a real goldfinch, and then in the future it does something outrageous (explodes, quotes Mrs. Woolf, or what not), we don't say we were wrong to say it was a goldfinch, we don't know what to say. Words literally fail us (Austin 1946, 160; 1979, 86)

Austin is right that infallibility is humanly impossible, certainly within the domain of empirical knowledge. That is important, yet insufficient. Reflecting on these examples and on Wittgenstein's, Frederick Will (1968) observed that not merely words fails us in such bizarre cases: thought itself fails us. We very finite, semi-rational human beings can only think insofar as we inhabit a tolerably comprehensible, negotiable, sufficiently describable, identifiably regular world.²²

21. My remarks on *On Certainty* are indebted to notes kindly shared with me by Graham Bird.

22. Travis (2009, 258–9, 261) unmistakably alludes to these Austinian considerations; Williamson (2009b) neglects them and their crucial contextual point about the legitimate, humanly possible cognitive *use* of predicates.

6. Conclusions

Global perceptual scepticism presumes we have far greater capacities for intelligent thought, speech and (apparent) ‘experience’ than we do. That can be shown by transcendental use of these sorts of thought experiments, provided philosophers recognise that the tasks of epistemology too – as Kant recognised (A805/B833) – are comprehended within Thales’ commandment, inscribed at Delphi: ‘Know thyself!’ Rescinding infallibilism and mere conceptual analysis, and recognising our manifold if indirect and often implicit dependence upon our environs, both natural and social, are the beginnings of epistemological insight, which can be fostered and informed by transcendental use of epistemological thought experiments, though only if we change fundamentally our philosophical ‘method of thinking’. How, why and to what ends to do so are central topics of the present study.

2 Kant, Wittgenstein and Transcendental Chaos

What we have to mention in order to explicate [*zur Erklärung*] the significance, I mean the importance, of a concept, are often extremely general facts of nature. Such facts as are hardly ever mentioned because of their great generality. (*PI* §142*n*.)

7. Introduction

Much – often too much – has been made of comparisons between Kant’s and Wittgenstein’s later philosophy. I shall be cautious, though I am more interested in a philosophical point than in scholarly controversy about whether this was one of ‘Wittgenstein’s’ points. I shall suggest that there are philosophically revealing points of comparison between one of Kant’s key arguments and one of Wittgenstein’s important lines of thought, neither of which has yet received its philosophical due. (Previously the point was noted and developed only by Hegel and by C.I. Lewis.)

8. Realism Without Empiricism?

I begin with a thought of Wittgenstein’s that has become a *Leitmotif* in recent discussions:

Not empiricism and yet realism in philosophy, that is the hardest thing. (Against Ramsey.)¹

This chapter concerns a specific way of justifying realism about ordinary objects and events around us in space and time. The relevant kind of realism is that physical objects and events exist and have at least some

1. Wittgenstein, *RFM*, vi §23, p. 325. Nearly all translations from Wittgenstein have been emended, usually to a small degree, without further notice. The quoted statement is discussed in detail by Diamond (1991), ch. 1. Here I develop a different aspect of Wittgenstein’s point.

characteristics, regardless of what we think, say, or believe about them.² Put transcendently, the thesis of this chapter is: Did we not inhabit such a world and were we not cognisant of such a world, we could not so much as *be* self-conscious, and so could not even entertain sceptical doubts about our worldly circumstances. Certainly this justification for realism is not empiricist. This thesis is a synthetic proposition we can know (justify as true) *a priori*. It is transcendental because it concerns an *a priori* way of knowing a key feature of human cognition (*cf.* B25), based on the very possibility of our enjoying self-conscious experience of (even apparent) worldly events (*cf.* B275). Orthodox Wittgensteinians will protest that Wittgenstein rejected *a priori* argument, and that he severely cautioned us to be careful any time a philosopher starts talking about how things must be.³ Indeed we must. However, being careful about how things ‘must’ be is consistent with pointing out how things must be, at least under specified conditions – provided we *are* careful about it. Wittgenstein’s cautions about such ‘musts’ didn’t preclude his showing forcefully that private language is impossible (Wright 1986), and that rules cannot be followed in the abstract, algorithmic individualist way too often supposed by formalists, deductivists, empiricists and naturalists of many stripes.⁴ Nor did it prevent him from showing forcefully that we can use language and can follow rules only within and because of our relatively stable and identifiable social and worldly context.⁵ This point is the topic of the present chapter.

The line of argument I shall develop reconsiders the phenomena that gave rise to the notion that our empirical concepts have an ‘open texture’. To say that empirical concepts have ‘open texture’ is to say that identifying objects or events by subsuming them under our concepts cannot and does not preclude those objects behaving in ways that defy our conceptual classifications, or our expectations based on those classifications. Philosophers noticed this ‘open texture’ in connection with what Leibniz called ‘bizarre fictions’: Leibniz’s (*NE* 3.6.22) angels or inhabitants of the moon who display rational thought, speech, and action like humans, but who have extraordinary powers or machines; Waismann’s (1945, 122) friend who disappears and reappears (or at least seems to), and his cat which grows gigantic or revives in circumstances where cats surely die;

2. I deliberately disregard here Kant’s contrast between ‘empirical’ and ‘transcendental’ realism. This distinction requires Kant’s transcendental idealism. For reasons indicated below (§10), I do not think Kant’s transcendental idealism is tenable.
3. *Cf.* Wittgenstein, *PI* §§81, 101, 131; *RFM* II §41, III §§30 ¶2, 31 ¶1, VI §§7, 8, 24, 46, VII §67.
4. ‘Hence ‘to follow the rule’ is a practice. And to *believe* one follows the rule is not: to follow the rule. And thus one cannot follow the rule ‘privately’, because otherwise to believe one follows the rule would be the same as to follow the rule’ (*PI* §202; my tr.).
5. About the role of social context in rule-following, see von Savigny (1991). About the role of natural, environmental regularities in these issues, see Schroeder (2001). The most probing reconstruction of Wittgenstein’s points against private language as an argument is Wright (1986).

Austin's (1946, 160) goldfinch which explodes, or quotes Virginia Woolf, or 'does something outrageous'. On the basis of such examples, these philosophers drew the following conclusions:

1. None of our empirical terms have or can have complete definitions;
2. We don't have fully explicit or explicable rules for using empirical terms;
3. Conclusive verification of empirical statements is impossible;

or

4. Future experience can always make us revise, not simply our claims, but the very concepts we use in formulating those claims.

Whilst these philosophers noticed these puzzling kinds of cases and concluded that they show something important about human understanding, they did not develop their analyses beyond the conclusions just noted.⁶ These conclusions are significant, but there is something much more significant involved in the phenomena illustrated by such examples. This fundamental point is touched upon by Austin's (1946, 160) negative remark that in such cases 'we don't know what to say' because 'words literally fail us', and by Leibniz's (*NE*, 3.6.22) positive remark that 'we are spared these perplexities by the nature of things'.

Wittgenstein initiated the analytic discussion of 'open texture', though not under that name, with his example of a chair that disappears, or at least seems to sometimes, though at other times we can touch it. From this example he concluded that the meaningful use of terms neither requires nor involves fixed and definite rules (*PI* §80). This conclusion is correct, but to stop here – as Leibniz, Waismann, Austin and their legion of followers did – is to miss a very powerful line of Wittgenstein's reflections.

Wittgenstein pursues these reflections on the apparently disappearing chair further in this passage:

Only in normal cases is the use of a word clearly prescribed to us; we know, have no doubt, what to say in this or that case. The more abnormal the case, the more doubtful it becomes what we now are to say here. And if things behaved quite differently from how they actually behave – if there were for instance no characteristic expression of pain, of fear, of joy; if rule became exception and exception rule; or if both became phenomena of roughly equal frequency – this would make our normal language games lose their point (*Witz*). – The procedure of putting a lump of cheese on a balance and fixing the price

6. These conclusions are summarised by Waismann (1945), 122–7.

by the turn of the scale would lose its point if it frequently happened that such lumps grew or shrank for no obvious reason. (*PI* §142)

In this passage Wittgenstein mentions regularities of human nature alongside regularities amongst objects in our environment. Though Wittgenstein doesn't insist on it, one key point is clear: Both kinds of regularities are necessary for our having a stable and effective language at all. One reason to pay attention to both kinds of regularities, regularities of human nature and regularities of our environment, is straight-forward: The natural history of human nature is not an isolated event, it is completely intertwined with our adaptation to and our activities in our physical environment.

Though he certainly does not present an evolutionary epistemology, much less one along Darwinian lines, Wittgenstein does call his view a kind of natural history of the species:

What we supply are really remarks on the natural history of man; not curiosities however, but rather specifications (*Feststellungen*) of facts which no one has doubted, and which have only gone unnoticed because they are always before our eyes. (*RFM I* §142)

Stroud (1966, 490) cites this remark, and construes the 'facts' in terms of contingent features of the constitution of human nature. This is gratuitously narrow. Environmental regularities are equally crucial. This receives unexpected support from Russell, who noted:

. . . when you count, you count 'things', but 'things' have been invented by human beings for their own convenience. This is not obvious on the earth's surface because, owing to the low temperature, there is a certain degree of apparent stability. But it would be obvious if one could live on the sun where there is nothing but perpetually changing whirlwinds of gas. If you lived on the sun, you would never have formed the idea of 'things', and you would never have thought of counting because there would be nothing to count. In such an environment, . . . what we consider common sense would appear as fantastic metaphysical speculation. (Russell 1956, 41–2).

Exactly why Russell insists that "things" have been invented by human beings for their own convenience' is not made clear, though it resonates with the conventionalism inherent in Russell's various constructivist programs. However, we can 'invent' things – or rather, the classification ('idea', Russell says) 'things' – for our convenience only if we're self-conscious, and our being self-conscious is far from the obvious, independent starting point Russell took it to be. Unsurprisingly, Russell overlooked the transcendental import of his observation.

Such insensitivity to transcendental issues runs through the analytic tradition and persists in the ‘logical orthodoxy’ central to Williamson’s ‘knowledge first’ approach to epistemology. (Williamson’s ‘logical orthodoxy’ is in fact an empiricist semantic orthodoxy.) In 1922 Russell (*CP* 9:39) proclaimed: ‘I should take ‘back to the 18th century’ as a battle-cry, if I could entertain any hope that others would rally to it’. The Eighteenth Century Russell recommended was epitomised by Hume, not Kant. Quine (1953, 17–18, 44; 1969a, 83–4) wanted to ‘let consciousness fall where it may’, though he insisted that ‘physical objects’ are a ‘posit’ we make to provide the simplest account of our sense-stimuli. To ‘assign’ sense stimuli to any individual object requires that we are self-conscious. Either Quine is not entitled to ‘let consciousness fall where it may’, or he is not entitled to his account of physical objects as a simplifying ‘posit’. Either way, his account is that of a doctrinaire empiricist having as little transcendental sensitivity as Russell. Quine (1969a, 72, *cf.* 74, 76) stated, ‘on the doctrinal side, I do not see that we are farther along today than where Hume left us. The Humean predicament is the human predicament’. Central to the Humean predicament is Hume’s fork, according to which the only propositions we can know *a priori* are analytic (‘relations of ideas’), whilst we can only know synthetic propositions (‘matters of fact’), if at all, *a posteriori*. Also central to the Humean predicament is the Cartesian view that our self-awareness is a given, that our sensory states are exactly what they appear to us to be, and that the philosophical task is to see what else, if anything, we can know on their basis by logical deduction from this presumed evidence base. Officially, Hume is no less an infallibilist about (cognitive) justification than Descartes. Famously, Quine rejected the analytic/synthetic distinction and on the basis of his semantic holism rejected the distinction in kind between the *a priori* and the *a posteriori*.⁷ None of these shifts, however, affect the most basic Cartesian orientation of Quine’s philosophy, namely, that he, too, believed unquestioningly in the priority of inner experience over outer experience. This is evident, *e.g.*, in his (1969a, 155, *cf.* 158; 1990, *xii*) declaration, ‘Save the surface [of the sentient body] and you save all’; likewise, ‘In experimentally equating the uses of “Gavagai” and “Rabbit” it is stimulations that must be made to match, not animals’ (Quine 1960, 31). Due to our (alleged) Humean predicament, the stimuli to be ‘matched’ can only be one’s own; ‘radical translators’ must be human, too, and so must share our (alleged) predicament. Yet how Quine proposes to reconcile this staunch internalism with his behaviouristic approach to ‘meaning’ is puzzling, to say the least, because the ‘inscrutability of reference’ and the ‘indeterminacy of translation’

7. However, see Creath (1991).

preclude what behaviourist psychology requires, namely, precisely identifying environmental objects and events to which experimental subjects respond and on which they act.⁸

In this, Kant and Wittgenstein have a common opponent and aim: to overthrow the Cartesian tradition, including its empiricist descendants. Kant expressly recognised that this requires us to ‘change our method of thinking’ (Bxviii). Though he didn’t announce it in such terms, Wittgenstein, too, recognised that we must change our method of thinking, our whole way of approaching and thinking about philosophical issues. Wittgenstein’s commitment to this is reflected, *inter alia* in his style, both in the *Tractatus* and in his later writings. There is already a transcendental element in the *Tractatus* (§§5.641, 6.13, 6.361, 6.421) – much more so than these few sections suggest.⁹ One theme common to Kant’s and Wittgenstein’s thought is the rejection of Hume’s fork, reflected in their stress on our knowledge of some key propositions that cut across Hume’s supposedly exhaustive disjunction, and their rejection of infallibilist ideas about (cognitive) justification. Consider further the main thread of Wittgenstein’s idea, which probes deeper than common views of ‘open texture’.

The general issue arising out of the ‘open texture’ of our concepts concerns the extent to which and the ways in which subsuming instances under rules (or classifications) depends on broad and complex features of our aims and practices and of our circumstances. Ignoring these features cripples our understanding even of routine cases of identifying normal objects by bringing them under ordinary concepts of them, even in formally defined domains such as logic or mathematics. (On Wittgenstein’s view, general problems about ‘grammar’ are direct analogues to the general problems he raises about standard views of rule-following, including rules of mathematics.)¹⁰ As Wittgenstein points out, if certain very general facts of nature were different (*PI* II §xii), we wouldn’t and couldn’t have the practices we do, including our arithmetical practices. Wittgenstein doesn’t offer this as any kind of explanatory hypothesis, but as a caution against the notion that any ‘concepts are absolutely the correct ones’. His remark distinguishes his point from Russell’s. Consider the key (middle) paragraph:

I do not say: if such-and-such facts of nature were different people would have different concepts (in the sense of an hypothesis).

8. Quine’s views are examined in critical detail in Westphal (2015a).

9. This issue is highlighted by Conant (1991), though not in these terms. He stresses Wittgenstein’s concern with, in effect, necessary *a priori* conditions for the possibility of thought.

10. Wittgenstein insists that an investigation of the foundations of mathematics can be made which is entirely analogous to his investigations of language (*PI* II §xiv).

Rather: Whoever believes that certain concepts are absolutely the correct ones, where anyone with different [concepts] would not realise (*einsehen*) something that we realise – let him imagine certain very general facts of nature to be different from what we are used to, and the formation of concepts different from the usual ones will become intelligible to him. (*PI* II §xii)

Whilst rightly eschewing any explanatory (much less, causal) hypothesis here, Wittgenstein does draw attention to how our language is governed in ways that suit it to the environs we inhabit and know. This is no ‘absolute necessity’ of the sort that might be involved in any set of concepts that were alleged to be ‘absolutely the correct ones’. However, Wittgenstein’s considerations highlight a crucial *conditional* necessity, that to have any point or any use at all, the structure of our language must broadly comport with the structure of the world we inhabit. (This conditional necessity holds independently of scope or comprehensiveness.) I aim to reinforce this conditional necessity.

I say ‘broadly comport with’ to leave open the question precisely how or in what ways our language and thought comport with the structure of the world. The point of a genuinely transcendental proof is to show that some such relation(s) must obtain in order for us to think at all, or hence to raise questions about whether any (or which such) relations obtain. To insist that these latter questions must be answered *first*, before relying on their use, is to make the fatal Cartesian assumption that (in Kant’s terms) our inner experience has priority over outer experience; that is, that we can and do know what our thought and language are like and how we can and do use (or exercise) them, whilst the problem is to determine whether or how we can think about, discuss or know the world surrounding us, or portions of it. To make this Cartesian assumption is to assume – fatally – internalism about justification and about meaning. Genuinely transcendental proofs reject internalism and involve externalism about justification. In this regard, Kant was the original externalist about cognitive justification, though he has not been recognised as such.¹¹

11. Though Kant is an externalist about some important aspects of cognitive justification, his transcendental proof of realism does not assume externalism as a premiss. Hence his proof does not beg the question against global perceptual scepticism. His brand of externalism only needs to be true, it does not need to be known to be true, to mount his proof. (On this important distinction, see Alston 1989, 153–71, 319–39.) This is not anachronistic; this key distinction is required by the very structure of transcendental proof, in which the *ratio cognoscendi* and the *ratio essendi* of the occurrence of self-consciousness are inversely related. Kant argues that our *de facto* knowledge of some spatio-temporal objects or events is a key *ratio essendi* of the very possibility of human self-conscious experience. Once this proof is understood, the mere fact of our own self-conscious experience is then the *ratio cognoscendi* for knowing – *pace* the sceptic – that we do have at least some knowledge of spatio-temporal objects or events.

Amongst the wildly counterfactual circumstances Wittgenstein invites us to imagine are these:

If a ruler expanded to an extraordinary extent when slightly heated, we would say – in normal circumstances – that that made it *unusable*. But we could think of a situation in which this was just what was wanted. I am imagining that we perceive the expansion with the naked eye; and that we ascribe the same numerical measure of length to bodies in rooms of different temperatures, if they measure the same by the ruler which to the eye is now longer, now shorter.

It can thus be said: What is here called ‘measuring’ and ‘length’ and ‘equal length’, is something different from what we call those things. The use of these words is different from ours; it is *akin* to it; and we too use these words in a variety of ways. (*RFM* I §5; *cf.* §140)

Wittgenstein’s example is enthymematic.¹² The situation in which the rapidly expanding ruler is ‘just what was wanted’ is one in which there are, not just rooms of various temperatures, but also many other objects that expand readily (and very nearly at the same rate) with changes in temperatures, just like the ruler. This is an important (counter-factual) regularity that would give sense to this very non-standard practice of measuring. By the same token, this imagined non-standard measuring practice underscores ways in which our standard measuring practice is rooted not only in arithmetic but also in a very general regularity of nature, namely, that most of the objects we ordinarily deal with do not expand dramatically with small changes in temperature. (It also underscores the importance of the scientific practice of specifying critical quantities like density by reference to standard temperature and pressure.)

Wittgenstein’s thought experiments invite more radically counterfactual cases. Recall part of a passage quoted earlier:

Only in normal cases is the use of a word clearly prescribed to us; we know, have no doubt, what to say in this or that case. The more abnormal the case, the more doubtful it becomes what we now are to say here. And if things behaved quite differently from how they actually behave – if there were for instance no characteristic expression of pain, of fear, of joy; if rule became exception and exception rule; or

12. To say that Wittgenstein’s example is enthymematic is not to criticise it, it is only to note that the example must be carefully, thoroughly thought through to make full and proper sense of it. This is obviously important, but it is especially important to the kind of reflection Kant identifies as ‘transcendental reflection’ (below, §§9, 10) which he elicits through a variety of wildly counter-factual examples.

if both became phenomena of roughly equal frequency – this would make our normal language games lose their point (*Witz*). (*PI* I §142)

Wittgenstein here invites us to reflect on cases where ‘things behave quite differently from how they actually behave, . . . if rule became exception and exception rule’. This suggests a massive inversion of typical regularities, far beyond the point at which ‘both’ would be ‘phenomena of roughly equal frequency’. If the rule were to become the exception, then the common rule would become the isolated instance whilst normally bizarre cases would become ubiquitous. Wittgenstein thus describes and proposes thought experiments far more radical than those of Leibniz, Waismann or Austin. I propose to take up Wittgenstein’s invitation and thus to show that he has identified a point of genuinely transcendental import. (Why its import should be called ‘transcendental’ I explain shortly in connection with Kant, §9.)

The limitation of Leibniz’s, Waismann’s and Austin’s reflections on bizarre fictions is that they are too timid: Their examples each consist of one bizarre case within an otherwise normal context. Thus their examples stop far short of Wittgenstein’s point of imagining a case in which the rule became the exception and the exception became the rule. If we are to imagine that the exception were to become the rule, we must imagine that such bizarre cases become statistically normal, or rather altogether prevalent within our experience. Consider again, please, the following, far more radically bizarre case.

Consider a world in which things in our environment did not conserve their quantities, either of volume, or weight or number; imagine that they melded together like drops of viscous liquid or bits of soft dough, but without preserving mass, volume or shape in any noticeable way. One important issue, noted by Russell and Wittgenstein alike, is how quickly these changes occurred. Wittgenstein’s greatly expanding objects expand at a rate noticeable to the naked eye; they provide enough regularity that they can be identified as expanding objects, and measured with a similarly expanding ruler. Analogously, if my counterfactual non-conserving goo only congealed or parted relatively slowly, perhaps we might be able to track some portions of it. Certainly we could if their changes were glacial. But if their behaviour were quite rapid, even if not as rapid as Russell’s picture of the surface of the sun, we could not track them. If this were our environment, we could not identify these items (even if there were ‘items’), we could not count them, and we could not develop arithmetical concepts.

If, as Wittgenstein once suggests (*PI* §142, quoted above), such amalgamation happened roughly half the time, our language game of counting would lose much of its point, because it would lose much of its use. The less quantitatively stable things are, the less stable could be our concepts and practices of counting. But that is not all.

Consider the case in which such rapidly congealing goo were, not merely typical, but the vastly predominant case.¹³ If our environment consisted of such goo, there would not only be nothing to which we could apply our mathematical concepts, there would also be nothing fulfilling the truth conditions of those erstwhile mathematical propositions, nor our (presently) commonsense statements. The ontology of our world is not specified by logic (nor by bivalence) alone. Were it radically different in kind in ways suggested here, we would have no mathematical concepts or principles, and there would be nothing to satisfy the truth conditions of the propositions formulated in those terms, or any other terms we ordinarily use or even could use.

If the world consisted of nothing but objects that did not remain discrete when grouped together; if they congealed like drops of water, but without conserving volume or mass in any regular or identifiable fashion, then there would be no human beings, and any intelligent creatures capable of reckoning would have a radically different way of reckoning than any mathematical system we could imagine. In this way, Wittgenstein draws attention to the contingency of our supposed necessary truths, whilst recognising that we can't really imagine a genuinely alternative mathematics (or logic). In this way, Wittgenstein draws attention to how our practices of counting – and, by extension, our other mathematical and linguistic practices – depend upon very general facts of nature. An alternative logic or mathematics is, as the rationalists maintained, inconceivable. However, that inconceivability does not devolve from Platonic heaven; such inconceivability devolves however indirectly from very general facts about nature and our capacities and abilities to reckon with it.¹⁴ By the same token, because our concepts and language depend upon and are suited to the nature (*res*) in which we live and act, our concepts and language likewise cannot be merely conventional; they cannot be mere matters of convenience or arbitrary 'inventions' in the way Russell blithely supposed.

According to Wittgenstein, the limits of language are the limits of thought.¹⁵ Wittgenstein's reflections on bizarre fictions highlight how the limits of our language depend in part on the limits of recognisable

13. If it were universal, there would be no human beings because there would be no human bodies, nor would there thus be philosophers to puzzle about this situation.

14. The logic to which there is no alternative is a precise restatement of Aristotle's square of logical oppositions, including contra-position (Wolff 2009a). The 'alternative logics' so popular today provide no alternative to those basic logical constants; they provide various more specific *L*-rules (in Carnap's sense), all of which require non-formal semantic or existence postulates. Even logical 'truth tables' (introduced by Wittgenstein) presume non-formal semantic reference. Also see Lewis & Langford (1932).

15. For a devastating critique of the 'ineffability' interpretation of nonsense in the *Tractatus*, see Conant (1991), (2002).

regularities in our environs. To this extent – I submit that this is a very considerable extent – Wittgenstein highlights a crucial conditional necessity: If our environment exhibited no identifiable regularities, we could neither speak nor think *at all*. In that case we also could not be *self-conscious* (as conscious of any appearances appearing to us before, during or after others). It is not just that we would not know what to say, as Austin put it. In such a world we would not know what to think.¹⁶ Indeed, in such a world lacking noticeable regularities we could not think at all, not even about ‘ourselves’. We could not recognise ourselves as subjects who think, or as subjects having specific thoughts or experiences. In such a world there could be no functioning ‘we’ or ‘I’. Wittgenstein’s reflections on bizarre fictions are of genuinely transcendental import.¹⁷

The transcendental character of Wittgenstein’s philosophy appears quite clearly in *On Certainty*.¹⁸ Here, too, Wittgenstein stresses the role of identifiable, stable natural regularities for the very point of our language games (OC §513, *cf.* §505); without such regularities truth and falsehood would be impossible (OC §514). This is one of Wittgenstein’s ‘fundamental’ statements, statements that are neither logical truths nor results of empirical investigation (OC §§110, 138, 402, 494, 512); *i.e.*, they defy Hume’s fork. However, they form the stable basis, rooted in practice (OC §§7, 29, 110, 139, 402), without which we could not think at all (OC §§403, 506) – hence not even about ourselves. I say Wittgenstein’s reflections are ‘genuinely transcendental’ to stress that they concern the very possibility of self-conscious human thought or experience.

16. This is noted by Will (1997, 14), who led me to see the transcendental import of Wittgenstein’s reflections. If I add anything to Will’s pragmatic realism, it is by explicating its transcendental character.
17. Note that I formulated this conditional statement in terms of ‘identifiable’ or ‘detectable’ regularities. If there were no regularities at all, there would be no world, and no perplexed philosophers. The crucial case here concerns a world that has regularities, though either so fleeting or so few that we couldn’t recognise or identify them. In such a world, we could not think. Whilst our explicit identification of regularities may be concept-relative, the basic relevant natural regularities themselves are not. The aim of the argument considered here is to show that our thoughts are, ultimately if indirectly, parasitic upon natural regularities – not *vice versa*. This runs deeply against the nominalist grain of much recent philosophy; I argue further against such ultimately Cartesian views in Westphal (2015a). These views are Cartesian because they assume that inner experience, or our thoughts and thinking, are unproblematic, whilst our cognitive relations to the world, if there are any, are deeply problematic. Though this note is not probative, it should caution the exponents of such nominalist views about questions concerning who is ignoring what or who is begging which questions. The analysis presented here does not assume that our only use of concepts is to identify objects or events by classifying them, though it does argue that without this ability, we could not use concepts in other ways.
18. My remarks on *On Certainty* are indebted to notes on this topic kindly shared with me by Graham Bird.

This is a very strong condition, not at all met by the weaker arguments too often labelled ‘transcendental’ in 20th-century Anglophone philosophy, including Peirce’s. (Those weaker arguments are adequately designated as kinds of ‘presupposition argument’.)

Platonism cannot resolve the issues about the detectable regularity of and variety within our environment because nothing in the resources of Platonism entails anything about either the frequency or the duration with which any one Platonic form is instantiated. With enough forms, only briefly instantiated, Platonism could be true in a world of chaotic flux, though we couldn’t possibly know it. Conversely, conventionalism about our commonsense ontology also cannot be correct, for our commonsense ontology is rooted in our commonsense language, and our language is rooted in the regularities of our natural environment. These regularities may not require any one specific ontology nor limit us to a small set of ontologies, but neither do they allow utterly arbitrary choice or construction of an ontology.

9. Kantian Convergence?

At this point it may appear I have forced a marriage between Wittgenstein’s and Kant’s philosophies. To the contrary, it is not at all forced. Recent ‘analytic transcendental arguments’ tried to establish ‘absolute necessities’ of the kind Wittgenstein eschews, as did Kant. Kant did not seek the conditions for the possibility of self-conscious experience *per se*. He sought the conditions for the possibility of self-conscious *human* experience. Kant recognised that any tenable epistemology must be specific to *our* human forms of understanding and sensibility. Accordingly, one of his key tasks was to establish an inventory of our basic human cognitive capacities, and their attendant incapacities (*cf.* O’Neill 1992, Bird 2006c). To do this, Kant devised several key thought experiments, designed to enable and require us to reflect carefully and clearly on just who *we are* as cognisant subjects. This belongs to the task Kant calls ‘transcendental reflection’, a widely neglected yet fundamental aspect of Kant’s philosophical method.¹⁹

The most familiar of Kant’s thought experiment concerns his claim that we cannot represent to ourselves the absence of space (A24/B38). More sympathetic attention has been given to his claim that each of us must be able to identify our representations as our own, ‘for otherwise I would have as multicolored, diverse a self as I have representations of

19. Kant insists that ‘transcendental reflection is a duty from which no one can escape if he would judge anything about things *a priori*’ (A263/B319). The neglect of ‘transcendental reflection’ in the secondary literature, especially amongst proponents of ‘analytic transcendental arguments’, indicates that Kant’s efforts to ‘change our method of thinking’ have largely fallen on deaf ears; see *KTPR*, ch. 1, Bird (2006c).

which I am conscious' (B134). A third concerns the fact that the three Analogies form a tightly integrated set of mutually supporting principles, so that we can only identify coexistence or succession amongst objects by discriminating each from the other, and each of them from our perceiving each of them.²⁰

These three points are examined below (PART 2); here I discuss a fourth thought experiment. Kant develops some wildly counter-factual circumstances in order to show us that 'only under the presupposition of diversity in nature, just as it is only under the condition, that its objects have homogeneity amongst themselves', are we at all capable of self-conscious experience.²¹ The counter-factual circumstances Kant describes highlight precisely the kind of vastly general natural regularities that, Wittgenstein observed, are scarcely noticed at all. Though Kant makes some unsuccessful attempts to defend absolute necessities,²² this crucial thought experiment establishes an important conditional necessity: the very one highlighted by Wittgenstein.

A crucial feature of Kant's 'formal' idealism is that the matter of experience is given to us *ab extra*. This is itself a transcendental material condition of self-conscious experience (Allison 1983, 250). Kant defended another crucial transcendental material condition of self-conscious experience: the 'transcendental affinity of the sensory manifold'.²³ In brief, this condition notes that any world in which human beings are capable of self-conscious experience is one that must provide us a certain minimal, to us recognisable degrees of regularity and variety amongst the contents of our sensations. In any world lacking this minimum degree of regularity and variety, we could make no judgments, and so could not identify objects or events, and so could not distinguish ourselves from them, and so could not be self-conscious. (This is the nerve of Kant's Transcendental Deduction and Refutation of Empirical Idealism; omitting for now the proviso regarding 'self-conscious' awareness of some appearances appearing before, during or after others.)

This condition is peculiar because it is both transcendental and formal, and yet neither conceptual nor intuitive, but rather material. The transcendental affinity of the sensory manifold is *transcendental* because it is a necessary *a priori* condition of the possibility of self-conscious experience. It is *formal* because it concerns the orderliness and orderability of the matter or contents of sensation. However, ultimately it is satisfied neither by Kant's *a priori* intuitive conditions of experience, space and time as forms of human intuiting; nor by the *a priori* conceptual conditions

20. See below, §§44–60, and *KTPR*, ch. 4.

21. *KdrV* A657/B685, cf. A90–1/B122–3, A653–4/B681–2, A100–1, A108, A121–3.

22. See Guyer (1987), 342–3, 349–50, 354–69; and below, §11.

23. A third such condition is examined by Edwards (2000); for a précis, see my review (2003c).

of experience, Kant's categories (and Principles). As Kant twice acknowledges, its satisfaction is due to the 'content' or the 'object' of experience (A112–3, A653–4/B681–2).

In this connection Kant (A121–3) argues that a complete sensibility and understanding, capable of associating perceptions, does not of itself determine whether any appearances or perceptions it has are in fact associable. If they weren't, there may be fleeting episodes of 'empirical consciousness' *qua* random sensations, but there could be no integrated, and hence no self-conscious, experience (*KdrV*, §§16, 17). In part this would be because those irregular sensations would afford no basis for developing empirical concepts nor for using categorial concepts to judge objects. (There could be no schematism, and hence no use, of Kant's categories in a world that afforded us incomprehensibly chaotic sensations.) In this regard, the necessity of the associability of the sensory manifold is a *conditional* necessity, holding between that manifold and any self-conscious human Subject. Necessarily, if a human subject is self-consciously aware of an object (or event) *via* a sensory manifold, then the content of that manifold is associable. The associability of this content is its 'affinity'. Because it is necessary for the possibility of self-conscious human experience, such affinity is transcendental.

Kant makes the transcendental status of this issue plainest in the following passage, though here speaking of a 'logical law of genera' instead of the 'transcendental affinity of the sensory manifold':

If amongst the appearances offering themselves to us there were such a great a variety – I will not say of form (for they might be similar to one another in that) but of content [*sic*], *i.e.*, regarding the manifoldness of existing beings – that even the most acute human understanding, through comparison of one with another, could not detect the least similarity (a case which can at least be thought), then the logical law of genera would not obtain at all, no concept of a genus, nor any other universal concept, *indeed no understanding at all would obtain*, since it is the understanding that has to do with such concepts. The logical principle of genera therefore presupposes a transcendental [principle of genera] if it is to be applied to nature (by which I here understand only objects that are given to us). According to that [latter] principle, sameness of kind is necessarily presupposed in the manifold of a possible experience (even though we cannot determine its degree *a priori*), because *without it no empirical concepts and hence no experience would be possible*. (*KdrV*, A653–4/B681–2; emphases added.)

Despite Kant's shift in terminology, it is plain that the condition that satisfies the 'transcendental principle of genera' at this fundamental level is the very same as that which satisfies the 'transcendental affinity of the

sensory manifold': In the extreme case suggested by Kant, where there are no humanly detectable regularities or variety within the contents of our sensory experience – 'transcendental chaos' – there could be no human thought, and so no human self-consciousness, at all. Kant establishes this necessary transcendental condition for self-conscious human experience by identifying a key cognitive incapacity of ours: our incapacity to be self-conscious, even to think, even to generate or to use concepts, in a world of transcendental chaos. We can recognise Kant's insight only by carefully considering the radically counter-factual case he confronts us with: By recognising how utterly incapacitating transcendental chaos would be for our own thought, experience and self-consciousness. Recognising this, like recognising any of the incapacities that characterise human cognition, requires transcendental reflection.²⁴

Kant's transcendental proof establishes a conditionally necessary constraint on the sensory contents afforded us by any particulars we experience.²⁵ Below a certain (*a priori* indeterminable) degree of regularity and variety amongst the content of empirical intuitions, our understanding cannot form empirical concepts nor make judgments; consequently we cannot under that condition think nor (hence) be self-conscious. There would be no functioning 'we' or 'I' at all. Above this minimal level of regularity and variety, there is then a reflective issue about the extent to which our experience of the world can be systematised. (To this level pertain Peirce's abductive arguments for 'generals'.)

This completes (this brief conspectus of) Kant's *reductio* argument, supporting his transcendental thesis: If we humans are self-conscious, then there are at least some identifiable regularities and varieties amongst whatever appears to us. To this extent, Kant's argument concerning the transcendental affinity of the sensory manifold reinforces the conclusion of his Refutation of Empirical Idealism, namely: We humans can

24. Careful readers will notice that the above passage concerns regularity and variety amongst experienced phenomena, though above I stressed that the transcendental affinity of the sensory manifold concerns regularity and variety amongst the contents of sensations. Exactly the same issue arises at both levels, which are in Kant's view linked. Kant's argument about this 'Logical Law of Genera' closely parallels his argument about the transcendental affinity of the sensory manifold; both concern the recognisable orderliness of what we sense, and the constitutive necessity of that orderliness for the very functioning of our understanding. This functioning is required for any synthetic unity of apperception, and thus is required for any analytic unity of apperception, that is, for the occurrence of any humanly possible 'I think' (that some appearances appear to occur before, during or after others). Details are examined in *KTPR* §§15–29.

25. Thus transcendental proofs can justify conclusions much stronger than Rorty (1970, 1971) recognised. He claims that the most they can show are interrelations amongst thoughts. Kant's justification of realism is *not* verificationist; instead it appeals to his semantics of singular, specifically *cognitive* reference; see below, §§26, 48–60.

be self-conscious only by distinguishing ourselves from various spatio-temporal particulars we identify. (Which we may identify, how accurately, for how long or encompassing what scope are all matters for empirical inquiry, according to Kant.)

I opened by referring to Wittgenstein's aspiration to establish realism without empiricism. Empiricism has been dispensed with in these reflections, for I have been arguing for a synthetic *a priori* claim, namely, that realism about molar objects and events must be (at least approximately) true in any world in which human beings can be self-consciously aware of some appearances appearing to occur before, during or after others. Arguments for the open texture of empirical concepts entail significant aspects of semantic and also justificatory externalism; *i.e.*, they show that some pervasive and important features of classificatory content or linguistic meaning, or of cognitive justification, cannot be specified or ascertained merely by self-conscious reflection. Open texture counters mythical Cartesian self-transparency ('access internalism') in both regards. Those anti-Cartesian implications are underscored and augmented by Wittgenstein's and by Kant's respective thought experiments, which highlight how and how very deeply our typical thoughts and experiences are context-dependent upon our environs in ways we typically take for granted, though at our epistemological peril if we listen to the siren songs of global perceptual scepticism. This strong claim is provisional; it is corroborated and undergirded below (PART 2).

10. Transcendental Affinity vs. Transcendental Idealism

What of Kant's transcendental idealism, and its apparently sceptical distinction between things in themselves and appearances to us? Because the transcendental affinity of the sensory manifold is a material, and neither a conceptual nor an intuitive, formal condition for the possibility of human self-conscious experience, this condition does not fit Kant's architectonic. Indeed, this condition suffices to refute not only Kant's express target, 'empirical idealism', but also his own transcendental idealism. Kant's transcendental idealism explains the 'necessity' of transcendental conditions of possible experience exclusively in terms of the nature and functioning of our cognitive apparatus generating, literally producing the spatio-temporal and categorial structure of our experience in accord with those conditions.²⁶

26. This is to say, Kant's transcendental idealism is a metaphysically extravagant view (KTPR, ch. 2; Westphal 2001). In line with neo-Kantians who either reject Kant's idealism, or who contend that it is 'anodyne', I aim to uphold the sound analysis provided by Kant's transcendental analysis of the *a priori* conditions necessary for self-conscious experience, whilst dispensing with his transcendental idealism.

Kant states this most directly in the *Prolegomena*:

Even the main principle expounded throughout this section, that the universal laws of nature can be known *a priori*, leads of itself to the proposition that the highest prescription of laws of nature must lie in ourselves, that is, in our understanding; and that we must not seek the universal laws of nature in nature by means of experience, but conversely must seek nature, regarding its universal conformity to law, merely in the conditions of the possibility of experience which lie in our sensibility and understanding. For how were it otherwise possible to know these laws *a priori*, since they are not rules of analytic knowledge but are true synthetic extensions of it? Such a necessary correspondence of the principles of possible experience with the laws of the possibility of nature can only proceed from two causes: either these laws are drawn from nature by means of experience, or conversely, nature is derived from the laws of the possibility of experience in general and is utterly one with the latter's strict universal lawfulness. The first [cause] contradicts itself, for the universal laws of nature can and must be known *a priori* (that is, independently of all experience) and can and must be the foundation of all empirical use of the understanding; therefore only the second [cause] remains. (*Prol.* §36, tr. Beck 1988, 199–200; emended; cf. *KdV* B41, A23/B37–8, A26–8/B42–4, B166–8, A101–2, A113–4, A121–3, A125–6, A195–6/B240–1)

Kant's explanatory thesis, that the transcendental conditions for the possibility of self-conscious human experience are satisfied only through the structure and functioning of our human cognitive apparatus, defines his Transcendental idealism. Though Kant argues that this kind of explanation also holds true of the transcendental affinity of the sensory manifold,²⁷ his arguments for this conclusion are all invalid. The reason is the same in each case: If the matter of sensation is given us *ab extra* (this too defines Kant's Transcendental idealism), then *ex hypothesi* we cannot generate its content. Consequently, we also can neither generate nor otherwise insure the regularities, *i.e.*, the recognisable similarities and differences, within that content or amongst that set of sensations. The satisfaction of the principle of transcendental affinity by any sensory manifold or appearances cannot be generated, injected or imposed by that subject; in Kant's terms, it cannot be a 'transcendentally ideal' condition of possible experience. This finding provides a genuinely transcendental proof of (unqualified) realism regarding molar objects and events we experience: Any world in which we human beings can be self-conscious is one which

27. *KdV*, A101–2, 113–4, 122, 125, cf. A123.

has a natural structure unto itself that provides us at least a minimum necessary degree of regularity and variety amongst the contents of our sensations.²⁸

11. Conditional Transcendental Necessity of (Critical) Realism

In this way, Kant and Wittgenstein both identify a strong and important conditional necessity holding between the very possibility of human self-conscious, and the detectable regularity and variety of events and objects in our natural environs. It is important to recognise that this thesis is of genuinely transcendental import. It is equally important not to overstate its implications. Like Wittgenstein, Kant does not offer this argument as an *explanation* of our use of our concepts. More importantly, this argument proves nothing regarding the kind, extent or persistence of whatever regularities we find in the world: It provides no basis for the ‘absolute rightness’ of any concepts, also eschewed by Wittgenstein. To think otherwise would be to fall from transcendental reflection into transcendental illusion. Neither Kant nor Wittgenstein succumb to this; neither should we.

So here we have justified (at least provisionally; see PART 2) ordinary realism, we have justified it without empiricism, we have justified it through transcendental reflection, and we have justified it only on the basis of a genuinely transcendental proof, to the effect that we human beings cannot be self-conscious in any world, the contents of which fail to provide us identifiable regularities and varieties amongst whatever we sense or perceive. This realism suffices, *e.g.*, to preempt Wright’s considerations of ‘cognitive command’ and ‘cosmological scope’ for rejecting minimalism and adopting a correspondence account of truth, and to refute Putnam’s ‘internal realism’:²⁹ For without perceiving and identifying mind-independent, real molar objects and events in our environs we could not invent convenient concepts or pose questions, whether sceptical or otherwise, for without recognising at least some of those objects and events we cannot think or be self-conscious at all. Hence this realism suffices to show that Cartesian/Humean sceptical predicament is *not* the human predicament. Thus global perceptual scepticism is refuted, regardless of whether any sceptic is silenced. To insist that any such refutation

28. See *KTPR*, ch. 3, and Westphal (1998c). Currently, ‘naturalism’ is widely taken to be a thoroughly reductive view. For an acute discussion of this kind of reductionism, and defence of a non-reductive naturalism, see Rouse (2002).

29. See Wright (1992), (1993), *KTPR*, §63.6. This is not to dismiss Wright’s considerations; it is only to claim that there is a much more fundamental point to make first. (The closing paragraph omits my standard Kantian proviso regarding ‘self-conscious’.) I counter Putnam’s internal realism in Westphal (1997), xxiv–xxvii, (2003b).

requires showing that the sceptical predicament *cannot* (possibly) be the human predicament is to assume Cartesian infallibilism about empirical justification, inherited from Tempier (1277). Precisely such infallibilist presumptions are the common target of Kant's and Wittgenstein's genuinely transcendental reflections, and their profoundly changed ways of thinking philosophically.

3 Kant's *Critique of Pure Reason* and Analytic Philosophy

12. Introduction

This chapter considers three key works of analytic Kantianism: C.I. Lewis, *Mind and the World Order* (1929), P.F. Strawson, *The Bounds of Sense* (1966) and Wilfrid Sellars, *Science and Metaphysics: Variations on Kantian Themes* (1968). I begin with some characteristics of early analytic philosophy which framed analytic philosophers' views of Kant's *Critique of Pure Reason*.¹

Early Anglophone analytic philosophy came to focus on language. Ordinary language analysis contends that philosophical problems arise from decoupling terms or phrases from their ordinary contexts of use, in which alone they have definite use and meaning; it tends to a therapeutic approach to philosophy. What may be called 'ideal language' analysis (broadly speaking) contends that philosophical problems arise through the use of the 'material' mode of speech, that is, ordinary speech about persons, things, or events, to formulate philosophical problems; diagnosing and solving or dissolving these problems requires ascending to a constructed 'formal' mode of speech, which restates those issues meta-linguistically as concerning sentences or statements.² Though such philosophy can be therapeutic, most versions tended to more ambitious, constructive philosophical analyses. A third, not necessarily exclusive strand of analytic philosophy holds that the sole purview of philosophy

1. Carnap's views are far more indebted to neo-Kantianism than to Kant. Two others most germane to the present topic are Schlick (1918, 1930/31) and Rosenberg (1980). On McDowell's purported Kantianism, see Bird (1996), Rosenberg (2007b), Westphal (2008) and below, §§16, 59.3. I mention 'Wilfrid' Sellars because both he and his father, Roy Wood Sellars, developed Critical Commonsense Realism, also developed and defended in this study. Early 20th-century philosophy in North America is not the wasteland so commonly presumed; see (e.g.) R.W. Sellars (1916, 1920) and J.E. Turner (1925).
2. The distinction between the 'material' and 'formal' modes of speech is anachronistic, though it parallels well enough for present purposes the contrast between surface grammar and logical re-analysis central to Russell's pioneering work.

is conceptual analysis; all other legitimate inquiry belonging to natural science.³

In 1922 Russell (*CP* 9:39) declared, ‘I should take ‘back to the 18th Century’ as a battle-cry, if I could entertain any hope that others would rally to it’.⁴ The pinnacle of Russell’s Eighteenth Century was Hume’s *Enquiry Concerning Human Understanding*, according to which we can only know analytic propositions (‘relations of ideas’) *a priori*, whilst synthetic propositions (‘matters of fact’) can only be known *a posteriori*. Two main strategies dominated analytic epistemology: ordinary language attempts to solve or dissolve apparent epistemological difficulties; or alternatively, proposals for a tenable empiricism which replaced the psychological dimensions of Hume’s epistemology with purely logical analyses or constructions, centrally, of persons or physical objects out of sets of sense data and proposed versions of meaning and of verification empiricism.

From the outset analytic philosophers rejected Kant’s contention that some synthetic propositions can be known *a priori*; Toulmin’s (1949) defence of ‘synthetic necessary truth’ was apparently disregarded – except perhaps by Sellars (*SM*). The anti-metaphysical bent of analytic philosophy opposed Kant’s apparently metaphysical form of transcendental idealism. The anti-naturalism involved in pure conceptual analysis, especially within epistemology, opposed Kant’s cognitive psychology. Powerful new logics developed by Frege, Russell and Whitehead, and modern algebra appeared to discredit Kant’s understanding and use of logic in the first *Critique*. Einstein’s use of Riemannian geometry within Relativity Theory appeared to discredit Kant’s commitment to Euclidean geometry, its spatial constructions and his Euclidian account of our spatial form of outer intuition. The strategy of dividing, isolating and resolving philosophical puzzles piecemeal opposed Kant’s systematic approach. And especially in England understanding of the *Critique* was hindered by serious misinterpretations promulgated in the 19th Century.⁵ The reception of Kant’s *Critique* into analytic philosophy was fraught from the outset.

13. C.I. Lewis, *Mind and the World Order*

Lewis published *Mind in the World Order* before analytic philosophy took root in North America, within the context of American philosophy,

3. For an account of the philosophical sea-change wrought by analytic philosophy, see Bird (1972).
4. Cf. Quine: ‘On the doctrinal side, I do not see that we are farther along today than where Hume left us. The Humean predicament is the human predicament’ (1969a, 72, cf. 74, 76).
5. See Caird (1889), Mahaffey & Bernard (1889), Watson (1881), Wellek (1931); cf. Dryer (1966).

in the forms of Idealism (Royce), Critical Realism (esp. R.W. Sellars) and Pragmatism, especially Peirce and Dewey, though Lewis was current with work by, e.g., Bergson, Russell and Whitehead. Lewis was a logician, a pioneer in modal logic and in history and philosophy of logic (Corcoran 2006). Consequently, *Mind and the World Order* shows affinities with later analytic developments, though its distinctively pragmatic character remains a key virtue.⁶ Like Peirce, Lewis studied Kant's *Critique* over many years. In view of his criticisms of Kant, Lewis's analysis and defence of his 'conceptualistic pragmatism' shows many more points of close agreement than might be expected.

Understanding these agreements requires acknowledging Lewis's main misunderstanding of Kant's *Critique*. Lewis alleged that Kant uses 'the term "experience" as if experience and the phenomenally real coincide', thus precluding any Kantian account of dreams and ascribing phenomenalism to Kant (*MWO* 154, 214, 221).⁷ Lewis's allegation rests upon his apparent difficulties identifying Kant's reasons for transcendental idealism⁸ and his misunderstanding of Kant's Transcendental Deduction. Lewis held that the key to Kant's Deduction is: 'That which can not validly be thought under the categories can not be given in intuition' (*MWO* 214).⁹ To the contrary, Kant's central problem in the Deduction is that appearances may satisfy the constraints of our forms of intuiting (sensory intake) without for that reason also satisfying the constraints of our *a priori* categories of judgment (A89–90/B122–3). Attempting to prove the legitimacy of our use of our categories to judge appearances is a further, positive aim of the Deduction and indeed of Kant's entire Transcendental Analytic.

Fortunately, our understanding of Kant's *Critique* has improved considerably, revealing how Kantian are many central features of Lewis's epistemology in *MWO*. Like Kant, Lewis too is impressed by the lesson of the scientific revolution, that 'We must first be in possession of criteria which tell us what experience would answer what questions, and how, before observation or experiment could tell us anything' (*MWO* 259, cf. *Bxii–xiv*); both take this lesson to indicate that *a priori* concepts and principles play fundamental roles in empirical, and especially in scientific knowledge; these require philosophical examination. Both agree in rejecting a conceptual 'knowledge by acquaintance', indirect or

6. Cf. Lewis (1930). Though Lewis's epistemology is often assimilated to familiar forms of foundationalism, this is erroneous; see Dayton (1995), Hay (1986), Westphal (2017c).

7. L.W. Beck replied on Kant's behalf (1978), 38–60.

8. More specifically, Lewis had difficulty identifying Kant's reasons for his transcendental idealist account of space and time and the attendant distinction between phenomena and noumena (*MWO* 215–6).

9. In §§13–15, otherwise unattributed parenthetical page references are to the main work discussed in each section.

representationalist theories of perception and the sceptical ego-centric predicament.¹⁰ Both take perceptual judgment to be central to epistemology. Both distinguish linguistic or conceptual meaning from cognitive significance.¹¹ Both are fallibilists about empirical justification (MWO 213),¹² though Lewis neglected this feature of Kant's epistemology (MWO 227), perhaps due to his phenomenalist misreading. Both distinguish (though not in the same ways) between the *a priori* and the *a posteriori*, and between the analytic and the synthetic; both agree that the key question is the *quid juris* of validity regarding the respective roles of these four aspects of human knowledge and experience (MWO 37–8; B116). Both hold that our explicit awareness, judgment and knowledge are humanly possible only on the basis of basic, pervasive, implicit judgmental cognitive activity;¹³ hence they reject Cartesian 'transparency of consciousness' theses. Both argue that experience is only possible for us if the world presents us with similarities and contrasts amongst the *qualia* (sensory contents) or the objects presented to us which we can recognise by using our *a priori* categories (MWO 360; see below). Lewis learnt from Kant's Second Analogy that central to analysing and justifying empirical knowledge is determining that and how we can properly discriminate merely subjective forms of apparent succession from objective forms of actual succession, so that we can identify spatio-temporal objects and events.¹⁴ Both agree that identifying objective states of affairs requires time, anticipation and bodily behaviour (MWO 175, 195, 288). Though Kant only briefly notes bodily comportment in the Analogies, *e.g.*, we identify the concurrent existence of various parts of a house in part by how we choose to glance in one direction or another (A190, 192–3/B235, 237–8, 275), Arthur Melnick has argued cogently that bodily comportment is fundamental to Kant's theory of perceptual judgment.¹⁵ Lewis and Kant both argue that ascribing sensory appearances to objective states of affairs requires conceptually structured perceptual judgment (MWO 133; *KdrV* A247/B304, *cf.* B309, 342–3). Indeed, Lewis contends, 'Every criterion of classification is criterion of reality of some particular sort. There is no such thing as reality in general; to be real, a thing

10. MWO 117–8, 166. The ascription of these views to Kant is complex; main points are summarised below, §§19–34.

11. Lewis (1970), 96; *cf.* *KdrV* A239–41/B299–300, and the end of §15 below.

12. The fallibilist strands in Kant's epistemology are a central topic of *KTPR*; they converge in §63.

13. MWO 19, 84, 88, 89, 134–5, 140, 196, 236, 285–9, 290–1, 332, 341.

14. MWO 138–9, *cf.* 151, 175; *KdrV* A182–4, 189–97/B225–7, 234–42.

15. Melnick (1989), 6–11, 17–8, 22–5, 29–30, 36–50, 189–204, 466–81, 489; *cf.* Guyer's (1994) review. The central significance of bodily comportment in Kant's account of perceptual discrimination is corroborated and further developed below, §§55–57, *cf.* §59.

must be a particular sort of real' (MWO 263), echoing Kant's reasons for denying that 'being' is a real predicate (A598/B626).

These substantial points of agreement highlight Lewis's four central disagreements with Kant's *Critique*. Lewis contends, first, that there are no *a priori* structures of our human forms of spatial and temporal intuiting (MWO 198, 214). Modern algebra shows that geometry can be developed purely formally, without appeal to spatial constructions, and can be developed consistently in both Euclidean and non-Euclidean forms (MWO 241, 298). Einstein's Theory of Relativity rejects the requirement of simultaneity embedded in Kant's account of spatial and especially geometrical construction (MWO 253). Moreover, none of Kant's *a priori* grounds for constructing Euclidean geometrical figures and proofs can address the application of geometry to physical objects (MWO 295–8). Lewis contends that 'we most certainly *could* have an experience in which Euclidean-appearing things should, upon further examination, turn out to have non-Euclidean properties' (MWO 299). Hence the remaining question is which system of geometry is most successfully applicable to any empirical domain (MWO 298).

Lewis contends, second, that the lesson of the algebrisation of geometry holds for conceptual systems generally. 'Inference', Lewis (1930 [1970, 10]) contends, 'is analytic of systems, not of propositions in isolation'. The inferential relations which explicate and define any formal, conceptual system are developed and defined independently of any applicability of that system. The variety of such systems, the variety of bases for developing equivalent systems, the historical record of presumed axiomatic truths being exposed as false, and the change of concepts associated with the same term all show, Lewis contends, that there are no fixed categories such as Kant's, and that the traditional (post-Tempier!) ideal of justification solely by deduction from self-evident first premises (*scientia*) is false, in both formal and non-formal domains (MWO 84, 198, 202–5, 233–4).

Lewis further contends, third, that these general points about formal, conceptual systems hold equally of the conceptual systems we use, implicitly or explicitly, to identify objects, events and natural regularities, including all natural-scientific systems of classification. All such systems have a formal truth in terms of logical implication within the system, independent of any reference to particular domains of application. Hence, Lewis argues, the 'only knowledge *a priori* is purely analytic; all empirical knowledge is probable only' (MWO 309). Hence, he concludes, there is no synthetic *a priori* knowledge. The central case for Lewis's view concerns our extrapolation from past and present regularities to likely future regularities. (This centrality is examined shortly.) Especially in this case philosophers have sought a synthetic principle, such as the uniformity of nature, to 'bridge the gap between abstract ideas in the mind and the reality presented in experience' (MWO 309). Yet in this case, too, Lewis

argues (in the concluding 100 pages) that ‘for the validity of empirical generalisations as . . . knowledge of probabilities[,] no *a priori* truth other than the merely analytic is required’ (MWO 310).

Finally, Lewis develops a much simpler deduction of the categories, which (if sound) renders Kant’s Transcendental Deduction otiose (MWO 37–8, 219). Indeed, the clues to Lewis’s simpler deduction are supplied by Kant. According to Lewis, ‘the deduction of the categories consists at bottom in this: that without the validity of categorial principles no experience is possible’ (MWO 320). Indeed, ‘in some passages of the “subjective deduction” the argument turns precisely upon the consideration that the only alternative to a categorised and orderly experience is a meaningless flux of mere *schwärmerei*’ (MWO 321).¹⁶

Regarding the *a priori* origin of our concepts, Lewis was more radical than Kant. Lewis argued that all concepts are *a priori* because they are all classificatory inventions of the mind. Experience only provides us sensory presentations or *qualia*; it is entirely up to us to classify these effectively as objective, subjective, or illusory within any one of our conceptual classifications of the real (MWO *x*, 13–14, 197, 222–5). Sensory presentations or *qualia* simply occur; they are not themselves representations and involve no knowledge because they involve no concepts, judgments, nor any distinction between truth and error (MWO 44, 46, *cf.* 275). Our categories rule nothing in nor out of experience. Instead, our categories provide various specific classifications of various ways in which something can be real: ‘whatever is denominated “real” must be something discriminated in experience by criteria which are antecedently determined’ (MWO *x*). In this sense, some sensory presentation or *quale* may be or belong to a real mirage, or a real spurious perceptual misjudgment, or a veridical perception of a real physical object; the question ‘real or not?’ can only be answered for specific classifications of phenomena (here using the term ‘phenomena’ in a neutral sense). Accordingly, ‘*A priori principles of categorial interpretation are required to limit reality; they are not required to limit experience*’ (MWO 222; italics original, *cf.* 231). Because all classification involves ascription of reality of one or another kind, it involves expectations of future experiences; no single sensory presentation or *quale* suffices to verify any such classification. Moreover, which future experiences eventuate depends in part on our own decisions about how to act (MWO 356–7). Hence the *a priori* ‘represents the

16. By the ‘subjective deduction’, Lewis apparently intends the A Deduction; see A112, though a parallel passage occurs in the Second Analogy (A200–2/B246–7). Also see below on the transcendental affinity of the sensory manifold. (»*Schwärmerei*« is delusive fantasy, however rapturous.)

activity of mind itself; it represents an attitude in some sense freely taken' (MWO 196–7). More fully, Lewis states:

The necessity of the *a priori* is its character as legislative act. It represents a constraint imposed by the mind, not a constraint imposed upon the mind by something else.

And the *a priori* is independent of experience . . . precisely because it prescribes *nothing* to the content of experience. That only can be *a priori* which is true *no matter what*. What is anticipated is not the given but our attitude toward it; it formulates an uncompelled initiative of the mind, our categorial ways of acting. Truth which is *a priori* anticipates the character of the *real*; . . . The real, however, is not the given as such, but the given categorially interpreted. In determining its own interpretation – and only so – the mind legislates for reality, no matter what future experience may bring. (MWO 197)

Lewis primarily emphasises the *a priori* origin of all our concepts, though careful reading of MWO reveals that Lewis rejects both concept empiricism and verification empiricism, as he explicitly argues elsewhere. Accordingly, he holds that our concepts are *a priori* regarding their content as well.

Lewis's conceptualistic pragmatism analyses the *a priori* in relation to experience because he argues that the independence of our *a priori* categories from experience is qualified: '. . . what is *a priori* and of the mind is prior to the content of the given, yet in another sense not altogether independent of experience in general' (MWO 24, *cf.* 21). Although no experience or set of experiences can require us to change our conceptual classifications, our own interests in devising and improving useful, informative classifications lead us to devise new systems (or sub-systems) of classification and to abandon their predecessors or alternatives (MWO 232).

Because our conceptual classifications are, in part, embedded in our practical attitudes towards classifying experiences as they occur, because more than a few experiences are required to verify (or corroborate, we might say) any classification, and because which experiences pertaining to that classification occur depends in part upon our chosen courses of action, Lewis's 'question of the possibility of knowledge *a priori*' is: 'How do we know in advance that if it does not conform to our principle it will not be veridical, or will not be real in the category which is in question?' (MWO 224, *cf.* ix, 195, 308, 319). Lewis's answer is his alternative to Kant's Transcendental Deduction; it involves four main points. First, although perception is always relative to the perceiver and his or her behaviour, this relativity does not entail that perception is inherently misleading or illusory (MWO 143, 160–4). The logic of relativity shows that something can have or exhibit relative characteristics only because

it has its own intrinsic or 'absolute' (non-relative) characteristics (MWO 167–73). Second, we could not discriminate amongst *qualia* nor anything else in an undifferentiated experiential field (MWO 59). Third, it is confused and misleading to formulate the problem of induction as Hume does, as if we experience and identify physical objects, though we cannot know laws governing their behaviour. To the contrary, though distinct, the issues of whether or how we identify physical objects or events and of whether or how we identify laws governing their behaviour are correlative problems requiring conjoint solution (MWO 320).

Like Kant, Lewis argues, fourth, that we can only identify physical objects (and likewise spatio-temporal events as objective successions) by discriminating regularities in their behaviour which are (at least) partly manifest to us in how they appear to us, by distinguishing their regularities from those regularities in their appearances which depend upon our own chosen courses of action. Only because we are active beings can we at all distinguish between sensory presentations or *qualia* and the appearances of physical objects or other kinds of real occurrences (MWO 30–1, 130, 140–1). Making such distinctions requires that the order of sensory *qualia* be not fully pre-determined or fixed; instead, that order is in part a function of our chosen courses of action (MWO 357–8). That these basic points hold is manifest in our experience and action; the only alternative is an experience consisting in the 'mere flitting of meaningless presentations', perhaps approximated by 'the experience of an oyster with the oyster left out' (MWO 378). Hence, 'a world without law must likewise be a world without recognisable things. The recognition of objects requires the same kind of order or reliable relatedness which law also requires' (MWO 320). Thus: '*The determination of reality, the classification of phenomena, and the discovery of law, all grow up together*' (MWO 263, italics original). Hence if we have experience at all the question is not, Whether there are physical objects, regularities governing their behaviour, or any human knowledge of these; but rather: To what extent can we identify and thereby come to know various kinds of things and the regularities governing their behaviour (MWO 351, 353)? Lewis concludes:

A certain minimal order is prescribed *a priori* in the recognition of the real. It is a regulative maxim of reason to seek further uniformities which may be stated in principles finally of maximal comprehensiveness and simplicity. But there neither is nor can be any prescription of the specific type of uniformity or correlation which is demanded in this interest of further intelligibility. (MWO 353)

Hence, 'we *do* know with certainty and *a priori* that *if X* is a physical thing, then it will conform to certain general principles which can be laid down in advance because they constitute criteria of the physical'

(MWO 322). All of these points are, by design, compatible with both the possibility and the social and historical facts of significant, often sudden change in our systems of classificatory concepts (MWO 228, 237–8, 263, 265–6, 298–9, *cf.* 225, 271).

Lewis's alternative to Kant's Transcendental Deduction is indeed close to an important, if controversial analysis of Kant's.¹⁷ Kant identified and partly analysed an important transcendental, formal, though material condition for the very possibility of self-conscious human experience, the transcendental affinity of the sensory manifold (A113). According to this principle, unless the contents of one's sensations have a minimum, humanly recognisable degree of regularity and variety they would not admit of perceptual synthesis, and so would provide no basis for even putative cognitive judgments using either *a priori* or empirical concepts.¹⁸ Hence this affinity of the sensory manifold is transcendental because it is a necessary *a priori* condition of the possibility of self-conscious human experience. It is formal because it concerns the orderliness of the matter of empirical sensations. However, ultimately it is satisfied neither by the *a priori* intuitive conditions of experience analysed in the Transcendental Aesthetic nor by the *a priori* conceptual conditions analysed in the Transcendental Analytic. Kant recognises that its satisfaction is due to the 'content' or to the 'object' of experience (A112–13, 653–4/B681–2). Hence this transcendental condition is neither conceptual nor intuitive, but rather material.

Kant stresses that a complete sensibility and understanding, capable of associating perceptions, does not of itself determine whether any appearances to it or any of its perceptions are in fact associable. If they weren't, there may be fleeting, random sensations – Lewis's flitting *schwärmerei* – but there could be no unified, and hence no self-conscious human experience. In part this would be because those irregular sensations would disallow reproductive synthesis; they wouldn't admit of any psychological association, and so couldn't afford a basis to develop empirical concepts or to use categorial concepts to judge objects (*i.e.* to classify and so to identify them by some of their features). There could be no schematism and hence no use of categories in a world of chaotic sensations or appearances. In this regard, the necessity of the associability of the sensory manifold is a *conditional* necessity, holding between that manifold and any self-conscious human subject. Necessarily, if a human subject is self-consciously aware of an object or event *via* a sensory manifold, then the content of that manifold is associable. The associability of this

17. Guyer (1987, 132, 138–44, 379–83) examines and rejects Kant's analysis of transcendental affinity. Kant's analysis is reconstructed rather differently and defended in *KTPR* (§§15–29), as sketched above (§§4, 9, 11).

18. *KdrV* A657/B685, *cf.* A90–1, 100–1, 108, 121–3, 653–4/B122–3, 681–2.

content *is* its ‘affinity’. The fact that such affinity is necessary for the possibility of self-conscious experience entails that this affinity is transcendental, though we cannot determine *a priori* how much associability our finite cognitive minds require (A653–4/B681–2). Above this minimal level of regularity and variety, there is then a reflective issue about the extent to which we can systematise what we experience.

Kant’s analysis of transcendental affinity is expressly tailored to our finite cognitive capacities. Hence one might ask of Lewis, How much order amongst *qualia* suffices for human experience? Lewis answers optimistically, that we can identify order even within ‘*any* apparently chaotic character of experience’ and ‘reduce it to some kind of intelligible order’, even if only to expect maximum novelty (MWO 226, 388). Lewis’s optimism appears required to keep distinct the ‘equivalence of the *a priori*, the analytic, and the intensional, on the one hand, [and] of the *a posteriori*, the synthetic, and the extensional, on the other’, which have too often been confused within logic (MWO 433). Yet recent epistemology stemming from cognitive science has made us more mindful of our computational finitude. Lewis notes that identifying order depends in part upon our degree of intelligence (MWO 351). Lewis considers a ‘perverse demon’, whose sole purpose in feeding us *qualia* ‘is to mislead us and render knowledge impossible’ (MWO 387). Even if there are reasons to suppose that human beings can only discriminate a finite number of distinct sensory *qualia* (MWO 363, 387, 431), so that the demon must eventually repeat some (MWO 387), it is far from obvious that such repetitions must fall within the scope of regularity comprehensible to (say) average human intelligence. In this regard, Kant’s analysis, which appeals expressly to our cognitive limitations, better justifies the conclusion required by Lewis’s analysis. However much Lewis’s distinction is required in logic, this issue belongs to epistemology. How might Lewis respond?

According to Lewis, our intellect is active and embodied; otherwise it could not generate any conceptual classifications (MWO 21, 24, 27, 30–1, 92, 290–1). Any world in which our intellect can have sensory presentations is one which contains our own physical bodies and whatever physical things condition our sensory presentations (MWO 161, 286). Furthermore, “‘The human mind’ is distinctly a social product’, due to our needs to coöperate within our natural and social environment, and ‘our categories . . . reflect that fact’ (MWO 238–9), not least because our classifying together various sensory *qualia* ‘with similar appearances in the past is too swift and instinctive’ to be explicit. Such rapid, implicit classification Lewis presumes is evolutionarily basic to human (and to animal) cognition (MWO 290–1, *cf.* 358). To the extent that the cognitive evolution of our species belongs to Lewis’s epistemology, there are further grounds to support his claim that any world in which *we* can *be* is one in which we can identify relevant similarities and differences amongst

presentations, such that we can identify relevant similarities and differences amongst presented objects and events. Conversely, Lewis surmises, 'If we were jelly-fish in a liquid world, we should probably not add at all, because the useful purposes served by such conceptions would be so slight' (*MWO* 252).¹⁹

Such appeals to our cognitive finitude strongly suggest that augmenting Lewis's alternative deduction in this way makes for a much more synthetic and perhaps even *a posteriori* analysis than suits either Lewis's liberal form of *a priori* conceptual analysis or even his broad model of a transcendental deduction. I close with three brief remarks. First, genuinely pragmatic epistemology can be combined coherently and constructively with genuine transcendental analysis and proof.²⁰ Second, Lewis's rich, multi-faceted account of conceptual meaning in *MWO* compromises, if not undermines, the traditional (as well as many contemporaneous) distinctions between 'the' *a priori* and 'the' *a posteriori* and also 'the' analytic and 'the' synthetic. His conceptualistic pragmatism suggests that the relevant contrast here is not between the *a priori* and the *a posteriori*, but between the more formal and the more material. Third, those who would question Lewis's appeal to human nature as 'externalist' factors in justification which would commit a *petitio principii* against the sceptic should consider carefully Lewis's criticism of the deductivist pretensions of *scientia*, which are far more central to sceptical hypotheses than their proponents often realise (*cf.* above, §§1, 2.4, 11). Lewis's *Mind and the World Order*, long since shunted aside by programmatic declarations of extensionalist logicians, awaits philosophical rediscovery.

14 P.F. Strawson, *The Bounds of Sense*

The Bounds of Sense occupies a uniquely influential position in the intersection of Kant's *Critique* and analytic philosophy. At the time there was philosophically sensitive, textually scrupulous and in this sense 'analytic' Anglophone research on Kant's *Critique*; *e.g.*, by A.C. Ewing, W.H. Walsh, Graham Bird, Manley Thompson, Charles Parsons and Douglas Dryer. Such research, however, was regarded by mainstream analytic philosophers as an historical specialty. Hence when a leading analytic philosopher emphatically proclaimed that Kant's Transcendental Deduction is

one of the most impressive and exciting [passages] in the whole of philosophy. (*BoS* 25),

19. Lewis's jelly-fish bears comparing with Russell's denizens of the Sun and with Wittgenstein's expandable rulers and objects; *cf.* above §§7–11.

20. Or so I argue in Westphal (2003b), (2018a) and still further in the present study.

that

[n]o philosopher in any book has come nearer to achieving this strenuous aim [of thinking up to the limits of thought] than Kant himself in the *Critique of Pure Reason*. (BoS 44),

and specifically that

Kant's genius nowhere shows itself more clearly than in his identification of the most fundamental of these conditions [of the possibility of self-consciousness] in its most general form: *viz.* the possibility of distinguishing between a temporal order of subjective perceptions and an order and arrangement which objects of those perceptions independently possess – a unified and enduring framework of relations between constituents of an objective world. Almost equally important is his recognition that this distinction must be implicit in the concepts under which the contents of experience are brought, since there is no question of perceiving, as it were, the pure framework itself. These are very great and novel gains in epistemology, so great and so novel that, nearly two hundred years after they were made, they have still not been fully absorbed into the philosophical consciousness. (BoS 29),

Mainstream analytic philosophers paid attention – though also because Strawson corroborated everything they disliked about Kant's *Critique* whilst promising to extract from Kant's text a philosophically respectable analysis.²¹ Strawson's analysis was hailed as a 'new and improved version of the central argument of Kant's Transcendental Deduction',²² and *BoS* launched a new genre of analytic transcendental arguments.²³

Strawson aimed to determine 'how far Kant succeeds in establishing that certain features are, in the austere sense, *a priori* features of our conception of experience' (BoS 70). Strawson's positive reconstruction of Kant's analysis can be summarised in his own words; so doing is important for reasons indicated below. Strawson concludes from Kant's Transcendental Aesthetic that:

... we can conceive of no form of experience which does not involve a temporal ordering of the particular items of which we become

21. The most comprehensive response to Strawson's criticisms of Kant's *Critique* is Greenberg (2001).

22. Quoted from the first sentence of Rorty (1970).

23. Unfortunately, it also swept from view Bird's (1962) and Dryer's (1966) better books. On 'analytic transcendental arguments' see Grundmann (1993).

aware . . . (72). [Kant's Transcendental Deduction provides] reason for entertaining favourably an exceedingly general conclusion: *viz.* that any course of experience of which we can form a coherent conception must be, potentially, the experience of a self-conscious subject and, as such, must have such internal, concept-carried connectedness as to constitute it (at least in part) a course of experience of an objective world, conceived of as determining the course of that experience itself. (*BoS* 117, *cf.* 118, 121)

[Kant's Analogies of Experience and Refutation of Idealism] . . . prove something important. Experience of the objective demands the possibility of determining objective time-relations (132). . . . [O]nly if it is possible to distinguish between the subjective time-order of perceptions and the time-relations of [perceived] objects . . . is it possible to give content to the general notion of experience of an objective reality, hence to make intelligible the possibility of experience itself (140–1). . . . [The] key notion in this problem is that of currently unperceived objects which are nevertheless objects of possible perception . . . existing at the same time as objects of actual perception. If there were no such co-existence of objects of possible with objects of actual perception, there would be no effective distinction to be drawn between objective and subjective time-orders. . . . [This distinction] is effectively employed only if we think of objects encountered in experience, objects which we actually perceive, as existing not only when we perceive them, but also at other times, when we perceive, not them, but other objects. . . . This notion involves that of the possession by objects which we actually perceive of a relative permanence or persistence which our perceptions of them do not possess (141, *cf.* 132). . . . We cannot . . . characterise those perceptions themselves except with the help of concepts of persistent things which we perceive the objects of those perceptions as instances of. [Hence] . . . we must conceive of such objects as *ordered in some system or framework of relations such as alone can give sense to the notion of particular identity of such objects*. . . . [T]he most natural way, and perhaps the only way, for us to conceive of a possible framework or system of relations of the kind required is to conceive of it as spatial. [Hence] . . . we must conceive of ourselves, as perceivers, as having at any moment a determinable position in the system of relations to which the perceiver belongs. For only under this condition can the subjective series of our experiences be conceived as a series of *perceptions* of objects existing independently and enjoying their mutual relations in the system. (*BoS* 142)

Lack or possession of order-indifference on the part of our perceptions is . . . our criterion – whether we reflectively realise the fact or not – of objective succession or co-existence (134).

[Distinguishing] . . . between objective and subjective time-determinations (143) [requires identifying] changes in perceptions which are attributable to changes in the viewpoint of the observer. [Such changes] . . . exhibit a regular correlation with change of the observer's position and his sense-orientation in relation to objects in the world. The possibility of this correlation in turn seems to depend upon changes and persistences in the world of objects being themselves subject to some kind and degree of order and regularity. (*BoS* 144)

[Hence] . . . our concepts of objects, and the criteria of re-identification which they embody, must allow for changes in the objective world subject to the limitation that change must be consistent with the possibility of applying those concepts and criteria in experience. . . . [T]his requirement [is] satisfied [because] our concepts of objects are linked with sets of conditional expectations about the things which we perceive as falling under them. For every kind of object, we can draw up lists of ways in which we shall expect it not to change unless . . ., lists of ways in which we shall expect it to change if . . ., and lists of ways in which we shall expect it to change unless . . .; where, with respect to every type of change or non-change listed, the subordinate clauses introduce further and indefinite lists of clauses each of which would constitute an explanatory condition of the change or absence of change in question. (*BoS* 145)²⁴

The point is that in contradistinction to concepts of simple sensory *qualities*, and in contradistinction, too, to any concepts there may be of particular sensory *items* which are quite fully describable in terms of simple sensory qualities ('sense-data', perhaps, in one sense of the term), concepts of *objects* are always and necessarily compendia of causal laws or law-likeness, carry implications of causal power or dependence.²⁵ [These . . .] must make up a great part of our concepts of any persisting and re-identifiable objective items. And without some such concepts of these, no experience of an objective world is possible. (*BoS* 145–6)

[Thus] . . . we may suppose that while perceptions of the world may reveal *some* objective changes which we can characterise as inexplicable, quite unpredictable or utterly random, they can do so

24. Here Strawson highlights a key point of Lewis's analysis; had Lewis better understood Kant's analysis of this point, he might have realised that Kant did not espouse phenomenalism.
25. Strawson's analysis concurs here with Lewis's.

only against a background of persistence and alterations which we recognise as explicable, predictable and regular. (*BoS* 144, *cf.* 101)

This summary of Strawson's positive analysis reveals some important though neglected characteristics of Strawson's enlistment of Kant into the program of descriptive metaphysics, 'of determining the fundamental general structure of any conception of experience such as we can make intelligible to ourselves' (*BoS* 44, *cf.* 57, 146) through conceptual analysis.²⁶

In advance of his analysis, Strawson proposes to show that a sceptic who challenges us to reconstruct a public world of physical objects and events on the sole basis of our private sense data 'demonstrates his failure to have grasped the conditions of the possibility of experience in general' (*BoS* 19). This result is desirable, but Strawson's method is insufficient to this task. He contends that the various constraints Kant identifies as governing our possible experience 'must somehow be reflected in the character of our concepts themselves' (*BoS* 144–5). Because his analysis focuses almost exclusively upon our concepts and their interrelations, the strongest conclusion Strawson can justify pertains to how we must 'conceive' or 'think of' our experience, how we must 'take' objects to be, or how we must perceive them 'as' physical objects and events. Strawson's reconstruction in *BoS* focussed the central issues of 'analytic transcendental arguments' on issues of concept *possession*, rather than upon their legitimate, (cognitively) justifiable, sufficiently accurate (referential and attributive) use. This restriction results from his frequent, characteristic use of locutions such as those underscored here:

[The] distinction . . . between objective and subjective time-orders . . . is effectively employed only if we think of objects encountered in experience, objects which we actually perceive, as existing not only when we perceive them, but also at other times, when we perceive, not them, but other objects. (*BoS* 141)

. . . we must conceive of ourselves, as perceivers, as having at any moment a determinable position in the system of relations to which the perceiver belongs. For only under this condition can the subjective series of our experiences be conceived as a series of *perceptions* of objects existing independently and enjoying their mutual relations in the system. (*BoS* 142)

26. 'My book [*Bounds*] was, you might say, a somewhat ahistorical attempt to recruit Kant to the ranks of the analytical metaphysicians, while discarding those metaphysical elements that refused any such absorption' (Strawson 2003, 9). For a thorough examination of Strawson's positive analysis, see Grundmann (1994).

Such locutions pervade Strawson's analysis.²⁷ Perhaps Strawson's analysis may counter some sense data analyses,²⁸ but because it addresses only how we must *conceive* our experience, it cannot address the sceptic.²⁹ To address scepticism, Strawson's analysis would have to demonstrate, not simply that we must *conceive of* ourselves, our experience and the objects or events we purportedly experience in certain commonsense ways, but that we *rightly, truly* and indeed *justifiedly* so conceive them. This task belongs to normative epistemology, not to *descriptive* metaphysics; knowledge requires both truth and justification. Strawson's conceptual analyses are indeed necessary, but not sufficient, to answer basic questions in epistemology, as Kant had already understood. This limit is built into Strawson's aims and method, and these limits have been repeatedly re-confirmed in the ensuing critical discussion of his analysis, and of similar 'analytic transcendental arguments'.

Strawson's analysis in *BoS* remains within the ambit of Hume's scepticism in the *Treatise*. Strawson's analysis highlights issues of concept-possession and use, namely their use to conceive of or to 'take' ourselves, objects and events in certain commonsense ways as indicated. In 'Of Scepticism with regard to the senses' Hume acknowledges that we all *have* the concept of a physical object ('the idea of body') and that it is central to how we conceive our experience and what we experience, and he takes pains to account for the acquisition, definition and use of this concept in accord with his concept-empiricism. Hume there argues that,

27. I invite the reader to identify each such locution and similar ones in the above summary of Strawson's version of the Deduction, and in the constructive passages of *BoS* pt II. Though some occurrences of terms such as 'see' or 'perceive' appear to be factive, suggesting veridical perception, nothing in Strawson's analysis justifies such connotations. Instead, if they are used in such senses, they occur as independent premises. Most directly, Strawson states: 'We *perceive successively* objects which we nevertheless *know to be co-existent*' (141; italics original). If we do know this, then scepticism is a dead issue, though apparently for reasons G.E. Moore already had in hand. When Strawson immediately queries, 'But how can we know this?' (141), his answer reverts to the kinds of locutions I emphasise.
28. Grundmann (1994, 135–40) notes difficulties identifying what sort of sense data analysis Strawson addresses.
29. Grundmann (1994, 132) notes two passages which might suggest that Strawson aims to show that our conception of objectivity is linked to the world as it truly is. Yet these passages too expressly concern how '[o]ur sensible experience may, and does in fact, exhibit that connectedness which enables us to employ empirical concepts of objects, to count our sensible representations . . . as veridical perceptions' (*BoS* 92), or how '[w]hat is meant by the necessary self-reflexiveness of a possible experience in general could be otherwise expressed by saying that experience must be such as to provide room for the thought of experience itself. The point of the objectivity-condition is that it provides room for this thought' (*BoS* 107). Provision for having such thoughts, however, does not involve – not for any reasons Strawson provides in *BoS* – grounds for supposing these thoughts to be either true or justified.

however ineliminable it may be from our beliefs, the very idea of ‘body’, the very concept ‘physical object’, is an utter fiction incapable of any *justifiable* cognitive role (cf. Westphal 1998a, §4).

Strawson’s attention to the integration of a complex of conceptual resources within our commonsense realistic conception of experience exhibits the standard epistemological problem confronting coherence theories of justification, aired at the outset of Logical Positivism and later re-learned by Laurence Bonjour.³⁰ No matter how coherent or tightly integrated a set of beliefs, propositions or concepts may be, coherence alone cannot justify their truth. Ironically, *BoS* appeared only three years after Gettier (1963) demonstrated the insufficiency of conceptual analysis for epistemology. Gettier’s counter-examples to conceptual analyses of Justified True Belief models of empirical knowledge all highlight features of a person’s actual cognitive processes and circumstances from which non-empirical conceptual analysis must prescind. Amongst much else, Gettier’s article ushered in a return to more naturalistic approaches to epistemology attending to our actual cognitive processes and circumstances, including developments in cognitive science and epistemological interest in artificial intelligence, including the excellent works on relevant aspects of Kant’s cognitive functionalism by, e.g., Kitcher (1990) and Brook (1994, 2016).

Strawson recognised deficiencies in *Bounds* regarding both Kant’s *Critique* and the core epistemological issues. He points especially to ‘Kant’s New Foundations of Metaphysics’ and ‘The Problem of Realism and the *A Priori*’ as significantly improving his view.³¹ To these I would add ‘Imagination and Perception’ (1970) and ‘Perception and its Objects’ (1979), which attend to central issues of perceptual judgment.³² When Guyer (1989) later argued that Kant’s transcendental psychology examines basic constraints on any cognitive system which synthesises information over time, Strawson (1989, 9) granted the point and acknowledged that his castigating ‘the imaginary subject of transcendental psychology’ (*BoS* 32) was ‘somewhat rude’.

Kant recognised that conceptual analysis alone is insufficient to his epistemological tasks in the *Critique* (A216–8/B263–5). Even when conceptual analysis is as liberal as Strawson’s, Kant’s point stands. Kant knew that disregarding our basic cognitive capacities and attendant incapacities grants the field to sceptics. Strawson’s tantalising sketch inspired many philosophers to seek more detail in and more ambitious results from Kant’s *Critique*.

30. On the debate regarding Logical Positivism, see Westphal (1989), 56–7; on Bonjour’s coherence theory, see his (1997).

31. Both essays are reprinted in Strawson (1997a); he singles them out in his (2003), 9.

32. The Kantian pedigree of these essays is revealed by comparison with Milmed (1969) and with Sellars (*SM*).

The lack of epistemological import of Strawson's analysis in *BoS* poses a choice: Either produce a much-improved version of Kant's 'descriptive metaphysics', engage in normative epistemology, or make the most possible of Hume's observation that scepticism is a creature of one's study. In *Scepticism and Naturalism* (1985) Strawson chose this latter option; by so doing he did not renege on his apparently more Kantian analysis in *BoS*, which remained within Hume's ambit.³³

15. Wilfrid Sellars, *Science and Metaphysics: Variations on Kantian Themes*

Unlike analytic empiricists and proponents of 'knowledge first' epistemology, Sellars realised that issues about perceptual judgment are subtle and crucial. Sellars takes conceptual explication to be essential, yet not sufficient, for understanding and resolving substantive philosophical issues. Within analytic philosophy the important shift is from 'analysis' to 'explication' (Carnap 1950a, 3–8). Conceptual analysis seeks explicit, *a priori* (certainly non-empirical), exhaustive specifications (definitions or 'analyses') of key terms, claims, or principles by providing their necessary and sufficient conditions of meaning or proper use. In contrast, conceptual 'explication' is the partial and provisional specification of key terms (*etc.*) *in use*, so that explications, unlike analyses, are tied by actual linguistic practices to their relevant domains of thought, action and inquiry – and thus also to intellectual and cultural history. Like classical Pragmatists, Sellars explicates our concepts-in-use to gain theoretical understanding (*e.g.*, *SM* 4.24–30, .52, .58, 5.48ff, 6.7).

Following Carnap, a cornerstone of Sellars's philosophy is semantic ascent to a constructed formalised meta-language: All abstract entities are to be defined in and confined to the meta-language. Recourse to the formal mode of speech does not justify nominalism, though adopting it requires nominalism. Yet why expect philosophically significant confusions not to infect the formal mode of speech? This neglected issue was addressed by Sellars upon Aristotle's advice: Because these issues are so complex, elusive and easily obscured by incautious phrasing, one must consult carefully the opinions of the many and the wise. Sellars found the wise throughout philosophical history, from the pre-Socratics

33. As does, *e.g.* Stroud (2017), which considers what *beliefs* epistemologists must hold, or what they must *accept*. This continues, unwittingly, the focus of 'analytic transcendental arguments' upon issues of concept possession, thus entirely neglecting epistemology, which requires *using* concepts in deictic connection (reference) to localised particulars. Mere beliefs or acceptance do not suffice, *per* Kant's Thesis of Singular Cognitive Reference (below, §26).

to the present day,³⁴ because core issues regarding the logical forms of thought and the connection of thought with things are perennial, arising in distinctive, paradigmatic forms in each era (*SM* 3.15–30). One result of his expansive research is a catalogue and critical assessment of philosophical locutions, that is, of the ‘ordinary language’ of *philosophers*. Only by examining these can one find the most suitable, least misleading formulations of issues, specific theses, distinctions, and their relations. Sellars knew that the anti-systematic, piecemeal method of analytic puzzle-solving was doomed in its own terms by 1950 when Carnap adopted a moderately holistic semantics in ‘Empiricism, Semantics, and Ontology’.³⁵ Thus even when cast in the formal mode of speech, philosophy must be systematic as well as historical. The interconnection amongst philosophical issues provides another check against inapt formulations.

Recourse to a meta-language has a further implication, also characteristic of Sellars’s views and method. Valid inferences within any language are specified in its meta-language. Hence ‘proofs’, as Lewis acknowledged, are neither more nor less than deductions which accord with the rules instituted by the meta-meta-language (*e.g.*, Carnap’s *L*- and *P*-rules). Accordingly, the ‘basic concepts and distinctions’ of any philosophical account ‘are to be tested or “proved” by the illumination they provide, and the coherence of the story they make possible’ (*SM* 1.2).

These features of Sellars’s method appear prominently in *Science and Metaphysics*. Like Lewis, Sellars develops a distinctive conceptual pragmatism; unlike Lewis (though like Toulmin 1949), Sellars expressly defends ‘synthetic necessary truths’, necessary truths which depend upon their subject matter (*SM* 2.53, 3.18–19).³⁶ Like Kant and Lewis, Sellars argues that standard empiricist views of perception and sensory evidence are irreparably flawed.³⁷ Unlike them, Sellars seeks to turn this critique to the advantage of an improved, decidedly Kantian empiricism. Sellars regards Kant’s Transcendental Deduction not as a *proof*, but rather as a sophisticated theory of judgment which would resolve both scepticism and much of epistemological debate because both depend upon

34. Parmenides is mentioned by name thrice (*SM* 3.3, .24); the contemporary counterparts of Heraclitus are radical sense-datum theorists, trope theorists and causal process time-slicers, heirs to Hume all.

35. See Wick (1951). Sellars and Herbert Feigl founded this journal the previous year. Carnap’s (1950b) classic essay was revised in Carnap (1956), 205–221.

36. This formulation replaces Sellars’s (1963, 293–4, 298–320) previous defence of the ‘synthetic *a priori*’; there Sellars (1963, 293–4, 300–1) notes how his view converges with and diverges from Lewis’s. I strongly suspect Sellars adopted the phrase ‘synthetic necessary truth’ from Toulmin (1949), though documented evidence is lacking.

37. See Sellars, ‘EPM’ (1963, 127–196), on which see deVries and Triplett (2000). On Kant’s critique of empiricism, see Winkler (2010).

seriously inadequate analyses and pictures of the mind, nature, and their relations.³⁸ Rectifying these deficiencies requires a cogent philosophy of mind which dispels sceptical and epistemological quandaries. In addition to Kant's Transcendental Analytic, such a philosophy of mind requires Sellars's non-relational account of 'meaning' and 'aboutness' (*SM* Pr.6) and his account of 'picturing'.

Science and Metaphysics does consist in *Variations on Kantian Themes*: Sellars agrees with Kant that our commonsense world is phenomenal because it only exists in our experiencings, and that appearances to us are caused by noumena. However, Sellars contends that these noumena are the objects of the ultimate, Peircean science and are thus in principle knowable rather than unknowable.³⁹ Kant defines as transcendental 'all cognition . . . that is occupied not so much with objects but rather with our manner of cognition of objects, insofar as this [manner] is to be possible *a priori*' (A11–2/B25). Though Sellars demurs about its *a priori* status, *Science and Metaphysics* is an exercise in transcendental philosophy (*SM* 5.92) which aims to identify and to justify various synthetic necessary truths (*SM* 2.53, 3.18–19), including those which form the core of our cognitive use of concepts (*cf.* *SM* 4.23). His ch. I and Appendix aim to correct Kant's Transcendental Aesthetic; like Lewis and Strawson, Sellars rejects Kant's equation of space and time with our human forms of sensory intuiting. His three chapters on 'The Conceptual and the Real' (*SM* chs. 3–5) form a contemporary counterpart to Kant's Transcendental Analytic. *Science and Metaphysics* develops a distinctive form of transcendental idealism; its final chapter addresses fundamental principles of Kant's moral theory, as do parts of Kant's Transcendental Dialectic.⁴⁰ Transcendental philosophy requires what Kant calls 'transcendental reflection' (A261–3, 269, 295/B317–9, 325, 351), which 'ascribes concepts to sense or understanding, [and] is concerned with the relation between concepts and their objects, and with the distinction between objects of the senses . . . and objects of understanding or reason . . .' (Bird 2006a, 540, *cf.* 540–3). Transcendental reflection also considers how various sensory or conceptual representations ought properly to be related within cognitive judgments (*KTPR* §§1.2, 1.3). These issues are central to *Science and Metaphysics*.

38. See Sellars (2002a), pp. 75–7 (ch. 11, ¶¶34–37). Bird (2006a) develops a much improved 'descriptive metaphysics' (the first option mentioned above at the end of §14) by, in effect, developing this point from Sellars.

39. For a synopsis, see 'Wilfrid Sellars', in the *Stanford Encyclopedia of Philosophy*, then see deVries (2005), O'Shea (2007), Haag (2007) and Rosenberg (2007a); *cf.* deVries' (2007) review of Haag (2007).

40. The transcendental character of Sellars's philosophy is highlighted by Haag (2007), esp. 52–60, 359–422.

Sellars stresses the normativity of conceptual systems.⁴¹ The considerations Sellars brings to bear on his topics must be neutral between the commonsense or ‘manifest’ image we have of ourselves in our everyday world (examined pre-eminently by Aristotle and Strawson; resp.: *SM* 1.22, .38; 1.27, .43, 3.27, .71, 6.54–56) and the natural-scientific image of nature we have developed since Galileo; it must also be neutral between knowledge and morality. To assess neutrally the judgmental resources of each of these domains, Sellars’s over-arching transcendental standpoint cannot be an outgrowth of any one of these (sub-)domains, though it must be deeply informed within each and by them all. Where Kant examines our cognitive (specifically: our sensory, conceptual and judgmental) capacities to form legitimate cognitive judgments and to distinguish these from illegitimate forms (Westphal 2018a, §§2–3), Sellars examines specific sorts of propositions, all of which express the content of various kinds of judgment. In their respective ways, Kant and Sellars both examine the logical forms of thought, the feeling for which Sellars finds, prior to Kant, in Ockham’s disciples and in Leibniz, though it is ‘almost totally lacking in Descartes and his British successors’ (*SM* 2.10; cf. Parsons 2014). Sellars’s critique of philosophical and of commonsense locutions serves both as a phenomenology of various domains of human experience, as reflected in our talk within and about them, and as a basis for identifying the canonical forms of propositions (or forms of judgment) within each. This aspect of Sellars’s endeavour is a sustained examination and regimentation of forms of *classification*, through which he defends intensions and their roles in our acts of representing and our claims to truth. Both Kant and Lewis are committed to intensions and to their roles in classifications and in true and justifiable judgments; Sellars shows how central such systems are to human thought and how they can be defended against recent extensionalist dogma (*SM* 3.43, 4.52).⁴² Sellars’s transcendental analytic in his three chapters on ‘The Conceptual and the Real’ lacks the strong *a priori* character of Kant’s, yet his frequent and incisive explications of common philosophical confusions are exercises in impure *a priori* analyses of propositions, a neglected theme central to Kant’s *Critique* (Cramer 1985). Because Sellars’s critique includes our concepts of sensing and sensation, it assumes some of the role of Kant’s

41. See O’Shea (2007), 176–90; cf. deVries (2005), index under ‘normative’ and ‘norms’.

42. Quine’s ‘Two Dogmas of Empiricism’ assumed rather than proved extensionalist logic was the only tenable logical point of view, despite both Lewis’s detailed criticisms of *Principia Mathematica*’s extensionalism and Carnap’s non-Platonist intensions, ‘meaning postulates’. ‘The analytic-synthetic distinction’ is not a definite description because there are distinct analyses of ‘the analytic’, each which provides a distinctive contrast with ‘the synthetic’. That so few of Quine’s readers noticed his fundamental *petitio principii* deserves both historical and philosophical reflection. See Rosenberg (2007a), 33–46, Westphal (2015a).

‘Amphiboly of the Concepts of Reflection’ and catalogues many dialectical fallacies. If Kant’s target in the Transcendental Dialectic is traditional metaphysics, Sellars’s target is traditional and contemporary philosophy of mind; both areas purport to be non-empirical philosophical domains, and Kant’s Paralogisms contribute significantly to anti-Cartesian philosophy of mind.

Though highly formalised, Sellars’s transcendental logic is not formalist for four key reasons: It uses conceptual explication rather than analysis; its synthetic necessary truths are deeply informed by empirical inquiry and scientific methodology; its formal notion of truth, ‘S-assertability’, means ‘*correctly* assertable’ in accord with ‘the relevant semantical rules, and on the basis of such additional . . . information as these rules may require’ (*SM* 4.26), where such information is often empirical; and Sellars insists upon the mutual *irreducibility* of the orders of being, of knowing (including picturing, representing, method and explanation), and of obligation (*SM* 5.78, .87, .92, 7.26–37, .81–87). These non-formalist features of Sellars’s analysis align it significantly with Kant’s Transcendental Logic.

The key to Sellars’s transcendental logic is Kant’s ‘thesis of the primacy of judgmental content and judgmental form’, that judgmental content is irreducible to non-judgmental content (*SM* 3.1). (Sellars speaks of ‘logical contents’ to distinguish between logical operators and their counterpart occurrences as configurations of elements within pictures; *SM* 3.1, .12, 4.8, 5.15, .18, .24–26.) Sellars’s list of judgmental contents implicitly follows Kant’s Table of Judgments; it includes logical connectives, quantifiers, subject-predicate connections and modalities such as ‘necessary’; ‘the content *true*’, Sellars suggests, may appear in Kant’s Table ‘under the guise of “actuality”’ (*SM* 4.8*n.*). In the contemporary context Sellars cannot begin with a Table of Judgments,⁴³ but he argues in detail that ‘extensions are limiting cases of intensions and cannot be understood apart from them. Thus classes, in the logistic sense, cannot be understood apart from properties, nor truth apart from propositions’ (*SM* 3.43, *cf.* 4.52, .56–62). Within recent philosophy of language and semantics these are decidedly Kantian theses.

One key question of Kant’s *Critique* concerns intentionality: How (if at all) are we able to be aware of objects or events without the mind?⁴⁴ This is Sellars’s key question about ‘The Conceptual and the Real’, which he addresses in three stages: intentionality, truth and picturing. The first key to intentionality is intensions pertaining to individuals, universals and states of affairs (*SM* 3.1–11). The key to intensions is ‘a dualism of two

43. Long-standing criticisms of Kant’s Table of Judgments have been answered by Wolff (1995), (2009b), and a series of intervening articles; *cf.* Wolff (2017).

44. *KdrV* A197/B242; to Herz, 21 Feb. 1772, *GS* 10:130.

modes of *in-esse*, the *in-esse* of attributes in representings and the *in-esse* of attributes in things' (SM 4.5). Sellars contends that the actual existence of individuals and their characteristics in the world can be recognised or otherwise thought about because our sensory states, our thoughts and our language are structured by functional *counterparts* to individuals, their attributes and our experiences of them (SM 1.65–68). In their respective ways, conceptual episodes and linguistic episodes stand for their senses 'by virtue of the patterns they make . . . with other designs, with objects (in a suitably broad sense) and with actions' (SM 3.40). Sellars takes seriously Wittgenstein's notion of language games, likening these patterns to moves of pieces in a game, such as chess: The material constitution of the piece is secondary to its role or function and its actual moves or uses (SM 3.47–49, .55, 4.36–41, 5.38).⁴⁵

Within Sellars's metalanguage, attributes are treated as classifications of characteristics of things; individuals are treated as instances of various characteristics. Our classificatory intensions function something like Fregean senses (literally, 'ways of being given', "*Arten des Gegeben-seins*"), within actual or possible acts of representing (SM 3.10–15). To characterise these counterpart functions Sellars treats abstract singular terms (e.g., 'the pawn', 'the triangle') as distributive singular terms (SM 3.52–56, 4.12–16). Sellars introduces dot quotes to abstract from differences amongst natural languages, thus highlighting the logical forms of *thought* at a transcendental level. This approach affords a flexible, functional account of logical operators (which have senses though not intensions) as well as other abstract singular terms, the senses of which are intensions (i.e., classifications). Thus any occurrence of 'not' in English, '*nicht*' in German, or '*ниет*' in Russian (etc.), is an occurrence of 'the ·neg·' (SM 3.52–44), where 'the criteria for the application of dot-quoted expressions ("This is a ·not·". "This is a ·triangular·") consist in being subject to the same semantical correctnesses as the expressions within the dot quotes' (SM 3.68). This strategy affords perspicacious contrasts between such fraught notions as 'stands for', 'connotes', 'denotes', 'refers to' and 'names' (SM 3.55). Sellars summarises retrospectively:

The general strategy was to construe the *in-esse* of contents in representings on the model of *standing for* as a relation between linguistic expressions and their senses. Intensions were construed to be a subclass of senses, consisting of those which can meaningfully be contrasted with *extensions*, as triangularity can be contrasted with the

45. To make this point Sellars alludes to the legendary Texan version of chess, a joke in which the counties of the US state of Texas serve as the chess board, the pieces are two rich Texans' fleets of Cadillacs and a move is made by driving a Cadillac from one to another county. The simile is perhaps amusing, though provincial.

class of triangular things. . . . in addition to intensions, in this technical sense, the class of senses includes the items which were originally introduced as ‘logical contents’ and, perhaps, . . . ‘contents’ pertaining to practical thought. (*SM* 4.8)

‘Extensions’ are individuals who or which exemplify characteristics classified in intensions. Sellars proposes a functional role semantics which relieves the explanatory itch or the apparent queerness of how properties of things exemplify various kinds (classifications) we identify, in part by obviating the search for ‘objects’ which are supposed to *be* attributes (*SM* 4.32, .35–38, .52–53). This too is part of Sellars’s clarificatory philosophy of mind regarding judgment. He contends that exemplification, like truth, ‘is a matter of the semantical correctness of a certain performance – roughly the de-quoting of a quoted expression’ (*SM* 3.51).

Sellars replaces the concept of truth with ‘S-assertability’, according to which a proposition is ‘*correctly* assertable . . . in accordance with the relevant semantical rules, and on the basis of such additional . . . information as these rules may require’ (*SM* 4.26). S-assertability is universal in scope, though it takes specific forms depending upon the semantical rules governing different types of propositions (*SM* 4.27, 5.1). Thus, in brief, does Sellars defend the ‘primacy of classification and the truth performance’ (*SM* 4.60) against competing contemporary views which seek to eliminate them or reduce them to other functions.

Because Sellars’s analysis of truth is intensional and semantic in these regards, it does not itself pertain directly to relations between our representations and the world of individuals who or which are the extensions of all the intensions so far considered. To account for factual truth Sellars further explicates S-assertability (*SM* 4.41*n.*) in terms of ‘picturing’. His account of picturing is a subtle elaboration of Wittgenstein’s insight in the *Tractatus* that ‘one can only say of two objects that they stand in a certain relation by placing the corresponding referring expressions in a counterpart relation’ (*SM* 4.43). In accord with the irreducible primacy of judgmental form, the relations amongst pictured elements cannot themselves be represented *as elements within* the picture (*cf.* *SM* 5.18). Instead, the elements within a picture must stand in counterpart relations to the relations amongst the elements of whatever is pictured. Picturing is thus a relation between two relational structures, such as some worldly situation (*SM* 5.59) and our linguistic, perceptual or conceptual representings of it. Subject to the normative constraints of proper picturing, this affords either correct or incorrect picturing. Accordingly, referring expressions are ineliminable (*SM* 4.47) and the primary concept of factual truth is truth as correct picture (*SM* 5.9). Very roughly, atomic statements constitute “‘linguistic pictures’” of the world’ (*SM* 5.10, *cf.* 5.26). Sellars subtly elaborates this basic model, though details must be omitted here, except to note Sellars’s emphatic claim that ‘Wittgenstein’s insight [about picturing] provides the keystone

which can keep philosophical semantics from collapsing ever anew into a rubble of fruitless discussion' (*SM* 4.51).

This brief sketch of the structure of Sellars's analysis of intentionality shows its Kantian character in several of Sellars's results. One of these is his distinguishing between existential quantification and definite descriptions (*SM* 5.24–28) because referring expressions function within semantical uniformities which are tied to an agent's activities regarding relevant referents; this requires propositions which describe the relative mutual locations of these referents and of the agent, sufficient to identify the location 'here and now' of these referents (*SM* 5.30–34). This view is tantamount to Kant's semantics of singular cognitive reference. Recall (§§2.3, 3) that Kant recognised through his critique of Leibniz in the Amphiboly that descriptions of concrete particulars, no matter how specific, cannot themselves determine whether they are empty, definite (uniquely satisfied) or ambiguous (multiply satisfied). Hence however useful for semantics of meaning, definite descriptions are insufficient for *cognitive* reference (within non-formal domains); to be even a candidate for empirical knowledge, a description, proposition, or judgment must be referred to a particular (or to some particulars) *localised* by the Subject within space and time through singular sensory presentation.⁴⁶ Kant thus anticipates Evans's (1975) analysis in 'Identity and Predication', though he also supercedes it by analysing its rich epistemological implications. Kant's semantics provides excellent grounds for rejecting verificationist theories of meaning,⁴⁷ whilst insuring that genuine cognitive claims about particulars require locating them within time and space. In one stroke Kant refutes the transcendent cognitive pretensions of rationalism, 'knowledge by acquaintance', descriptions theories of reference, deductivist models of justification (*scientia*) within empirical domains, and proves the cognitive irrelevance of merely logical possibilities to the justificatory status of empirical claims (fallibilism).

Like Kant, Sellars holds a sensationist account of sensations, according to which sensations themselves (typically) are not objects of self-conscious awareness; instead they are components of acts of awareness, typically of particulars in our surroundings (*cf.* *SM* 1.24). Kant, Lewis and Sellars are direct realists about our perception of spatio-temporal particulars and critical realists about perceptual knowledge.⁴⁸

46. Essentially the same account of Kant's semantics of singular cognitive reference is ascribed to Kant in *KTPR* §§7, 8, 63.2, and by Bird (2006a), 255–6, 267–8, 525–30.

47. Including the verificationist 'Principle of Significance' Strawson (*BoS* 16) ascribes to Kant.

48. See George (1981) and Harper (1984b). Sellars's preoccupation with Kant's account of empirical intuitions appears to have occluded from him Kant's account of sensations and their synthesis-guiding *Merkmale* (B33, A320/B376–7, *cf.* *KdU* 5:484.13–18). When Strawson attends to perceptual judgment, especially in the later essays indicated above, he too espouses direct realism and critical realism.

Because synthetic necessary connections can be either statistical or universal, Sellars's attention to legitimate *versus* illicit forms of judgment and inference reveals that 'the sceptic, when he is not arguing invalidly from the absence of contradiction to physical possibility, is arguing invalidly from the consistency of "exceptions" with statistical necessity to the consistency of the latter with a hypothetical "universal exception"' (SM 3.19*n.*). Not only Kant's modal theory in the Postulates, but his entire Critical method, based upon the insufficiency of conceptual analysis for substantive epistemology, rejects any conflation of logical with physical possibility, just as the Transcendental Analytic blocks generalising from the universal possibility of perceptual error to possibility of universal perceptual error. (This main topic in PART 2 culminates in ch. 8.)

Sellars's account of the distinction between conceptual and non-conceptual (sensory) states of consciousness (SM 1.24) and his basic model of counterpart functional roles which partially constitute the content of overt speech and of both conceptual and sensory episodes (SM 1.44–49, .65–69, 3.7) are directly indebted to Kant's distinction between forms of sensibility and forms of judgment, between empirical intuitions and spatio-temporal forms of intuiting, and between phenomenal space and time and a logically possible noumenal counterpart duration and presence (SM 2.17, citing A770–1/B149, 798–9). His observation that 'basic factual predicates come in families of competing predicates, one or other of which must be satisfied by every object which *can* satisfy a predicate of that family' (SM 5.12) reflects Kant's account of disjunctive and infinite negative judgments (A71–4/B97–9), which are central to Kant's discriminatory account of causal judgments (KTPR, §36.3; below, PART 2). Even Sellars's Ryleans who can only think by speaking aloud echo Kant, who in the *Anthropology* (GS 7:332) highlights an important aspect of our human moral character by contrasting us to extra-terrestrial rational beings who can only think by speaking aloud.⁴⁹

More significantly, Sellars's meta-linguistic analysis of modality reflects Kant's thesis that the (transcendental) modal categories only concern the cognitive value of a judgment's copula, not the content of the judgment (A74–6/B99–101). Sellars's nominalism places all modality in the meta-language. Both the commonsense and the scientific images of the world are rife with modal discourse, all of which accordingly must be transcendently ideal, although, Sellars contends, increasingly accurate natural science can correctly identify physical particulars and their spatio-temporal relations. Accordingly, much of the conceptual framework of final science is transcendently ideal, though its objects are transcendently real and known in and through that framework.

49. Those whom Sellars tags as 'Ryleans' represent those views Sellars ascribes to them; he does not mistake those views for Gilbert Ryle's own views.

Sellars agrees with Kant that our commonsense spatio-temporal world of physical objects and all their perceptible qualities, delightful as they may (not) be, are transcendently ideal phenomena, though not due to Kant's idealist account of our spatio-temporal forms of intuiting. Sellars holds that ultimately commonsense physical objects do not exist *as* they are conceived within the manifest, commonsense image of the world; as thus conceived, commonsense objects and events exist only in our actual or potential representings of them (*SM* 2.29–32, .46–47, .49, .58–61, .71*n.*). The final science, should we survive to achieve it, presents us with a radically different, though far more accurate conception and specification of what we commonsensically take to be physical objects, and those scientifically described and certified particulars are the true causes of commonsense (yet transcendently ideal) appearances (*SM* 2.49, 5.95, .102). Objects and events as described by the ultimate science are the genuine noumena, though these are ultimately knowable. *Science and Metaphysics* is deeply Kantian, much more so than Sellars's critique of Kant's transcendental idealism may suggest.

There are five truly great theories of particulars and universals, their relations and our knowledge of them. Four are those of Plato, Aristotle, Kant and – do not be incredulous – Hegel (Westphal 2009, 2019c). As accounts of those issues, these theories converge very significantly, thus throwing their subtle and profound differences into illuminating relief. Historically, the fifth such theory would be Ockham's (*cf.* Kaufmann 1994, Parsons 2014), though because Sellars is a modern philosopher deeply concerned with the relations of mind and world, rendered so puzzling since the rise of natural science, Sellars's nominalism is the fifth such theory. Anyone seeking to ascertain the cogency of an interpretation of the *Critique*, not only philosophically but also textually and historically, can do little better than consider how well it fares against Sellars's writings on and through Kant's philosophy.⁵⁰ The remainder of this study, however, concerns epistemology and the re-development and defence of Critical Commonsense Realism; issues about universals and particulars shall be left aside, so far as possible.

16. Does McDowell Have Our Perceptual Knowledge in View?

John McDowell has published extensively on Kant, Hegel and Sellars in relation to epistemology, though not very constructively (Westphal 2008), because he neglects many important features and details of Kant's (and of Hegel's) account of empirical knowledge and he short-changes

50. *E.g.*, Haag (2007) argues that Kant's theory of intentionality is superior to Sellars's.

Sellars's (IKTE) much more nuanced, very Kantian account of perceptual experience and knowledge (Rosenberg 2007b).⁵¹ Here those disagreements are set aside because McDowell finally recognised that the view he 'recommends' is not Sellars's view. This amounts, McDowell (2016) claims in his title, to a Sellarsian blind spot. If McDowell's preferred view is not Sellars's, even less is it Kant's (*cf.* Bird 1996; Sellars IKTE) or Hegel's.

McDowell's recent, concise article offers several advantages. First, it appears to convey his last words on these topics; it omits altogether Kant's and Hegel's views, and because it aims to distinguish from Sellars's the view McDowell himself 'recommends', McDowell is direct, clear and succinct about the view he favours.

McDowell (2016, 100) dissents from Sellars's view that perceptual experiences, even if veridical, provide no more than 'probable' warrant for their relevant perceptual beliefs, even if true. He is indifferent between two versions of a representative perceptual episode. On one version, a percipient human being, whom I shall call Sam (whether Samantha or Samuel is here indifferent), 'has present to her a state of affairs consisting in there being something red and triangular in front of her'; on the second version, Sam 'has an object presented to her as red and triangular and in front of her'. McDowell states his core view thus:

. . . such an experience puts that knowledge at the subject's disposal by making present to her an environmental reality such that, in having it present to her, she has a conclusive warrant for believing there is something red and triangular in front of her. . . . In either version, she is, and is able to know that she is, in a position that leaves open no possibility that there is not something red and triangular in front of her. (McDowell 2016, 101)

Though acknowledging that our perceptual capacities are fallible (2016, 111, 112, 113), McDowell insists that this generic fallibility is compatible with distributive infallibility regarding some particular perceptual episodes.

51. Rosenberg's (2007b) critique focusses on McDowell's Woodbridge Lectures, 'Having the World in View' (1998). My critique focusses upon McDowell's subsequent writings on these topics, up through 2005. McDowell's (2008, 238–46) reply to my (2008) protests that I misunderstood his Wittgensteinian 'therapeutic' aims and style, in which he purports to use various Kantian or Hegelian terms to say what he prefers to say. I stand by my (2008) analysis; what he says using such terminology, phrasing or themes is opaque and ill-informed. He (2008, 239) claims I misunderstood (*e.g.*) his 'reading' of Kant's transcendental deduction. To the contrary, his remarks on Kant's Deduction are too brief and setchy to constitute a 'reading' (*i.e.*, an interpretation); *cf.* Westphal (2020d).

McDowell contends that his view does not relapse into mythical ‘givenness’ because:

. . . what is given to a subject in experiential thinking, including its having a certain categorial status, is given in a sense in which *receiving* it is an act of capacities that belong to the subject’s power of discourse. (McDowell 2016, 115)

If an experience partly constituted by that thinking is non-defective, then by virtue of the form of the thinking – its having content expressible by a noun phrase – the experience makes something present to the subject with the categorial status *object*. (McDowell 2016, 115)

Though McDowell’s phrasing is odd, his point appears straight-forward: His concern is with perceptual episodes in which Someone senses, veridically perceives and correctly perceives *that* (e.g.) there is something red and triangular there in plain view which S/he perceives.

The key problem concerns McDowell’s attempt to link truth or veridicality to infallibility. Sam’s ‘experiential thinking’ about what S/he currently perceives must be ‘non-defective’, McDowell claims (as quoted). When such an experiential, perceptual, cogitative episode is ‘non-defective’ insofar as it is veridical, McDowell (2016, 101) claims, it provides Sam ‘conclusive warrant’ of what S/he believes, warrant which ‘leaves open no possibility that there is not something red and triangular in front of her’. The passage containing both phrases is quoted just above; McDowell reiterates both claims frequently, about conclusive warrant (102, 105–6, 112) and about ruling out any ‘possibility’ of error (105, 108), most directly and emphatically regarding

. . . the central idea of the conception I described: some ostensible perceivings warrant beliefs by making present to their subjects environmental realities, states of affairs or objects, suitably related to the thinkings that the ostensible perceivings are or involve Such ostensible perceivings exclude any possibility that things are not as they are ostensibly perceived to be. If an ostensible perceiving warrants belief in that way, it is not just an ostensible perceiving but a perceiving (McDowell 2016, 103)

More briefly, in this same vein, he states that according to the conception he recommends:

. . . the truth of something that is seen to be so is guaranteed [*sic*] by the experience that is seeing it to be so. (McDowell 2016, 113)

Granting that McDowell has described a conception of perceptual experience and knowledge, what recommends his conception? McDowell asks and answers:

Why is the conception I have recommended preferable to Sellars's conception? The main reason is this: it does not put in doubt the very possibility of perceptual knowledge, in a way Sellars's conception does – though, unsurprisingly, Sellars and his followers do not acknowledge this. (McDowell 2016, 105)

Though he says this is his 'main reason', none other is offered. Here he reiterates his concern to rule out 'doubt [about] the very possibility of perceptual knowledge'. McDowell recommends doing so by re-asserting justificatory infallibilism, parcelled out distributively to those precious perceptual episodes in which Sam's experiential thinking is non-defective and hence is properly receptive and Sam's sensory perception is veridical.

Curious here is not Sellars's, but McDowell's own failure to acknowledge important implications. (1) The 'very possibility of perceptual knowledge' is only threatened by perceptual fallibility *if* justification (and accuracy) sufficient for knowledge must entail the truth of what is known. Like Kant, Hegel and all post-Gettier epistemologists, Sellars rejects infallibilist presumptions about cognitive justification. (2) McDowell fails to understand why Sellars, like Kant, accepts fallibilism about cognitive justification. Instead of seeking to identify individual perceptual episodes which are not only veridical, and the beliefs they afford both true and justified, but in addition are such that their 'warrant' suffices to rule out 'any possibility' of error or (*also*) insufficient cognitive justification (the failed foundationalist quest), Sellars like Kant aims to block the sceptic's generalisation from occasional perceptual mistake or misjudgment, *i.e.*, from the universal possibility of perceptual error *or* insufficient justification (distributive), to the possibility of universal perceptual error or insufficient justification, *i.e.*, to global perceptual scepticism. Sellars puts Kant's strategic rejoinder in these terms:

. . . the sceptic, when he is not arguing invalidly from the absence of contradiction to physical possibility, is arguing invalidly from the consistency of 'exceptions' with statistical necessity to the consistency of the latter with a hypothetical 'universal exception'. (Sellars *SM* 3.19*n.*)

McDowell's recourse to justificatory infallibilism, however carefully parcelled out distributively to non-defective experiential thinkings individually, still presupposes the validity of the global perceptual sceptic's fallacious inference. (3) Absent from McDowell's published research is

familiarity with the examples and analyses of the open texture of empirical concepts and our *use* of them, summarized above (§5) and mentioned by Sellars (EPM 53, 132/§§18, 48; SM 3.17, 5.27), which justify fallibilism about any and all empirical knowledge. (4) Absent from McDowell's published research (including his 2010, 2013, 2016) is familiarity with (*e.g.*) Dretske's (1971) account of conclusive reasons, and his subsequent reasons for rescinding such an account (as 'unstable') and developing his information theoretic epistemology (*KFI*). (5) McDowell nowhere mentions the important distinction between formal and non-formal domains, central to Kant's entire Critical philosophy, highlighted by Wolff (1995; 2009a, 2009b), though also stressed by C.I. Lewis (*MWO*; *cf.* Lewis & Langford 1932) and Carnap (1956), that outside of pure axiomatics, all formalised deductive systems require semantic and existence postulates which themselves are non-formal, substantive presuppositions (even to specify the relevant domain) which cannot be justified or assessed by formal techniques alone. This is why, as I have stressed (§§2.1, 11), infallibilism is relevant *only* to purely formal domains; *all* substantive domains, including the entirety of empirical knowledge and epistemology, require and afford only fallibilist accounts of justification. (6) Absent from McDowell's published research is familiarity with Tempier's (1277) condemnation, and its cardinal role in fostering Cartesian infallibilism, by which alone Aristotle's flexible model of a proper science was converted into strict deductivism (Boulter 2011). (7) There is no valid inference from *de facto* perceptual-cognitive success ('non-defective' perception or 'experiential thinking') to McDowell's (2016, 103, *cf.* 105, 108; 2010, 2013, 267–9) unrestricted modal claim that these favourable experiential episodes 'exclude any possibility [*sic*] that things are not as they are ostensibly perceived to be'. Amongst the domain of logically contingent truths (to which belongs any truths regarding anyone's perceivings of whatever *S/he* perceives), there is no valid inference from 'It is true that Sam is now perceiving this apple in her hand' to 'Necessarily, it is true that Sam is now perceiving this apple in her hand'. McDowell's concern to rule out *any* possibility of error (or lack of justification) is uncharacterised, hence hopelessly unqualified, *per* Tempier's edict. Neither does McDowell provide any other reason(s) which could warrant his infallibilist conception, certainly not conclusively! (8) Greenberg's (2008) reconstruction of Kant's account of modality may appear to bolster McDowell's unrestricted modal claim. Instead, it repeats rather than resolves these issues about the modal relations between *de facto* veridical perception and judgment (regarding any actual *de re* causal necessity) and any stronger (im)possibilities, even if these be restricted to Kant's transcendental modalities (below, §17).

My conclusions regarding McDowell's shortcomings may appear uncharitable, but the key questions concern accuracy and understanding. McDowell (2016, 110) mistakes Sellars's (*SM* Pr.6 [*ix*]) 'non-relational'

account of ‘meaning’ and ‘aboutness’, claiming that perceiving is an actual relation between an actual person and what *S/he* actually perceives in her surroundings, ‘(not just an “intentional relation”) to the state of affairs or object’. Sellars is at pains to show that ‘meaning’ or anyone’s grasp of meaning is not any object (= the meaning itself) nor the grasping of any such object, *and* also that Someone’s *perceiving* an object is perceptual experience of *that* object. This perceiving is ‘intentional’ insofar as attention is directed *to* that object, and involves perceptual discernment of *that* object *as* featuring some of its perceptible, currently perceived characteristics. Whether Sellars’s account of intentionality (*SM*, *IKTE*) is adequate is a further issue (*cf.* Haag 2007), but McDowell’s conceptual mis-takings are (literally) incredible and pervasive. McDowell fails to understand Kant’s, Hegel’s or Sellars’s epistemological views; neither does he understand epistemology or its illuminating history, sufficiently to grapple effectively with his chosen topics. His recourse to infallibilism shows instead that he remains perched upon the oscillating see-saw he (*M&W*, *HWV*) claimed to diagnose and defuse. The broad strokes of his therapeutic gestures only foster confusion; they have not cured the presumed therapist. I do not contend that epistemology requires the kinds of detailed examinations developed by (*e.g.*) Kant, Hegel, Sellars or Dretske. Excellent epistemology in an ordinary language mode has been developed by Austin, P.F. Strawson, Travis and Hyman (2003). They too attend carefully to crucial details of relevant phenomena. Below (§59.3) I offer a conjecture about why McDowell frames his account of perception as he does, and how it suffers from excess abstraction.

17. Greenberg’s Reconstruction of Kant’s Account of Modality

Robert Greenberg (2008) responds on behalf of Kant’s account of modality to a host of objections to Kant’s use of modalities, especially in his transcendental idealism, and to objections against modality made more generally by Quine. In responding on Kant’s behalf, Greenberg makes shrewd use of post-Quinean accounts of modality, especially those developed by Kripke and David Kaplan, to develop a tenable Kantian account of real *de re* modality. Greenberg (chs. 8, 10) provides a semantic restatement of several of Kant’s key modal theses, interesting in their own right. To defend Kant’s account, Greenberg revises Kaplan’s neo-Fregean account of modality, which holds of intensions, so as also to include within its scope carefully qualified objects as values (or particular instances) of base-level intensions (represented as carefully specified classifications). The issues involved are somewhat technical; Greenberg’s subtle account defies brief summary. Readers who find this § forbidding may turn to the next, concluding section of this chapter.

As instructive as is Greenberg's Kantian re-analysis of modality, I do not believe it suffices for Kant's theory of empirical knowledge. Greenberg's (2001, 2008) main concern is with Kant's theories of *a priori* knowledge; mine thus diverges from his in this regard. One main point about which I dissent is this: Showing that Kant commands semantic resources which evade or resolve various objections to modality or to his uses of modality is illuminating and important. However, Greenberg appears to omit the question, why should we adopt the raft of transcendental idealist propositional contexts within which alone Kant's host of (putative, neo-Fregean) *de re* necessities are said to hold? How Greenberg (123, *cf.* 149) models 'Kant on Kaplan' is interesting and useful, but semantic modelling is (at best) explicatory, not justificatory; neither does it suffice for epistemology. The limited scope of Greenberg's (131) modelling appears to be conceded a bit later; yet premiss (4) of his 'derivation' (132–5) of Kant's claim about the Euclidean character of any spatial appearances to us presumes rather than justifies Kant's claim that our outward form of spatial intuiting *is* Euclidean. Kant expressly (A727–30/B755–8) lays no weight on sheer 'conceptual truth' (132, *cf.* 133, 151). Rather, Kant engages in conceptual *explication*, and argues on primarily epistemological grounds that the formal and *a priori* necessary conditions for the possibility of human apperception are far richer than empiricists (amongst others) have supposed. These conditions include, centrally, Kant's examination of our cognitive *capacities*, which alone enable us to use concepts, principles and judgments cognitively. These riches, fortunately, do not require Kant's transcendental idealism, nor any such view. Kant's exposition of the *concept* of space is one facet of his view; how or why that (Euclidean) concept is supposed to pertain to any sensory intuition(s) possible for us within space is a further facet of Kant's view, one which requires justifying his claim that his transcendental idealist view, that space = a human form of sensory receptivity, is the only tenable (humanly possible) alternative to the (purportedly) untenable alternatives of Newton (absolute space) and Leibniz (space is only relational). Semantic contexts alone, however perspicacious, cannot justify such a result. (For reasons developed in *KTPR* I do not think Kant justified that transcendental idealist result.) That 'Euclidean geometry must refer to outer appearances' (135) is at most a point about reference, not about the empirical accuracy or adequacy of Euclidean metrics; denotation does not suffice to secure connotation (or ascription). Greenberg's (137) S_4 ('the *a priori* proposition that our form of outer intuition is Euclidean-spatial'; 136) requires demonstrating *a priori* that this proposition holds *of* our outer form of sensory intake, *and* in consequence of that, that any and all sensory intake which can contribute to our (apperceptive) sensory perception of spatio-temporal particulars necessarily, uniquely and precisely affords Euclidean metrics. Neither of these claims is merely 'a conceptual, and thus *a priori* truth for Kant' (137); neither are they tenable if we elide

that curious qualifier ‘for Kant’. Greenberg’s reconstruction is invalid, for reasons Kant understood, published and justified. Greenberg (140) notes that Kant must demonstrate ‘that the categories must refer and apply to appearances’; this applicability must also afford sufficient *accuracy* – as in the case of purportedly Euclidean spatial particulars: Both denotation and connotation are crucial to Kant’s (explicatory *and* justificatory) aims, not only regarding the categories, but also the *concepts* ‘space’ and ‘time’. Greenberg’s (150–1) reconstruction of Kant’s ‘top down’ approach to *a posteriori* necessity *de re* neglects and indeed excludes Kant’s justificatory fallibilism regarding our knowledge of causal modalities (*cf.* below, §§55–59, 66–69). If it be *de re* necessary that ‘water is H₂O’ (153–6; Greenberg’s premiss (2)), it is entirely contingent that the stuff coming out of the tap = ^(*de re* necessarily) H₂O; Greenberg’s premiss (2) not only may be false (155, 156), it *is* false, even if we happen only to have water flowing from (the relevant) taps, and charitably disregard impurities, naturally occurring isotopes, what’s on tap at the tavern and the vats common in industrial factories using significant volumes of liquid chemicals – often literally kept on tap. This is precisely the kind of mixing of contexts specifying necessities *de re*, such as ‘ $\square 9 > 5$ ’, with merely contingent contexts using a relevant designation, which had been rightly ruled out earlier (111–2) regarding ‘ $9 =$ (the number of planets in our solar system)’. Greenberg’s ‘strengthened argument’ (155) requires a false ‘assumption’; his premiss (2) is strongly, unwarrantedly modal, *vis.*: ‘(2) The stuff that comes from the tap *doesn’t exist unless* it is H₂O’ (154, emphasis added; *cf.* 159). Greenberg (175–7) acknowledges the distinction between referential and attributive uses of his identifying descriptions, but neglects how any of his preferred propositions regarding the real necessity of a *de re* causal necessity might be *used* to identify whatever comes out of the tap, though only succeeding referentially, not attributively, hence failing to identify any real *a posteriori* causal necessity. Perhaps ‘Donnellan’s distinction . . . will not affect the derivations of the real modalities’ (176, *cf.* 177, 179–81); nevertheless that distinction (between referential and attributive usage) does affect their use, significance, interpretation and cognitive justification in any empirical context; Greenberg’s (179–80) ‘derivation of real necessity’ (regarding the atomic number of gold) presupposes a proposition, his premiss (1), which may be used successfully to refer to some stuff whilst failing to succeed attributively regarding that same stuff and its allegedly (causally) necessary material constitution (its atomic number). This circumstance is unavoidable, precisely because, in contrast to Kaplan’s and Carnap’s restriction of modality to intensions, Greenberg’s account aims to ‘relate modal propositions to propositions expressing extra-linguistic facts about objects that are concrete . . .’ (190). Precisely in relation to spatio-temporal particulars Donnellan’s distinction between referential and attributive success is crucial; nothing in Greenberg’s account avoids or evades the fundamental fallibility of

causal-modal ascriptions to material particulars; expanding the domain of relevant (modal) propositions (190–1) does not suffice to capture their intended domains of *particulars*. Interpreting ‘ $\Box Qa$ ’ as true (194) does not suffice to *instantiate* it as (actually) true in reference to some putative particular thought to be a relevant instance of *a*. ‘Interpretation’, in this standard logical sense, is an opaque context; ‘if $\Box Qa$ is interpreted as true’ (194), then ‘ $\Diamond \sim Qa$ ’ must be *interpreted* as false. So interpreting either proposition does not suffice to specify which of them *is* true, or *is* the case, whether indicatively or modally. Greenberg mistakenly infers instead that ‘ $\Diamond \sim Qa$ must *be* false’ (194, emphasis added).⁵²

Greenberg’s reconstruction assimilates Kant’s causal modalities to his (putative, reconstructed) transcendental idealist modalities (*cf.* 174, 179). Kant rightly distinguished these two kinds of modality (A219–20, 227–8/B266–7, 280; see below, §§37–40). Greenberg’s semantic reconstruction of Kant’s epistemology, like contemporary ‘modal metaphysics’, suffers the plight Kant identified in rationalist metaphysics, of ‘merely groping, and worst of all, amongst mere concepts’ (Bxv). This results inevitably from neglecting Kant’s Thesis of Singular Cognitive Reference (below, §26), and from the ineluctable relevance of *ceteris paribus* clauses to any and all causal-explanatory contexts (below, §69; *pace* Greenberg, 157–8).

Greenberg’s (2008, 70) ‘more phenomenalist’ view of Kant derives from too Quinean an approach to Kantian ‘objects’ and the theories said by Greenberg (*cf.* 73–5, 100–2) to commit Kant to such reifications. Greenberg’s approach risks transcendental subreptions (A619, 733/B647, 761; *cf.* below, §§42, 79) avoided here, largely by not reifying *aspects* of acts of knowing into (alleged) objects (*cf.* Bird 2006c, 133). Greenberg’s objects as ‘initiators’ (of experience) I treat instead very like Travis’s (2008) view of occasion sensitivity. Put otherwise, I develop an appearing rather than an appearance account of Kant’s experiential *Erscheinungen*; Kant’s revisions to the B edition clarify his adherence to an appearing theory.⁵³ Greenberg (2008, ch. 5) is at pains to justify his ascription to Kant of logical *presupposition* relations. Kant makes the required distinctions expressly in his Table of Judgments by not treating negation truth-functionally, so as to retain the cognitive and epistemological significance

52. A parallel modal fallacy occurs in McDowell’s (2010, 245; 2013, 267; 2016) view of ‘indefeasible [perceptual] warrant’. On McDowell (2010) see Westphal (2018a, §107); on his (2016), see further below, §59.3.

53. The contrast between ‘appearing’ and ‘appearance’ accounts of Kant’s *Erscheinungen* is examined by Howell (1992), 37–40, 71–75, 343, 348–9; an ‘appearing’ account is comparable to Chisholm’s adverbial account of sensing. I subscribe to Melnick’s (1989) account of Kant’s reworking of his various mss.; his findings are charted at the end of Westphal (2020b); an English version is available on my website under ‘Reference and Research Materials’.

and use of infinite negative judgments (A71–3/B97–8), as has been made amply clear by Wolff (2009a, 2009b, 2017).

Merely ‘assigning’ values to variables in logically pristine propositional formulae, or assigning truth values to the resulting propositions (194), sweeps all real epistemology and empirical science under a logician’s rug. Kant knew better than merely to claim that ‘the necessity of empirical intuition consists in its providing an interpretation of otherwise uninterpreted judgments consisting exclusively of concepts and logical operators’ (194). Cogent semantics, both of meaning (classification, intension) and (deictic) reference, is necessary, yet insufficient for epistemology or for history and philosophy of science. This is one central thesis of the present study. Philosophers concerned with empirical knowledge should devote more attention (*e.g.*) to materials science and rather less to modal logic and ‘metaphysics’. Howard Stein pioneered the proper ways forward in HPS; see below, §§65–73.

18. Conclusion

There is a common point to my rejoinders to McDowell’s invocation of infallibilism and to Greenberg’s attempt to harness Kant’s account of modal categories to capture *de re* necessities. Kant’s account of the modal categories *is* revolutionary (Bird 2006a, 501–21, 739–56; Wolff 2017; Abaci 2019), yet in more subtle and important ways than these. Kant distinguishes modalities pertaining to logic, to humanly possible experience (transcendental), to actual experience, to material causality, *and* to the distinctive status of the synthetic necessary (*impure a priori*) truths identified and justified by his transcendental critique of reason, by which he identifies, distinguishes and deploys these several kinds of modality. Kant’s official modal *principles*, examined in the ‘Postulates of Empirical Thought’, are expressly transcendental modalities, concerning what we can identify as possible within the domain of human experience and knowledge, what is actual within this domain, and what (if anything) be necessary *within* this domain. In specifying these broad yet fundamental modalities, Kant distinguishes them from causal modalities *de re*, examined in the ‘Analogies of Experience’, from the epistemological modality central to his transcendental justification (proof) of Critical commonsense realism, and of course from formal modal logic. That he does so, and how and how very well he does so, is examined in PART 2, starting in the next chapter (ch. 4). My rejoinders to McDowell and to Greenberg highlight illustrative misapprehensions of Kant’s sophisticated treatment of distinctive kinds of modality, which underscore how the content (intension) of our *de re* causal modalities and the empirical justification of our proper empirical use of causal modalities differ from, and should not be assimilated to, the contingencies of our sensory (empirical) evidence for them. Kant’s transcendental account of the very possibility

of human apperceptive experience affords a subtle and sound account of how our perceptual experience and judgments afford accurate, justifiable conjectures and, with due care, sufficiently robust evidence regarding causally structured perceptible particulars in our environs, which *can* be examined and identified precisely by exacting scientific or technical inquiries (*per* ch. 10), in contrast to cognitively unbridled speculations about human behaviour and mindedness (chs. 11–13). Appreciating the centrality of Kant's Thesis of Singular Cognitive Reference to his Transcendental Dialectic reveals how that core aspect of Kant's exposure of dialectical illusions likewise highlights dialectical illusions within the domain of human experience, fostered by unCritical philosophical reflections (PART 3).

Scholarship on Kant's *Critique*, when conjoined with historical sensitivity and textual scruple, has certainly benefited from engagement with analytic philosophy and has often produced findings with broad philosophical significance to analytic philosophy.⁵⁴ Some themes from Kant's thinking are abroad within analytic philosophy, yet tend to be rather bland appeals to framework principles for structuring inquiry or analysis, notions more neo-Kantian than Kantian (*cf.* Strawson 1992, Bird 1998). Regrettably, the philosophical results of Kant's *Critique* do not appear even yet, as Strawson (*BoS* 29) observed, to have been 'absorbed into the philosophical consciousness'. Stroud (1977b, 105) observed, 'it is not easy to incorporate the depth and power of Kant's transcendental deduction into present-day philosophical attitudes and preconceptions'. Indeed so: Kant delivered what he promised, an 'altered method of our way of thinking' (*Bxviii*, *cf.* A270, 676/B326, 704). Understanding, appreciating, assessing and *using* Kant's *Critique* require changing our ways and methods of thinking. For historical reasons, self-critical methodological reflection on one's own way of philosophising has been subdued in much recent analytic philosophy, which has prioritised novelty over cogency. Consider Comte's primary use of his cyclical three-stage law of human intellectual development (mythological, theological and scientific eras) to prompt reflection on one's own historical and philosophical position within some one of those stages. Comte meant reflecting upon why the proper scientific outlook is positivist. In contrast, Mill always took positivism for granted. Thus was Comte's rich kind of philosophical reflection lost to the Anglophone tradition in their correspondence (Scharff 1995). Consequently few analytic philosophers recognise how firmly

54. Excellent examples include Dryer (1966), Melnick (1989), Howell (1992), Grundmann (1994), Rosenberg (2005) and Haag (2007). This is not to suggest that the great historical works on Kant's *Critique* have become irrelevant, nor that hermeneutical scholarship on the *Critique* has not progressed. This chapter has a specific scope; for balanced accounts of recent scholarship on Kant's *KdrV*, see Natterer (2003), Motta *et al* (2020).

Russell planted the analytic tradition back into the 18th-century (C.E.) framework of Hume's first *Enquiry*. Likewise, few recognise how deeply Cartesian is Stroud's apparently innocuous presentation of global perceptual scepticism, a feature thrown sharply into relief by Kant's widely neglected anti-Cartesianism (below, §§19–64). This book aims to show epistemologists how and why to change their method of thinking about human knowledge, in order to make much better sense of what we can and do know, by appreciating Kant's Critical resources for our shared epistemological issues and concerns.



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

Part II

Kant's Critical Epistemology



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

4 Constructing Kant's *Critique of Pure Reason*

19. Introduction

Kant's *Critique of Pure Reason* is as radically innovative and incisive as it is baffling in outline and often in detail. It grew in stages, as Kant developed three successive, ever more adequate accounts of our human capacity to think, each successively responding to key problems or gaps Kant found in its predecessor, starting from his own pre-Critical views. The two quite different editions (1781, 1787) both belong to the third, final stage of Kant's theory (Melnick 1989). Understandably, Kant re-worked his various working manuscripts, and then his first published edition. Unfortunately for us, his readers, he had no occasion to revise the whole into one terminologically consistent and orderly text – in part because he grew to realise he had inaugurated an entirely new, comprehensive approach to philosophy. This he called 'Critical Philosophy', presented in the three Critiques: the *Critique of Pure Reason*, the *Critique of Practical Reason* and the *Critique of Judgment*, together with his *Critical a priori* first principles for theoretical and for practical philosophy, presented in the *Groundwork of the Metaphysics of Morals*, the *Metaphysics of Morals*, the *Metaphysical First Principles of Natural Science*, and in some regards also in the *Religion within the Limits of Reason Alone*.

Kant insisted, rightly, I believe, that reason is architectonic, and hence systematic, and he did indeed develop his Critical philosophy systematically, thoroughly and integrally. This holds not only of his Critical system of philosophy, but also each main work, including the *Critique of Pure Reason*. Much discussion of Kant's philosophy, especially Anglophone discussion, has focussed on Kant's unique transcendental idealism. Much more important is that, and how, Kant's Critical philosophy develops a systematic, comprehensive critique of rational judgment and justification across the domain of our rational inquiries, also demarcating purported domains in which we can only pretend to know (Westphal 2018a, §§2–3).

This chapter reconstructs how Kant constructed his *Critique of Pure Reason*. I begin with Kant's initial clues (§20). There are two. One is

Johann Nicolas Tetens's innovation, that to demonstrate that a concept or principle has a genuine cognitive use requires 'realising' it in this sense: demonstratively indicating at least one relevant instance of that concept or principle (§20.1). The second is Kant's methodological challenge, to figure out how to identify credibly and accurately by philosophical reflection the structure and functioning of *sub-personal* cognitive processes (§20.2). These are functions and conditions which must be satisfied, *if* we are to be at all self-conscious in the most basic ways we are. Kant departs radically from both rationalism and empiricism in this regard. I then consider briefly why Kant holds that we have any *a priori* concepts (§21), taking up one of his examples: the general concept of 'cause'. Then Kant's issues about perceptual synthesis are specified by four problems of sensory 'binding', as it is now known (§22). These issues are fundamental to sensory-perceptual discrimination and identification. One of Kant's central tasks is to discern what is required for such identification and discrimination to be at all possible for us. What functions of sensory-perceptual syntheses must there be? Which such functions can or do we exercise? Kant's clue is Aristotle's logic, now known to be both complete and ever so empirically useful (§23). I elucidate these points by recounting the Square of Categorical Oppositions (§23.1) and briefly indicate how Aristotle's syllogistic logic is cognitively fundamental, because it is the kind of logic of judgment and inference required to identify, develop, assess, revise and *use* classifications and taxonomies (§23.2). Aristotle's logic provides Kant's clue to the 12 fundamental formal aspects of judging, identified and reconstructed by Michael Wolff (§24). I then consider, briefly, how Kant uses his Table of 12 formal aspects judging to identify 12 fundamental concepts, the Categories – plus two more: the concepts of 'space' and 'time' (§25). (The functions Kant assigns to these concepts and their roles in guiding sub-personal sensory-perceptual synthesis and in enabling explicit, self-conscious cognitive judgments are diagrammed in §43). Next I introduce Kant's semantics of singular, specifically *cognitive* reference (§26), which is required for experience or knowledge in any non-formal domain, such as that of spatio-temporal particulars (§26.1). After stating what I shall call Kant's Thesis of Singular Cognitive Reference (§26.2), I specify a set of five cognitively distinct activities and achievements, crucial to both empirical knowledge and to epistemology (§26.3).

Having so prepared, I recount Kant's constructive strategy in the *Critique of Pure Reason* (§27), beginning with his (express) methodological constructivism (§27.1) and the four (generic) steps involved in the constructivist strategy (§27.2). Kant's indicates two distinct uses of the Categories, one in sub-personal sensory-perceptual synthesis, the other in explicit judgments we make about whatever we perceive or experience (§27.3). I then review briefly Kant's lead question (§27.4), his most basic inventory of our cognitive capacities (§27.5) and his main constructive epistemological question (§27.6). Answering that question

requires addressing five Critical sub-issues (§27.7). With Kant's agenda thus stated and summarised, I synopsis the structure of Kant's *Critique of Pure Reason* (§28), focussing on his 'Analytic of Concepts' and 'Analytic of Principles'. This structure and its use of Kant's inventory of basic formal features of our cognitive capacities is tabulated (§30), after concluding briefly by reiterating the aims and scope of this reconstruction of Kant's construction of the *Critique of Pure Reason* (§29).

20. Kant's Initial Clues

Hume awoke Kant from his 'dogmatic slumbers' (*Prolegomena* 4:260) by making clear that our mere possession of concepts does not and cannot suffice to justify any *use* of those concepts in any genuine, legitimate cognitive judgments.

20.1. Tetens's Keen Deictic Point

Hume's negative insight was sharpened by Tetens (1777; *cf.* GS 28:57), who introduced this technical terminology to mark a key issue:

Tetens: To 'realise' a concept or principle is to demonstrate, *i.e.*: to point out, to hand over, to ostend, at least one proper instance of that concept or principle.

However poorly Tetens may have fared with that requirement (GS 28:57), this task is exactly Kant's undertaking in the *Critique of Pure Reason*: To specify that, and how, *a priori* concepts and principles can be 'realised' by identifying and ostending at least some of their proper instances, and to distinguish those legitimate cognitive uses from other concepts, principles or illicit usage which cannot be so realised. About this latter group Kant then inquires whether or how they may indirectly serve legitimate cognitive or moral aims.

Most concepts are *classificatory*: they classify features or characteristics of particular individuals, and in that way also those individuals which have or lack those features or characteristics. In this regard, concepts are inherently general; they may be general in the extreme, such as 'particular individual', 'event', 'relation'; or they may be very specific, such as 'Prussian blue spot on the dusty periwinkle blue petal of a globe thistle' or '*Streptomyces lavendulae avirens*' (NRRL B-16576).¹ Yet no

1. For many such examples, see *Bergey's Manual of Systematic Bacteriology*, 2nd ed. (Springer, 2001–2012), 5 vols. The indicated code is used by the USDA's Mycotoxin

matter how specific a concept or classification may be, in principle it admits of further speciation or sub-division; there are no *infimae species* (A655–6/B683–4).

Regarding empirical concepts, no matter how thoroughly we may describe or specify spatio-temporal particulars, of whatever kind or scale, whether there be no such particulars, only one or perhaps several is an entirely distinct issue. Conceptual (or descriptive) specificity (intension) does not suffice for unique specification of any spatio-temporal individual. This point Kant makes against Leibniz in the ‘Amphiboly of the Concepts of Reflection’, by appeal to two drops of rain, qualitatively and volumetrically identical in size, shape or chemical composition, which nevertheless are distinct, particular individuals insofar as they occupy distinct regions of space (A263–4/B319–20).

To ‘realise’ any empirical concept one must locate and identify at least one representative example. So doing is an empirical, not a philosophical, task; no other kind of justification or ‘deduction’ of empirical concepts is possible, nor required (A84–5/B116–7). The philosophical problem concerns *a priori* concepts: Can they be ‘realised’? Can we identify and localise relevant, proper instance of any *a priori* concept? If so, of which *a priori* concepts, which instances, and why so?

Insofar as we may conceive and construct objects of pure reason, as in mathematics or axiomatics, the conceptual specification *and* construction of that object suffices for its unique, particular identity and identification (A263–4/B319–20). Concerning the divine, the world as a whole or the infinite divisibility of matter, we consider concepts or principles which purport to be about particulars which (or whom) we do not construct conceptually nor intuitively; neither can we locate or localise these purported objects empirically. These concepts and their associated principles cannot be ‘realised’ on *a priori* theoretical grounds.

20.2. *Philosophical Reflections on Sub-Personal Cognitive Processes?*

The problem confronting Kant’s task of ‘realising’ our most basic *a priori* cognitive concepts, the categories, is this:

That which is presupposed in any and all knowledge of objects cannot itself be known *as* an object. (*KdrV* A402)

Prevention and Applied Microbiology Research Unit, at the National Center for Agricultural Utilization Research in Peoria, Illinois (USA); now using the acronym ‘ARS’ (Agricultural Research Service), no longer ‘NRRL’ (Norther Regional Research Laboratory). Above I said ‘most’ concepts are classificatory merely to avoid quibbles about whether, *e.g.*, logical constants, proper names, demonstrative or indexical terms, or our understanding of any of these, count as ‘concepts’.

This problem provides Kant's clue: To determine whether, and if so how, our most basic *a priori* cognitive concepts are necessary for us to be able to experience, identify or know any sensed particular at all.

21. Concepts *A Priori*?

It may seem that Kant is too quick and confident to presume there are *a priori* concepts, or that we have any. Kant is as incisive as he is brief about the key point. Regarding his account of the concept 'cause', Kant acknowledges that

It might seem indeed as if this were in contradiction to all that has been said on the procedure of the human understanding, it having been supposed that only by perception and comparison of many events repeatedly and uniformly following preceding appearances are we led to the discovery of a rule according to which certain events always follow certain appearances, and that thus only are we enabled to form for ourselves the concept of cause. If this were so, that concept would be empirical only, and the rule which it supplies, that everything that happens must have a cause, would be as contingent as the experience on which it is based. The universality and necessity of that rule would then be fictitious only and devoid of any true and universal validity; it would not be *a priori*, but founded on induction only. (*KdV* A195–6/B240–1)

The view Kant contradicts is standard empiricist doctrine, classically formulated by Hume's concept empiricism and his view that our beliefs about causal relations are based on customary associations. The empiricist view is that we develop a concept of causality from observing particular causal relations. Note that two principles are required in such a process. Observing particular causal relations involves using the principle that for the same kind of event there is the same kind of cause. This may be called the particular causal principle. The general causal principle is that for each event there is some cause or other. This principle specifies the general concept of causality. According to standard empiricist doctrine, we obtain this general concept and general principle of causality on the basis of experiences which witness (apparent) instances of the particular causal principle.

Kant agrees with Hume that knowledge of particular kinds of causal relations, *i.e.*, knowledge of instances of the particular causal principle, can only be based on repeated experiences with events and their causes. Kant denies that such experiences can generate the general concept or principle of causality. Indeed, he argues that we cannot experience particular kinds of causal relations without presupposing and using the general concept and principle of causality! To understand why, follow Beck (1978, 121–9) back to Hume's study (*T* 1.4.2.20).

Hume begins his account with the alleged obvious facts of experience, that we experience sensory ‘impressions’, fleeting appearances, each of which is exactly what it appears to be and nothing more. Hume finds that our belief in ‘the continued existence of body depends upon the coherence and constancy of certain impressions’ (*T* 1.4.2.20). However, he recognises that impressions are not nearly coherent nor constant enough to generate such a belief. Our experience and memory tell us nothing about unobserved objects, and we frequently experience only events which we regard as effects of causes we have not witnessed, such as a knocking at the door caused by someone on the other side of the (opaque) door, whom we do not otherwise perceive as s/he knocks.

These difficulties required Hume to distinguish between the existence of objects and the existence of perceptions, despite the (alleged) fact that this distinction ‘has no primary recommendation either to reason or the imagination’ (*T* 1.4.2.47). Nevertheless, this distinction is required by

. . . reflection on *general rules* [which] keeps us from augmenting our belief upon every increase in the force and vivacity of our ideas. . . .
 ’Tis thus the understanding corrects the appearances of the senses, and makes us imagine, that an object at twenty foot distance seems even to the eye as large as one of the same dimensions at ten. (*T* 1.3.10.12).

In brief, the general concept and principle of causality is used in generating and correcting our experiences of particular causal relations. The problem is that on purely statistical grounds, as Hume recognises, we much more often experience either a (putative) cause or a (putative) effect in isolation, but not both in relation. Each time we witness only one but not both of a (putative) cause-effect pair, this would (by customary empiricist habituation) weaken any belief in that putative cause-effect relation. This problem in data collection and consequent habit formation is so pervasive we would never be prompted to suppose that each event has some cause(s). Consequently, on Hume’s empiricist account of concept acquisition by association, we never should develop, acquire, define, or use the general concept of cause at all, not even Hume’s bare idea of ‘cause’ as 1:1 correlation of paired event types.

This is a prime instance of Hume’s acumen and allegiance to common sense overriding the absurdities of his own abstruse philosophical reasoning. He believes as much as the vulgar in persisting physical objects; yet when he cannot justify this belief by means of his principles, he distorts (or supplements) his principles to fit. To his credit, Kant distinguishes the two principles of causality and recognises that the real problem is not one of correcting our experiences of causal relations, but rather is one Hume never imagined: the problem of distinguishing events and objects within the uniformly successive apprehension (sensory intake) of experience.

This issue regarding the general concept of causality is not isolated; it is fundamental: Hume’s problem with personal identity is matched by

problems with the identity of any physical object and its very concept, and with the concepts of ‘space’, ‘spaces’, ‘time’, ‘times’ and ‘word’ – in distinction to *flatus vocii* or mere noisy utterances. All of these key concepts, their acquisition and their use Hume can only assign to our ‘imagination’, but of our imagination Hume can provide no specifically *empiricist* account; that account is exhausted by his inventory of sensory impressions and ideas, the copy principle and the three (purported) laws of psychological association. Unlike his followers, in the *Treatise* Hume identifies why and how those empiricist principles are insufficient (Westphal 2013a, *cf.* Turnbull 1959).

To prove (*e.g.*) that the concept of causality is not only *a priori*, but to give some definite sense for its legitimate cognitive use and to show that it is a condition for the possibility of unified self-conscious human experience, is a transcendental enterprise which requires the Transcendental Analytic and culminates in the Analogies of Experience. Understanding how so requires considering what Kant calls perceptual syntheses, which are far more basic than Hume’s purported ‘customary associations’ of sensory impressions or ideas; they are known today in neuro-physiology of perception as ‘the’ binding problem(s).

22. Sensory Binding Problems – *i.e.*: Forms of Perceptual Synthesis

Amongst the host of problems now called ‘the’ binding problem are these issues regarding sensory-perceptual synthesis, attention and judgment:

1. Amongst all concurrent sensations, how are any specific sensations distinguished and grouped *as* sensations of *any one* particular?
2. Amongst all successive sensations, how are any specific sensations distinguished and grouped *as* sensations of *that same* particular?
3. Amongst all concurrently perceived sensible qualities or features, how are any specific qualities or features distinguished, grouped and identified *as* qualities or features of *any one* particular?
4. Amongst all successive perceived sensible qualities or features, how are any specific qualities or features distinguished, grouped and identified *as* qualities or features of *that same* particular?

These issues arise because sensations do not, as it were, bind themselves together to form percepts, nor do percepts bind themselves together to form perceptual episodes. These issues arise within each sensory mode, and they arise across our sensory modes. They arise sub-personally at a (merely) sensory level, so that we may be percipient of our surroundings. They also arise at the apperceptive level of our noticing, recognising or

identifying individuals, events and their features we perceive within our surroundings.

These points about sensory-perceptual integration hold independently of Hume's (official) sensory atomism, and they hold without the error of regarding sensations as themselves *objects* of our self-conscious awareness, which typically they are not. Kant is thoroughly non- and anti-Cartesian in these, as in many other regards (below, §§31–34): He recognises that our explicitly self-conscious experience is only possible for us on the basis of a rich array of sub-personal cognitive processing, which Kant assigns to the 'transcendental power of imagination', including his account of three-fold perceptual synthesis (B103–5, A97–104); though he omitted most of that account in the second edition, he did not rescind the account (*KTPR* §§22, 23). Kant examines issues of 'origins', 'sources' or 'processes' involved in various aspects of human cognition, though always in order properly to pose issues of their cognitive content and validity, *i.e.*: accuracy, veracity or justification, or (in sum) their 'objective validity'. Kant distinguishes issues of process from those of validity by distinguishing his 'subjective' from his 'objective' deduction (A $xviii$). His first readers (and not only they) were not so subtle and understandably were confused by Kant's complex text.

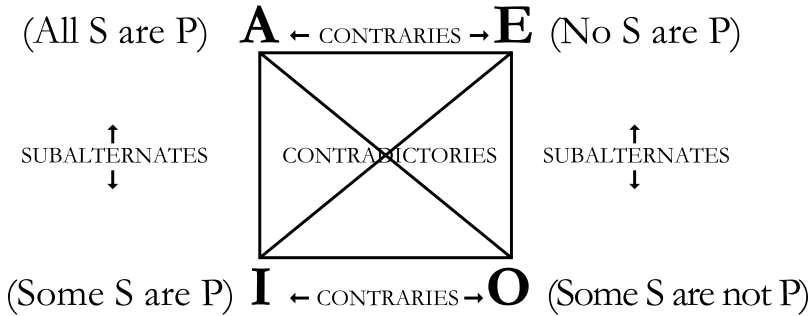
The key point is that these binding problems pose the question, neglected by Hume but pursued by Kant: How can we distinguish persisting individuals and current events within our surroundings amidst the continual influx of new sensory stimulation(s)? Kant's answer begins at the opposite pole, with his clue to our most fundamental concepts, the categories, rooted in our most basic formal aspects of judging. These most basic forms of judging and classifying must suffice to guide sufficiently accurate and reliable sensory integration so that we can become aware of anything so much as appearing to occur before, during or after anything else appears to occur.

23. Aristotle's Logic: Complete and Ever so Useful

For good reason, we now know, Kant regarded Aristotle's logic as profoundly important, not only for logic, but also for understanding and assessing cognitive judgments. The set of logical oppositions represented in the Square of Opposition (including conversion) suffices to specify the logical use of 'none', 'some', 'all', 'not'; affirmation, negation, disjunction, conjunction; and for hypothetical, disjunctive and categorical syllogisms. Using these logical constants and quantifiers, together with pairs of sentences or propositions, it is easy to generate Aristotle's paradigmatic syllogisms, including both *modus ponens ponendo* and *modus tollens tolendo*, *i.e.*, disjunctive syllogism plus negation elimination (Patzig 1969; Kneale and Kneale 1971, 72–3; Parsons 2017). The validity of conversion of terms is also a direct corollary of the logical relations represented by this square. Taken together, Aristotle's syllogistic logic is in the technical sense complete, because every valid argument which can be expressed in his logical

system can be deduced within his system of deduction, thus ‘every semantically valid argument is deducible’ (Corcoran 1974).²

23.1. *The Square of Categorical Oppositions*



23.2. *Cognitive Use: Taxa and Classification*

Aristotle’s logic has been rehabilitated by logicians, though it is a very general and not an especially ‘strong’ logic. Epistemologically its very generality is crucial, also because it suffices to formulate genus/species reasoning and classification, which are fundamental to human experience, perception and empirical knowledge (both commonsense and scientific). Kant rightly regarded Aristotle’s logic as fully ‘general logic’ (A53–4/B77–8). The additional ‘strength’ of other formal systems of interest to technical logicians is all gained by additional semantic or existence postulates (or both), all of which are *non*-formal. All such ‘stronger’ logistic systems are *less* general; they are specific logics designed for specific domains, such as Frege’s specifically *mathematical* logic (Wolff 2009b). It is important yet unsurprising that Aristotle’s logic comports well with contemporary ‘mental files’ or ‘mental models’ approaches in cognitive sciences (Lopez-Astorga 2014, 2016, 2017).

24. Formal Aspects of Judging

With great acuity, Michael Wolff (2009b, 2017) has identified, reconstructed and corroborated Kant’s grounds for holding that his table of 12 formal, functional aspects of judgment is complete, and that Kant is

2. A modern diagram of the traditional Aristotelian square of opposition is presented in Parsons (2017), §1; a mediaeval diagram in Reisch (1504), 2.3.5 (1535, 153); Frege (1879) derives and displays it in “Begriffsschrift”, §12. It can be presented perspicuously using Venn diagrams. This diagram follows Groarke (n.d.), by kind permission.

correct that this basic Aristotelian logic is both fundamental and general. These formal aspects typically work together in any actual judgment. As in Kant's example, 'This body is metal' (A69/B94), sensory perceptions are subsumed under the concept 'body' as designating *this* perceived particular, now made subject of the predicative judgment that it is metal. Once identified as a metal body, one may infer other characteristics it has, drawing on one's conceptual repertoire of metallurgy (however common-sense or technical) and more generally of bodies, such as their divisibility, and in the case of many metals, their malleability, their conductivity (of heat, electricity or sound) or their susceptibility to oxidation (rust) or other forms of corrosion. Kant's 'qualitative' use of a concept in judging is non-predicative and referred directly to the perceived particular(s), identifying it (or them) as subject(s) of one's judgment. His 'quantitative' use of a concept is predicative, ascribing some feature *to* that (or to those) particular(s) one has identified, indicated and designated by the first (mediating) use of a concept (as designating that or those particular(s) which one subjects to judgment). Kant's 'relative' or relational use of a concept in judgment is only mediately related to the object(s) judged, but is non-predicative; it is cognitively significant insofar as it affords further inferences (subsumptions) regarding that (or those) particular(s), in regard to the feature(s) ascribed to them using the predicate concept of one's judgment. Kant's 'modality' pervades each of these aspects of judging, regarding both how one ascribes features to, or denies them of, those particulars one judges, and one's use of evidence or one's confidence in those ascriptions. (Their accuracy or justifiedness are further issues not directly relevant to these formal aspects of judging; these 'modal' features of judgment are distinct to causal modality; *cf.* below, §§37–40.) Kant does not treat negation truth-functionally, which affords him a distinction between denials of predications to some particulars *within* some sphere or range of relevant, contrasting features; it makes sense to say of some bodies (and some fluids) that they are colourless rather coloured in one or another way. It is quite a *cognitively* distinct judgment (A71–3/B96–8) to deny that numbers can be coloured *or* colourless (an 'infinite' negative judgment), whereas numerals may be.³ However dispensable singular or infinite judgments may be to syllogistic logic, they are crucial to cognition, and so to epistemology. With regard to quantity, judgmental use of a concept may be universal, particular (some) or singular (individual);

3. In English, the mathematical connotations of 'infinite' are automatic and irresistible. It may help to recall the German counterpart, "*un-endlich*", or: 'non-specified' (non-determined, non-restricted, non-qualified), and read it within the context of Kant's account of formal aspects of judging as exclusionary: an 'infinite' judgment is to this effect: 'x is not at all specified in that kind of regard', or 'x cannot at all be specified in that kind of regard', where any relevant 'kind of regard' concerns a range of mutually contrasting features or characteristics; *e.g.* 'any vacuum is inaudible'.

with regard to quality, judgmental use of a concept may be affirmative, negative or infinite (*i.e.*, non-specified, undetermined); with regard to relation, judgmental use of concepts *or* (sub-)judgments may be categorical, hypothetical or disjunctive; with regard to modality, judgmental use of concepts may be problematic (tentative), assertoric or apodictic. These remarks are merely summary; Kant's evidence for these theses is intricate and requires the care Wolff devotes to it. My sole concern here is to use these brief indications to suggest, in the next section, how Kant can use these clues about formal aspects of judging to devise a counterpart table of fundamental concepts (*Grundbegriffe*), the categories.

25 From Aspects of Judging to Judging Particulars: 12 Categorical Concepts, Plus Two: The Concepts of 'Space' and 'Time'

Kant's advance from his 12 of aspects of judging to his 12 of categories is expressly a step away from general logic to a less general or special logic, which he calls 'transcendental logic'. It concerns the kinds of judgment, including classification, differentiation and conditionalisation, required to identify, distinguish, track and classify individuals perceived in our surroundings. To do so requires not only the 12 categories, but also the two key concepts from the Transcendental Aesthetic, the *a priori* concepts 'space' and 'time', use of which is required to identify any region of space and any period of time in which various individuals are perceived, how they are arranged, whether or how they change (either qualitatively or by moving), and quite literally how and where we stand with regard to them, when- and wherever we do so. Kant's strategy is to begin with formal functions exercised in judging, to consider how these functions indicate our most fundamental concepts by which we can characterise, classify and individuate anything we might sense whatsoever. Kant's entire 'Analytic of Concepts' and 'Analytic of Principles' are devoted to gradually, carefully *specifying* our most basic, general concepts so as to be *able* to 'realise' them in Tetens's sense by identifying some actual spatio-temporal, perceptible, causally active, interacting particulars (of whatever kind or scale). Kant's first step, to identify the categories, considers how those 12 formal functions of judging can be specified to identify the most general concepts which *can be* in principle brought to bear upon any on-going, incoming spatio-temporal manifold of sensory intake, which always and by default fills our sensory field, so to speak, edge to edge (A77–8/B103). The categories Kant identifies must provide for solutions to the sensory binding problems noted above (§22). The most direct role for the categories in this regard is to guide or structure various forms of sub-personal sensory synthesis by which alone perception is humanly possible (A78–9/B104). Kant contends that the very same functions which integrate or unify representations (including concepts

and logical relations) within judgments, also function to integrate or unify representations within any empirical intuition (A78–9/B104–5). An empirical intuition integrates some plurality of sensations and contributes to localising their source within our (in principle, perceptible) surroundings. Likewise, a plurality of empirical intuitions are integrated into any one momentary *percept* or image (*Bild*, A120–1) of any one particular in our environs. And yet again, some plurality of percepts are integrated through some period of time and in regard to some region of space to afford any one perceptual episode by which we perceive any one individual, discriminating it from its surroundings (which are also our own surroundings) and distinguishing *it* from our perceptual-motor *perceiving* of it. These syntheses or integrative functions not only identify some one particular, they must differentiate that particular from others. This is part of why disjunctive judgments, including those which are ‘infinite’ (or: non-specified) in form, have important *cognitive* roles: perceptual judgments are *discriminatory*, distinguishing one particular from others, and distinguishing any of its manifest, observed changes from *causally* possible alternatives to those manifest changes. (Kant’s cognitive architecture is diagrammed in §43.)⁴

Kant does not think the categories taken in their full generality suffice for these specific cognitive-perceptual functions. His initial claim is only that the same logical functions in judgment, when taken in connection with an otherwise unspecified, incoming sensory manifold, suffice to identify our most basic concepts, which likewise fall into four groups of three categories each. The quantitative categories are unity, plurality and totality; the qualitative categories are reality, negation and limitation (the counterpart to infinite judgments: delimitation by exclusion from a range or class of characteristics); the relational categories are inherence and subsistence (or persistence, we might say), cause and effect, and ‘community’ or causal interaction; the modal categories are (im)possibility, (non-)existence and necessity/contingency (A80/B106).

Having provisionally identified our most fundamental concepts, the categories, and suggested that they can function by guiding (sufficiently) effective, reliable sensory-perceptual syntheses required to solve the binding problems (above, §22), Kant embarks on his Transcendental Deduction of these pure categories of the understanding, which aims to show that these concepts can, and can only, play the cognitive roles he here anticipates. This is not to claim that these cognitive roles are fully fledged, *i.e.* (quite literally): fully specified; they are not! Central to Kant’s aim in

4. Kant’s account of these sensory-perceptual and judgmental functions are reconstructed independently of Kant’s texts very well by Sellars (IKTE), yet Kant’s own account is significantly richer; see below (§59.2).

the Transcendental Deduction is that our most basic, *a priori* concepts may be used to *think* whatever we like, so long as we avoid contradiction (Bxxvi, n., cf. A220/B268), but they can be used to *know* only insofar as we bring them to bear upon identifying and properly (if approximately) characterising particular individuals. Setting aside pure mathematics, we human beings are only able to identify and characterise specific, particular *individuals* by localising them within space and time within our surroundings. Kant further argues that, as human beings, we are only able to be aware of ourselves *as* being aware of anything so much as *appearing* to us to occur before, during or after anything else appears to us to occur, insofar as we identify and individuate, at least approximately, some individual(s) we perceive within our surroundings. Only particulars substantial enough for us to be *able* to identify, individuate and track them through some identifiable period of time within some identifiable region of space are such that we *can* at all distinguish *those* particulars from *our* sensory-perceptually experiencing them, and do so *as* we perceptually experience them. This alone enables us to distinguish between our own bodily-perceptual comportment and the particulars surrounding us which we perceive. These philosophically and exegetically strong claims anticipate much to be examined throughout this PART 2.

Before continuing, note that Kant's 'deductions' of the categories are in this regard complementary (B159): his 'metaphysical' deduction identifies the categories and their four main groups ('titles') by coördinating them with his Table of Judgments. His 'transcendental' deduction identifies the fundamental, *i.e.* categorial status of these concepts by identifying how they form the necessary, sufficient minimum (and non-redundant) concepts required to integrate the merely logical self-referential thought, 'I think' with any object-regarding thought about any particular which can be sensorily presented to any self-conscious human being (B165). Kant expressly limits his transcendental deduction to proving *that* the categories are in this minimal regard necessary and sufficient (Westphal, 2020d). *How* they suffice is expressly the topic of Kant's examination of the transcendental power of judgment in the 'Analytic of Principles' (B167). Before turning to Kant's examination of these principles, consider Kant's incisive account of singular, specifically *cognitive* reference.

26. Kant's Semantics of Singular, Specifically *Cognitive* Reference

26.1. *Knowing Particulars*

Recall (from §21.1) Kant's clue from Tetens (1777), that demonstrating that a concept has any legitimate cognitive use requires 'realising'

that concept by indicating at least one actual, relevant instance of it. In exactly this regard Kant states in the *Critique of Judgment*:

. . . all the categories, . . . can have no significance for theoretical cognition [*i.e.*, knowledge of particulars] at all if they are not applied to objects of possible experience. (*KdU* 5:484)

By ‘objects of possible experience’ Kant here means (at least) that we properly use the categories in connection with objects we can experience. Kant expressly argues that our categories only have specifically *cognitive* significance (in addition to conceptual meaning, content or intension) insofar as they are referred to particulars, which requires of us human beings that our sensory intake presents particulars to us.⁵ This cognitive significance accrues to the categories only insofar as they are ‘realised’ in and through human sensibility, which thus also *restricts* their cognitive significance to the spatio-temporal domain of particulars which alone we can sense (A147/B187). In exactly this regard, Kant anticipates Gareth Evans’s conclusion regarding predication, not as a grammatical form, but as a proto-cognitive *act* of ascribing characteristics *to* some (putative) individual(s), or to some aspect of one. *Contra* Quine, Evans concludes that:

. . . the line tracing the area of [ascriptive] relevance delimits that area in relation to which one or the other, but not both, of a pair of contradictory predicates may be chosen. And that is what it is for a line to be a boundary, marking something off from other things. (Evans 1975, *CP* (1985), 36, *cf.* 34–7)

Evans’s point Kant makes at the end of the Transcendental Deduction (§26) by considering the example of coming to perceive a house we happen to intuit (sense) empirically:

If I thus *e.g.* apprehend the manifold of empirical intuition of a house and thus come to perceive it, this is based upon the *necessary unity* of

5. For simplicity, I speak here of ‘objects’; included are objects, events, processes or structures within space and time, of whatever kind and scale. Kant shrewdly leaves entirely open all these parameters in order to identify the minimum sufficient conditions for human perceptual discrimination of any such particular(s). For simplicity, I set aside Kant’s mathematics, *i.e.*, those objects of pure reason which we can identify by constructing them; this is not my topic in this book. Kant aims to show in the Transcendental Dialectic that other alleged objects of pure reason – the world as a whole, infinitely divisible matter, the soul as a single unitary particular, or the Almighty – cannot be identified uniquely by constructing them conceptually, nor by locating them spatio-temporally. Hence these alleged objects transcend human knowledge and experience *in principle*. These results can be fully justified without Kant’s transcendental idealism, by appeal solely to Kant’s Thesis of Singular Cognitive Reference (just below), which also has direct, important implications for the status of the major premiss of the debated about free will *vs.* determinism (below, §§74–83).

space and outward sensory intuition generally, and I draw, as it were, its form in accord with this synthetic unity of this manifold within space. Even this very same synthetic unity, however, if I abstract from the form of space, . . . is the synthesis of the homogenous in an intuition as such, *i.e.*, the category of *quantity*, with which that synthesis in apprehension (*i.e.*, the perception) must fully accord. (*KdrV* B162)

Kant thus argues (not only here) for what may be called his Thesis of Singular Cognitive Reference (my designation). It concerns the cognitive, and hence also the epistemological significance of identifying by locating those individuals to which we ascribe any features, by which alone we can know them and can claim to have knowledge of them.

Kant's Thesis distinguishes, in principle and in practice, between the classificatory content (intension) of concepts, principles, judgments, propositions, descriptions or sentences, and their further, specifically *cognitive* significance, as *candidates* for knowing, *i.e.*, as a judgment, claim or belief which may count as knowledge, used as a success term, which they can only have when Someone refers those concepts *to* particular(s) *S/he* has localised within space and time, regardless of the kind, scale or quantity of these deictically indicated, at least approximately localised, particulars (regardless of whether unaided sensory perception or observational instruments be involved). The phrase 'cognitive significance' is often used more broadly, to cover any logically consistent predicative proposition. Kant's point is that such a logically consistent thought is necessary, though *not* sufficient for specifically *cognitive* standing, as a candidate for anything *known* or *knowable*; this status requires that Someone *use* that predicative proposition *ascriptively* to ascribe characteristics or features *to* some localised particular(s) (*per* Teten's keen deictic point).

In this regard, Kant's distinction may be compared to that between sentence meaning and speaker's meaning, where speaker's meaning involves not only sentential meaning, but what a speaker says *about* some indicated, designated particular(s) in some specific context. Put otherwise, Kant denies that descriptions alone suffice for knowledge, because no description suffices to determine (*i.e.*, to specify) whether there is any such particular, many such, or only and exactly one such. A brief argument for this Thesis was presented above (§3), with references to detailed defence. What has become the pervasive 'logical orthodoxy' follows Quine following Russell's theory of descriptions, purporting that descriptive content or intension can suffice for actual designation of actual particulars. Kant treats (most) concepts as classifications, the content of which constitutes intension, where such intension provides only *possible* extension, *i.e.*, possible reference to individuals instantiating the relevant characteristics (features so classified). I propose using 'extension' (with an 's') modally, to indicate those features or instances which *would* properly be classified under some (descriptive, classificatory) concept,

and to reserve ‘extention’ (with a second ‘t’) for actual individuals or their actual features which are or can be properly classified under some (descriptive, classificatory) concept. Put in these terms, my key objection to Quine (Westphal 2015a) is that he sought to substitute extensions for extentions, an error adopted from Russell’s logical atomism and theory of descriptions. Deixis may be uninteresting to logicians, but it is crucial to any and all empirical knowledge, which involves much more than merely supplying ‘values’ for logical ‘variables’ – by stipulations which by design abstract from all cognitive and epistemological issues about whether or how we can identify any individuals, the names of which can serve as values for those logical variables. This is my reason for opposing common use of the phrase ‘cognitive significance’ where only descriptive intelligibility is involved, yet purported reference is presumed. However the semantics of meaning may ultimately be understood, the *epistemological* point required here is secured by the basic *cognitive* point, that for Someone to know something, S/he must localise that (or those) particulars to which (or to whom) S/he purports to ascribe any feature(s), so as (putatively) to *know* (cognise) it or them. Cognition is not secured by fortunate guesses in the form of mere descriptions which happen to have (had) some instance somewhere or other within nature or history. Cognition requires identifying by locating relevant particulars so as to be able to know them, or even to mistake them! This deictic point is central to Kant’s Transcendental Deduction and its central issue about what conditions must be satisfied so as to be able to make any sufficiently accurate attribution even to *claim* that something is such and so (B141–2, 168). Inan (2018, 2021) develops a sophisticated, nuanced account of truth in terms of reference. My Kantian point is that truth pertaining to knowledge (and so to epistemology) requires deictic, demonstrative reference to relevant particulars, which only thus can be (so much as) candidate objects of knowledge. Epistemology cannot dispense with Carnap’s ‘descriptive semantics’, *i.e.*, pragmatic *use* of propositions in making cognitive judgments *in* suitable perceptual or experimental contexts *about* localised individuals (particulars).

For these reasons, semantic meaning is crucial to epistemology, but not at all sufficient. The distinctions marked by Kant’s Thesis are akin to those between sentence meaning, speaker’s meaning and a speaker’s claim about any indicated particular(s). Kant’s Thesis must not be confused with verificationist theories of meaning, which only require logically consistent propositions. I risk the potential ambiguity of the phrase ‘cognitive significance’, because it has become far too common to suppose that linguistic, semantic or speaker’s meaning suffice also for epistemology. Kant shows that is mistaken; just as Donnellan (1966) showed that definite descriptions, even if inaccurate, can be used either referentially or attributively. Likewise, Travis rightly stresses that definite descriptions can be used in two fundamentally different ways; one to articulate

the content of a thought or proposition, quite another is to articulate what Someone thought or said on a particular occasion and so in some particular context about some indicated particular individuals (or their features). The former use can prescind from any particulars putatively mentioned in that description; the latter must refer to that context and to *those* particular about which Sam said or thought whatever S/he did say or think.

26.2. *Kant's Thesis of Singular Cognitive Reference*

Kant's Thesis may be stated in terms of concepts, propositions, judgments or terms. The key point concerns classificatory content (intension) which may be parsed or explicated in descriptions, and the further requirements involved in actually classifying or identifying any extant, putative instance so described; and doing so accurately, warrantedly (justifiedly) and thus cognisantly – knowingly. Stated in terms of propositions, this is KANT'S THESIS OF SINGULAR COGNITIVE REFERENCE:

Whatever may be their descriptive content or intension, in non-formal, substantive domains, no proposition has specifically *cognitive significance* unless and until it is incorporated into a candidate cognitive judgment which is referred to some actual particular(s) localised (at least putatively) by a cognisant Subject (*S*) within space and time.

Cognitive significance, so defined, is required for cognitive status (even as merely putative knowledge) in any non-formal, substantive domain. Kant's Thesis thus requires not only that a proposition be meaningful (logically consistent intension); it requires that Someone *use* that proposition *in reference to* some (putative) localised, indicated particular(s), of whatever kind or scale.

26.3. *The Implications of Kant's Thesis for Knowledge and Epistemology*

Kant's Thesis of Singular Cognitive Reference, together with the three basic aspects of knowledge, *i.e.*, belief, truth and justification, justify these cognitive (hence also epistemological) distinctions between:

1. *Thinking* some specific thought, or entertaining some definite proposition, statement or belief.
2. *Ascribing* what one thinks, believes or judges *to* some localised, indicated (ostended) particular(s).
3. *Ascribing accurately* or *truly* what one thinks, believes or judges *to* those indicated particular(s).

4. *Justifiedly* ascribing accurately or truly what one thinks, believes or judges to those indicated particular(s) (where the relevant justification is cognitive).
5. Ascribing accurately or truly what one thinks, believes or judges to those indicated particular(s) with *sufficient* cognitive justification to constitute knowledge.

Each of these (proto-)cognitive activities or achievements allows significant latitude for specification to domain-specific kinds of inquiries, evidence, judgments, explanations or precision. Only the last (5.) counts as knowledge; (4.) may include a broad range of reasonable belief or plausible conjecture. Mere logical possibilities, however, only meet the first requirement (1.). Hence they have neither any truth-value nor any justificatory status. Hence they lack altogether even *proto*-cognitive standing. Thus they do not and cannot serve to ‘defeat’ or to undermine the justification or the accuracy of any otherwise adequately justified, sufficiently accurate judgment. Justificatory infallibilism is thus strictly and in principle *irrelevant* to the non-formal domain of empirical knowledge (and also to the domain of morals) – Tempier (1277) and his legion of infallibilist adherents notwithstanding!

If a sentence is logically consistent (and assertoric) it may be used to describe some extant particular(s). However, whether there be any such particular in principle cannot be determined (*i.e.*, specified) merely by descriptive content: there may be no such particulars, many such or perhaps by sheer contingent luck only one. In addition to sentential meaning, truth, error or approximation each requires *reference* to at least one relevant, extant particular. Such reference is not specified or secured by sentence meaning (intension) alone. (This should have been learnt from Frege, if not before; the topic of deictic reference traces back to Stoic logic, at least.) Knowledge or belief requires more than logically coherent description or sentence meaning, much more than merely reciting sentences which happen to be true. In contrast to sheer information, which may be stored in linguistic, diagrammatic or other graphic forms, knowledge or belief are enjoyed by human beings, Subjects who have information at their cognisant command, not merely because they understand the literal, descriptive or graphic meaning of information, but because they also understand to what particulars, and to which kinds of particulars, that information pertains, how those particulars can be identified and localised, and who has done or is able to do so. Much knowledge may be, and indeed is, second- or third-hand, but such social mediation only suffices for *knowledge* or reasonable belief if the cognisant recipient knows how to track down the relevant deictic references to particulars, or at least, how to find out who can and does refer deictically to the relevant particulars, and (at least approximately) how they do so. Knowledge and belief require counterparts to speaker meaning, consisting in the use of a meaningful (assertoric, descriptive) sentence to make a statement, *i.e.*

a *claim* about some particular(s) on some occasion in some context. To have belief or knowledge, Sam must make (what amounts to) a statement by referring the relevant description *to* some (presumptively) localised particular(s) so as to make an ascription or attribution to that or to those particular(s). Only at this stage can or do issues of (cognisable) truth, falsehood, accuracy or approximation arise. And only consequently can or do issues regarding the kind(s) or extent of cognitive justification arise.

26.4. Equivocating About ‘Definite Descriptions’

None of this should or would require such detailed explication and reiteration, but for how many have been misled by mere intensions and their advocates, above all, by Russell and Quine, to mistake grammatically definite descriptions for singular referring devices. ‘The man in the iron mask’ (Russell 1911, 112, 113, 116; *CP* 6:151, 153), infamously jailed by Louis XIV for 34 years, may have been a series of successive prisoners, as interchangeable as members of the entertainment troupe, Blue Man Group;⁶ ‘the longest lived of men’ (Russell 1911, 116/*CP* 6:153) may turn out to be two or more centenarians who by happenstance lived equally long lives. ‘The shortest spy’ (Quine 1995, 97) may be a description satisfied by twins or triplets of the same stature and profession. About this grammatically definite description, Quine states: ‘Just grant Ralph the plausible hypothesis that there are no two shortest, and you have him fulfilling (1)’, *viz.*, that someone named Ralph believes a particular person is a spy, ‘without harboring any information less trivial than in (3)’ (1995, 97), *viz.*, that Ralph believes there is some particular person who is a spy. Knowledge requires much more than plausible hypothesis, and far more than its merely being granted! Right there Quine swept all the cognitive and all the epistemological issues off the table, and off too much recent philosophical agenda. *Caveat emptor!*

Any ‘plausible hypothesis’ requires investigation and (at least some) corroboration to become reasonable belief. Russell (1911), too, assumed such plausible hypotheses, but failed to note that, on the basis of his accounts of ‘knowledge by description’ and of ‘knowledge by acquaintance’ he cannot know (neither can he learn!) that any of those singular assumptions is true, accurate or justified. Knowledge must be acquired, not ‘granted’! Caution about any supposed links between grammatically definite and referentially singular (deictic use of) descriptions should have been instilled no later than Frege’s (1892a, 28/1960, 58) sample description, ‘The celestial body most distant from the Earth’.⁷ Nevertheless, the

6. The performers in this troupe are all men, dressed in black, with clean-shaven heads and opaque blue stage paint covering all their otherwise exposed heads and hands. Hence they are easily interchanged as departure, illness or injury may require.
7. Quine’s notion of ‘ontological commitment’ – which is only a feature of theories – is irrelevant to epistemology (Westphal 2015a); neither are his reasons for eschewing singular statements valid.

recent exchange between Unger (2014) and Williamson (2015) about whether contemporary analytic metaphysics is no more than ‘empty ideas’ neglects entirely this basic deictic point required for specifically *cognitive* reference to particulars. David Lewis’s ‘possible worlds’ are mere fragmentary descriptions of logical possibilities; intensions only, no matter how good they may otherwise be. To reply that, because possible worlds are not concrete particulars, of course they cannot be located within space and time, is correct, but misses the key point: if ‘possible worlds’ exist (in whatever way) and are abstract particulars, not merely conceptions, intensions or fragmentary descriptions, how exactly is any singular reference to any such purported ‘world’, or to any of its purported denizens, obtained? And how is such reference humanly possible? Until these two questions are answered cogently, possible worlds as metaphysical beings are subject to Kant’s criticism of pre-Critical metaphysics.

27. Kant’s Constructive Strategy in the *Critique of Pure Reason*

27.1. *Kant’s Methodological Constructivism*

Kant’s method is expressly constructivist (A707/B735; O’Neill 1992). Constructivist *method* is a method for identifying and justifying concepts or principles; it is consistent with realism about particulars within the domain(s) of those concepts or principles.

27.2. *The Constructivist Strategy*

The constructivist strategy has four steps. Within some specified domain,

1. Identify a preferred domain of basic elements;
2. Identify and sort relevant, prevalent elements within this domain;
3. Use the most salient and prevalent such elements to construct satisfactory principles or accounts of the initial domain, by using
4. Preferred principles of construction.

In §28 I exhibit how Kant’s *Critique of Pure Reason* uses exactly this constructivist strategy. To prepare, I highlight some main points from preceding sections about Kant’s basic elements and problems to be addressed and resolved. These pertain to how Kant posed and addressed fundamental cognitive/epistemological questions concerning how we can identify any domain whatsoever, its members and relevant principles.

27.3. *The Two-Fold Use of the Categories: Sub-Personal Perceptual Synthesis, Explicit Judgments*

Kant expressly indicates a dual, ‘two-fold use’ of the Categories, first in ‘figurative synthesis’, second in explicit cognitive judgments:

The same function which provides unity to diverse representations in a judgment, also provides the mere synthesis of diverse representations in an intuition. Thus the same understanding, indeed through the same action, by which it in concepts through analytical unity produces the logical form of a judgment, also provides through synthetic unity of the manifold in intuition as such within its representations a transcendental content, according to which they are called pure concepts of the understanding, which pertain *a priori* to objects, which cannot be achieved by general logic. (*KdrV* A79/B104–5; underscoring added, as also just below – *KRW*)

. . . the POWER OF IMAGINATION is a capacity to determine sensibility *a priori*, and its synthesis of intuitions according to the categories must be the transcendental synthesis of imagination, which is an effect of the understanding upon sensibility and [is] its first application (and as such the ground of all others) to objects of those intuitions possible for us. As figurative, this [imagination] is distinct to the intellectual synthesis merely by understanding, altogether without imagination. Insofar as the imagination is spontaneity, occasionally I call it the productive imagination and thus distinguish it from the reproductive [imagination], the synthesis by which is subject only to empirical laws, namely, those of association (*KdrV* B152)

. . . the synthesis of apprehension, which is empirical, must necessarily accord with the synthesis of apperception, which is intellectual and is contained entirely *a priori* in the category. It is one and the same spontaneity, which there under the name of IMAGINATION, here [under the name] of understanding, introduces connection within the manifold of intuition. (*KdrV* B162*n.*)

27.4. *Kant’s Lead Question, Re-Stated*

- How is it possible, what formal and material conditions must be satisfied, such that we finite cognisant human beings can integrate sensory intake over time and through space so as to distinguish between whatever we may perceive, experience or know within our environs from our perceiving, experiencing or knowing it (or them)? (Guyer 1989)⁸

8. Here I restate Guyer’s point, adding the parallel point regarding space.

27.5. *Kant's Most Basic Inventory*

1. Two forms of sensory receptivity: We *homo sapiens sapiens* can only respond to spatial and temporal stimuli.
2. Two *a priori* concepts for locatability and discriminability: the concepts of 'space' and 'time';
3. 12 formal aspects of judging: The Table of Judgments. (Wolff 2009b, 2017)
4. The logical subject of any explicit judging: the 'I think' which can (and must be able to) accompany any of my self-conscious states or episodes.
5. An unspecified manifold sensory intake.

27.6. *Kant's Constructive Epistemological (Transcendental) Question*

- How can those abstract formal aspects of our cognitive capacities be so specified as to make possible for us any self-conscious experiential episode in which anything appears to us to occur before, during or after anything else appears to occur?

27.7. *Answering That Question Requires Addressing These Five Issues*

1. Within the ever-successive, continuing intake of current sensory stimulation (sensory manifold), how can we discriminate which particulars (distinct to ourselves) are located where and when, and what changes they undergo?
2. We can only be *self*-consciously (apperceptively) aware of ourselves *as* being aware of some events merely appearing to us to occur before, during or after other apparent events, by distinguishing from ourselves some particulars in our surroundings, so as to identify ourselves *as* perceptually aware *of* those particulars.
3. We can only perceive our surroundings if we can and do discriminate those changes within the content of our experience which are due to our own perceptual-motor behaviour from those changes within the content of our experience which are due to relatively stable perceptible particulars and *their* locations, behaviour and (causal) interactions.

4. Each of these cognitive achievements requires that we can and do (sub-personally) solve the perceptual binding problems (§22) = perceptual synthesis, effected by productive transcendental imagination.
5. Each of these cognitive achievements also requires that we can and do satisfy the requirements for singular cognitive reference, and make reliably (if implicitly or approximately) the kinds of cognitive distinctions involved in Kant's Thesis of Singular Cognitive Reference (§26).

How extensive, precise or integrated our knowledge may be is entirely an empirical matter. The central synthetic principle Kant justifies *a priori* is this: We human beings can only be aware of ourselves *as* being aware of some events appearing to us to occur before, during or after other apparent events, *if* in fact we perceive and identify at least some spatio-temporal, causally structured particulars distinct to ourselves within our surroundings. (This is to restate the Thesis of Kant's 'Refutation of Idealism', B275.)

Kant's second point (2.) is that we can only apperceive ourselves *as* being aware of so little as some apparent changes appearing to occur before, during or after other apparent changes. This is one way to state the first premiss of Kant's 'Refutation of Idealism' (B275). This is also the minimum necessary interpretation of Kant's claim that the *analytic* unity of apperception is only humanly possible on the basis of our achieving at least some humanly recognisable *synthetic* unity of apperception, which itself requires our achieving at least some humanly recognisable synthetic unity of *perception* of particulars other than ourselves. I shall not repeat this proviso in each case to which it pertains. Instead, I shall speak of 'apperception' rather than of 'self-consciousness', which Anglophone readers too easily assimilate to Cartesian self-transparency. Although Kant occasionally uses the term 'apperception' also for 'pure apperception', I believe in such instances, too, any analytically unitary pure apperception is humanly possible, Kant argues, only on the basis of achieving (or maintaining) some synthetic unity of apperception, which occurs only in and through some veridical episode(s) of sensory perception of our surroundings. Why and how so is my topic throughout this PART 2.

28. The Structure of Kant's *Critique of Pure Reason*

The following remarks on the structure of Kant's *Critique of Pure Reason* should be considered together with the chart below, 'Kant's Inventory of Basic Formal Features of our Cognitive Capacities' (§30).⁹ The chart

9. In this connection readers may also wish to consider the outline formatting of Kant's Table of Contents to *KdV* in Pluhar's (1996, *viii–xvi*) translation.

focusses on Kant's 'Analytic of Concepts' and 'Analytic of Principles'; it assumes that we are sensitive (receptive) only to spatio-temporal sensory stimulation, and that we have two *a priori* concepts, 'time' and 'space', which we can arbitrarily delimit (specify, determine) so as to identify and distinguish various regions of space and periods of time, so as to identify various particulars we (may) experience and those occasions on which and regions in which we (may) experience them.

The Chart (§30) begins with Kant's 12 formal functions exercised in judging. These functions, considered in connection with Someone's otherwise unspecified spatio-temporal manifold of continuing sensory intake, enables Kant to identify our most fundamental concepts, the Categories, listed in the second column from the left. Kant's 'Schematism' of the Categories is the first chapter of his 'Analytic of Principles'. It only considers what further specification (intension) the Categories require in order to be brought to bear upon, and thus to be able to be referred to, temporal phenomena. Kant noted in his margin that the 'Schematism' also requires considering the further specification the Categories require in order to be brought to bear upon, and thus to be able to be referred to, spatial phenomena. Kant concludes the B-edition Deduction with an example of perceiving a house, including identifying its spatial form and size using the Category of quantity (quoted above, §26.1). Kant's treatment of these schemata is, by design, highly abstract. His chapter only concerns what further semantic specificity (intension) must be supplied to the Categories so that they can in principle *be* referred to spatial and to temporal phenomena as such. Still further semantic specification (classificatory specificity, intension) must be supplied to the Categories so as to be able to refer them to any *particular* spatio-temporal phenomena. So far as this semantic specificity can be identified by philosophical (transcendental) reflection, Kant does so in 'The Principles of the Understanding'. These are listed in the right-hand column of §30. Kant's 'Axioms of Intuition' directly recall his example of perceiving a house, which requires that we can and do identify and discriminate particular individuals within specifiable, specified regions of space during specifiable, specified periods of time. This holds both regarding the spatio-temporal region occupied by any particular (of whatever kind or scale), and the spatio-temporal region which provides and enables us to identify the occasion on and the context within which we identify those particulars. The 'Anticipations of Perception' concern a constraint upon our perceptual capacities, that any particular we can experience, perceive or identify must exhibit some perceptible features with some sufficient intensity that we *can* respond to it by sensing it at all. Kant fully expects that particulars satisfy such conditions for their human perceptibility due to their material constitution, by which the causal interactions which undergird and enable our sensory-perceptual processed can occur and be registered by us (*cf.*

Edwards 2000). Those two sets of principles Kant calls ‘mathematical’, in contrast to the ‘dynamic’ principles: the ‘Analogies of Experience’ and the ‘Postulates of Empirical Thinking’.

The ‘Analogies of Experience’ are indeed crucial to Kant’s whole Critical epistemology, for they concern three fundamental causal principles, the use of which is necessary for us to identify and discriminate relatively stable physical particulars, their locations, our location with respect to them, the various changes they undergo or produce (events), as well as the various changes we make through our own bodily-perceptual comportment. One crucial point about these three principles was identified by Guyer (1987; *cf.* below, §§33.6, 38–40, 44–46, 55–60), that we can only use these three principles *conjointly*, because causal judgments are *discriminatory*: We can only identify any particular persisting insofar as we can also identify that and how we alter our own position and attitude (literally) toward it, *and* insofar as we can identify *that* persisting particular through whatever spatial changes concurrently transpire, including distinguishing between merely local motions (rotations) from translational motions (changes of location), so that we can distinguish between those features of any particular which themselves persist, though they may pass from our view by various motions (relative rotations), and those of its features which may currently undergo change. Our capacity and our exercise of our capacity to discriminate between those changes within our sensory-perceptual experience which are due to what *is* in, and what *changes* in, our surroundings, from those changes within our sensory-perceptual experience which are due to our own bodily, perceptual-motor activity, require that there *are* perceptible particulars, events and processes which we can sense, perceive, identify and discriminate, however approximately. Yes, on the basis of his transcendental reflections upon the very possibility of apperceptive human experience, Kant was aware of what is now known (physiologically) as sensory reafference, by which an organism monitors its own bodily motion, so as to compensate for it, so as to be able to perceive its surroundings, rather than merely to register changing sensory stimulations (Brembs 2011). *Kant* stresses that it is our choice whether to view a house top to bottom or *vice-versa*, left to right or *vice-versa* (A192–3/B237–8), or whether to look first to the night horizon, then to the rising moon, then back to the horizon, or *vice versa* (B256–7). Kant likewise stresses that some changes occur, and are perceived to occur (if we pay attention), regardless of our own bodily comportment: No matter when or how frequently we look at it, or look away from it, the ship sails further in whatever direction it is headed (until the captain decides, or weather requires otherwise) (A192/B237); water freezes as ambient temperature drops, regardless of our mere perceptual-motor observation (B162–3); and similarly in other cases – such as the

porter arriving at Hume's door (in Paris), bearing him a letter from London, *via* the local post office, and thence *via* the avenues and walk-ways of the porter's route to Hume's apartment building, then up the stairs Hume too uses, though he witnesses none of these when he hears and unfailingly recognises the porter's knock at his door (*T* 1.4.2.20). Hume's empiricism cannot account for Hume's entirely commonsense, correct and unhesitating observations and judgments about his own immediate neighbourhood and abode.

Here I remark only briefly on Kant's 'Postulates of Empirical Thinking', mostly to stress that they are expressly *transcendental* principles (A219–20/B266–7), and so provide neither Kant's account of *causal* modalities, which are central to the Analogies of Experience, nor do they provide his full account of cognitive modalities, especially as regards cognitive justification.¹⁰ This is wise on Kant's part: As noted in connection with his Thesis of Singular Cognitive Reference (§26), each of the five distinct achievements there identified allows considerable latitude to tailor them to specific domains and kinds of inquiry; how and how best to do so is central to legal procedures, technical diagnostics, engineering, the various special sciences including all forms of natural history, and to any forms of inventory or cataloguing.

One core point throughout Kant's Transcendental Dialectic may be put briefly. 'Ideas of Reason' are concepts of totalities; they are each logically consistent, and synthetic, insofar as they are non-formal; consistent propositions formed with these concepts have logically consistent negations. Yet as (putative) totalities, we can 'realise' none of them in any referentially determinate (specific, deictic) way by ostending their purported, proper instance(s). Hence they can only be used to think, but not to *know*; they suffice for and afford only the first of the five proto-cognitive achievements indicated by Kant's Thesis of Singular Cognitive Reference (§26): thinking a logically consistent thought. Consider an important feature of Kant's referential, cognitive and epistemological development of Aristotelian syllogistic. For formal logic, the existence suppositions built into syllogistic logic are either irrelevant or a deficiency. However, for empirical cognition, and for epistemological theory of knowledge, those existence suppositions are important indicators of the referential and so the existential requirements of knowing *something*, anything, about some particular (of whatever kind or scale); localising that (or those) particular(s), so that one's belief, claim or judgment *has* any truth value

10. As Stang (2016, §7.4) notes, in the 'Postulates of Empirical Thinking in General' Kant distinguishes between those transcendental modalities of central concern in this chapter of the *Critique* and causal modalities involved in dynamic (causal) laws structuring events or processes through some period of time (A227–8/B280).

(or value as an approximation), and has such a value which Someone can ascertain and *assess*. In this connection alone, in this topical, *and* ostensive, referential connection: *Gegenstandsbeziehung*, do the cognitively and epistemologically indispensable issues of cognitive justification arise, and can they be assessed.

Here again Kant's non-truth functional treatment of negation is cognitively and epistemologically significant: By example in the Dialectic and expressly in the 'Discipline of Pure Reason' (A789–94/B817–22), Kant proscribes apagogic, indirect proof by disjunctive syllogism in any case in which we cannot localise the relevant, claimed individual(s) purportedly in dispute. 'Everything sleeps either restfully or fitfully'; not so: not green ideas, nor anything inorganic. 'Necessarily, the soul is either simple or compound'. So simple this issue is not: 'simple' and 'compound' are mutually exclusive, *but* to what aspects, features or individuals does either quasi-quantitative adjective pertain, and how so? Until we answer this question definitely by *realising* either concept (term) by localising at least one relevant individual instance (in the present case: a soul) we literally do not know what we are thinking, talking or arguing *about*. The contrast between 'simple' and 'compound' is equivocal: A particular may be neither 'compound' (composed of parts) nor 'simple', insofar as it is one, unitary, indivisible, and yet has a variety of aspects (not parts). This is the breaking point of Hume's account of abstract general ideas, of distinctions of reason and also of concept empiricism (Westphal 2013a). The logical law of bivalence holds *de dicto*, that is, with regard to statements or sayables: Only one of two logically contradictory statements can be true. The logical law of excluded middle holds *de re*: nothing, no *res*, can both have and lack a feature or characteristic at the same time and in the same respect. These principles, and their domains of use, must not be confused. Neither colour nor transparency pertain to numbers, though they do pertain to numerals (if we count black, white and shades of grey as 'colours'). Only with regard to *objects* of pure reason, Kant emphasises here again, does their purely conceptual specification suffice to *construct* their sole proper instances – within mathematics (A7115–9/B743–7). Without such construction *or* ostensive demonstration of, *i.e.*, deictic reference to, that uniquely specified *individual*, the concepts involved are mere thoughts, which may have no instances, several or perhaps by sheer luck and happenstance only one.¹¹ Until those concepts can be shown to be *referentially*, existentially non-empty in some specific, specifiable way, they are not even candidates for knowledge. In any such

11. Kant observes that a two-sided, rectilinear, planar enclosed figure is not a strictly *logical* impossibility, though we cannot know any such mere logical supposition (A220–1/B267–8). As for Quine's 'shortest spy', see above, §26.4.

case, such purported demonstrations or disputes are merely and quite literally *argumentæ ad ignorantiam*.¹²

Kant's own transcendental proofs regarding a series of specific formal and material (sensory) conditions, which must be satisfied if any of us is to achieve apperception, involve demonstrating that these conditions are necessary to any humanly possible apperceptive experience (A786–9/B814–7). Here I have only sought to present Kant's points of departure and constructive strategy for developing and assessing such proofs, though also to show how plausible they are by exhibiting how much more fundamental they are than those issues or strategies familiar from empiricism, rationalism or much of contemporary linguistic ('analytic') philosophy. The appeal to, and the search for, some sufficiently robust sense of 'broad logical necessity' has been inconclusive because the notion is too vague, or even self-contradictory: logical necessity holds within purely formal systems; the desired 'breadth' comes only with further, non-formal, hence substantive semantic and existence postulates, none of which can be defined, used, justified or assessed purely formally. The relevant alternative concept is 'synthetic necessary truth', but few analytic philosophers have been bold enough to take this concept seriously; two who did are Toulmin (1949) and Sellars (1978).¹³

29. A Brief Concluding Word

This chapter aimed to clarify Kant's key problems, resources, strategies and theses. Exactly how and how well he justifies these points requires careful examination, my task in PART 2. This examination may, I hope, be more focussed, constructive and cogent, whether *pro* or *contra*, by

12. Regarding global perceptual scepticism, see below, §§48–60. To anticipate briefly, global perceptual scepticism requires infallibilism about cognitive justification; Kant's Thesis of Singular Cognitive Reference shows that, in principle, infallibilism is *irrelevant* to any and all non-formal domains. The purportedly 'global' character of such scepticism renders it an entirely transcendent, merely conceptual construct: As Kant expressly notes, the whole of perceptual experience is not itself an *object* of perception (A483–4/B511–2). No wonder neither logic nor sensory evidence can address global perceptual scepticism! Yet the mere logical consistency of the idea of global perceptual scepticism only satisfies the first of the five proto-cognitive achievements distinguished by Kant's Thesis of Singular Cognitive Reference, and its mere logical consistency cannot bring so-called 'global sceptical hypotheses' into the non-formal domain of genuine empirical cognition (whether knowledge, guesswork or error). Devotés of global perceptual scepticism should carefully reconsider Tempier (1277) and Tetens's keen deictic point.
13. C.I. Lewis (*MWO*) argued for a host of synthetic *a priori* concepts and principles, but shied away from their necessity. On Lewis (*MWO*) and Sellars (*SM*) see above, §§13, 15. The most fundamental synthetic necessary truths cannot be mere conventions; see Toulmin (1949); Parrini (2009), (2010); Westphal (2017c).

having Kant's issues, aims and strategies in clear view. Readers will have noticed my careful selection of themes and theses on which to focus. I have prescind from Kant's transcendental idealism, to exhibit what, and how very much, Kant achieves without appeal to it,¹⁴ and because I have argued (*KTPR*) that he fails to justify that idealism, and further: Kant did not need that idealism to achieve his most important results, results which deserve far better regard than they generally have had, especially amongst epistemologists.

14. Without appealing at all to transcendental idealism, Kant soundly diagnoses the spurious debate about 'freedom' *versus* 'determinism' (of human action), showing that it is an *argumentum ad ignorantium*; see below, §§74–83.

30. Kant's Inventory of Basic Formal Features of Our Cognitive Capacities

This inventory is discussed above, §§27.4–.7, 28. Along with the concepts and principles indicated below, Kant appeals to:

two basic *a priori* concepts of 'time' and of 'space', which can be arbitrarily delimited so as to specify particular spatial regions and particular periods of time;
 an unspecified manifold of continuing sensory intake;
and his Thesis of Singular Cognitive Reference (above, §26).

JUDGMENTS (A70/B95)	CATEGORIES (A80/B106)	SCHEMATISM <i>of the</i> Categories (A145/B184–5)
<i>Quantity</i>	<i>Quantity</i>	<i>Schema of Magnitude</i>
Universal	Unity	= time-series (sequence)
Particular	Plurality	{≈ spatial region; figure, size}†
Singular	Totality	
<i>Quality</i>	<i>Quality</i>	<i>Schema of Quality</i>
Affirmative	Reality	= time-content (duration)
Negative	Negation	{≈ spatial occupation; density}
In-finite	Limitation	
<i>Relation</i>	<i>Relation</i>	<i>Schema of Relation</i>
Categorical	Inherence & Subsistence	= time order
Hypothetical	Cause & Effect	{≈ spatial order(s), array, locations}
Disjunctive	Community (causal reciprocity)	
<i>Modality</i>	<i>Modality</i>	<i>Schema of Modality</i>
Problematic	Possibility – Impossibility	= time-scope
Assertoric	Existence – Non-Existence	{≈ spatial persistence}
Apodeictic	Necessity – Contingency	{†suggested spatial schemata}

PRINCIPLES *of the* UNDERSTANDING

(cf. A142–5/B182–4, A161/B200)

Axioms of Intuition (A162/B202)

Extensive Magnitude Any particular we can identify occupies some identifiable region of space during some identifiable period of time.

Anticipations of Perception (A166/B207)

Intensive Magnitude Any perceptible quality has some degree of intensity.
 {Any bit of matter filling any space has some degree of active force or causal power; cf. A172–5, 214/B214–6, 261.}

Analogies of Experience (A215/B262)

Permanence of the Real in Time Substance persists through changes of its states.
 Necessary Succession Changes of state of any one substance are (causally) regular.
 Reciprocal Causality Causal action of any spatio-temporal substance is causal interaction between two (or more) of them.

Postulates of Empirical Thinking (A218/B265–6)

Possible:* Accord with conditions of temporal orderability {&spatial locatability}
 Actual: Existence at some time {&location}
 Necessary: Existence at all times {in some location or other}

{*These modalities are *transcendentally* specified; ≠ the causal modalities treated in the Analogies.}

5 Human Consciousness and Its Transcendental Conditions

Kant's Anti-Cartesian Revolt

31. Introduction

Kant's philosophy is deeply systematic. Understanding his account of human consciousness requires considering some of his broader systematic analyses, to the extent required here to understand his account of consciousness, which is of great philosophical interest. 'Anti-Cartesianism' and 'externalism' are key issues in recent philosophy of mind, philosophy of language and epistemology. 'Cartesianism' is a group of principles, stemming from Descartes – whether by assent or by assimilation – including these pertinent here:

1. *The Priority of Inner Experience*: The fact that we experience, or at least appear to experience, various objects and events is fundamental. A key issue is whether anything we experience is as it appears to us to be.
2. *Internalism* (or 'Individualism') *about Mental Content*: The apparent or manifest content of our experience or awareness can be defined or specified without reference to anything 'outside' our minds, in particular, anything in the 'external' world, or nature.¹
3. *Infallibilism about Mental Content*: Each and any 'mental' content, or content of experience, is exactly what it seems to us to be, and nothing else. Thus we cannot be mistaken about our mental contents.²
4. *Internalism about Justification*: One is, or can upon simple reflection become, aware of whatever may bear upon the justificatory status of one's beliefs or (putative) knowledge.
5. *Infallibilism about Cognitive Justification*: Genuine, sufficient epistemic justification entails the truth of what is believed or claimed.

1. The unfortunate designation 'individualism' for this view is used by Burge (1992), 46–7.

2. Alston (1989, 257–64) stresses the distinctions amongst infallibility, incorrigibility and indubitability. These three concepts are often conflated in Modern and contemporary epistemology. When using technical terms, I have tried to define them sufficiently for present purposes as they are introduced. For further information on terms or philosophers here mentioned please see Sosa, Dancy & Steup (2010), Bernecker & Pritchard (2011), Guttenplan (1995) or Garvey (2011).

Whilst they continue to have able defenders, much contemporary philosophy of mind and epistemology aims to criticise, reject and replace these Cartesian views. Largely unrecognised, however, is that radical critique of Cartesianism began with Kant. More important yet is his critique of empiricism. This, too, is of great contemporary importance, for most contemporary critics of Cartesianism are heirs to the empiricist tradition, beginning with Locke and Hume, into which Russell embedded analytic philosophy almost at its outset.³

Kant was the first great anti-Cartesian in epistemology and philosophy of mind. He criticised the five Cartesian tenets listed above, and developed sophisticated alternatives to them. His transcendental examination of the necessary *a priori* conditions for the very possibility of self-conscious human experience justifies externalism about cognitive justification, and proves externalism about mental content. Semantic concern with the unity of the proposition (required for propositionally structured awareness and self-awareness) is central to Kant's account of the unity of any cognitive judgment. The perceptual 'binding problem' is central to Kant's account of the unity of the object within perception. To understand the aims and character of Kant's innovations requires setting his views in the context of the Modern 'new way of ideas'.

32. The Modern 'New Way of Ideas'

Characteristic of most Modern epistemologies and philosophies of mind is a distinctive kind of representationalism, according to which the direct objects of our awareness are mental representations, which are caused (typically) by objects in our surroundings and which (in cases of veridical perception) represent actual characteristics of those objects. Similar views had been developed by Stoics, and were recognised already by Sextus Empiricus (*PH* 2:74) to generate a sceptical 'veil of perception': If the only direct object(s) of our awareness are mental 'ideas', on what basis can we know whether any of our ideas represent, accurately or inaccurately, anything in our surroundings that supposedly causes them? On what basis can we know or even reasonably presume that we are in any physical surroundings? In view of this obvious problem with representational theories of perception, why did such theories become the received wisdom amongst the vast majority of Modern philosophers?

3. In 1922 Russell (*CP* 9:39) proclaimed: 'I should take 'back to the 18th Century' as a battle-cry, if I could entertain any hope that others would rally to it'; Quine (1969a, 72, *cf.* 74, 76) concurred: 'On the doctrinal side, I do not see that we are farther along today than where Hume left us. The Humean predicament is the human predicament'.

The mind-body problem is unknown to the Greeks and Mediaevals (Matson 1966, King 2007). One source of its development is the newly quantified science of nature, physics. Central to scientific investigation of natural phenomena, whether terrestrial or celestial, are the size, shape, location, motion, number and material constitution of objects. These ‘primary’ qualities were regarded as the only fundamental or ‘real’ qualities of bodies. All the others that make life so colourful, tasty and delightful are thus ‘secondary’, qualities derivative from the effects of the primary qualities of bodies upon our senses. With the mechanisation of nature inevitably came the mechanisation of the human body. Descartes’ innovation was not the mind, it was the body as *machina*; it too is (in principle) exhaustively describable in purely quantitative terms. Thus even our sensory organs cannot themselves be qualified by the ‘secondary’ qualities, by the colours, odours, tastes, or auditory tones we experience so abundantly. This is the key shift away from Aristotelian and Mediaeval notions of the human body, according to which the *soul* is percipient, whereas *nous* is rational. Since we *do* experience such qualities, they must ‘be somewhere’ or inhere in ‘something’; since we *experience* them, they must inhere in our minds. This line of reasoning gave strong impetus for regarding sensed qualities as ‘modes’ of the mind, caused (occasioned) by physical objects in our surroundings, and transmitted to us mechanically *via* our bodies.

Distinguishing between our awareness and its apparent objects and separating them in this way also had a theological impetus (Boulter 2002, 77–80, 82–6; 2011). Whilst natural necessity was taken for granted by the Ancient Greeks and other pre-Christian naturalists, the Christian doctrine of divine omnipotence entails that God can produce any event, regardless of whether its typical natural causes occur. The universal scope of this thesis includes those events we call ‘perceivings’, and entails that they, too, can be made by God to occur regardless of whether the typical causes of our perceivings occur. Thus perceivings can occur even in the absence of whatever we ordinarily take ourselves to perceive, in each putative case of perception. If direct realism were true, if we directly perceive physical particulars, this would be impossible. Hence we must *not* perceive physical particulars directly; we must perceive them *via* our mental representations of them. Descartes’ dilemma at the end of his first Meditation (AT 7:23) already looms: What if an omnipotent being who can cause one’s (apparent) perceptual experiences isn’t omni-benevolent, and might instead be a deceiver?

These two developments occurred in a post-Reformation intellectual climate already suffused with sceptical issues through the writings of Sextus Empiricus (1621), Montaigne and re-emphasised by Bayle, which challenged thinkers either to refute Pyrrhonism or to learn to live with it (Popkin 1964, chs. 1–5). Living with it might be consistent with some forms of fideist religious faith, but would abandon the new natural science. Given the well-known vagaries of perceptual experience, empirical

evidence, if indeed it be evidence, seemed perhaps suited to the task of living with Pyrrhonism, though not to refuting it. ‘Fallibilist’ accounts of epistemic justification were thus ruled out as capitulations to scepticism, rather than responses or alternatives to it. This demotion of empirical evidence was facilitated by continued adherence to ancient distinction, presumably exhaustive, between two kinds of knowledge: *historia* and *scientia*. ‘Historical’ knowledge is based squarely and solely on perception or empirical evidence; it is inevitably partial and unsystematic, or at least cannot be known to be otherwise. ‘*Scientia*’ is the only rigorous form of knowledge, for it justifies conclusions by deducing them from original ‘first’ principles.⁴

This epistemological implication of divine omnipotence was declared explicitly upon authority of the Roman Pope by Étienne Tempier, Bishop of Paris, in March 1277, when condemning 220 neo-Aristotelian theses as heretical (Piché 1999, Boulter 2011). His condemnation asserted and repeatedly implied that knowledge (*scientia*) requires eliminating by demonstrative proof all logically possible alternatives to any known claim. That is how, when and where Aristotle’s flexible model of *scientia* was converted into infallibilist deductivism, directly fostering Descartes’ merely possible nemesis, the *malin genie*, because according to Tempier, the divine omnipotence can bring about any event regardless of its typical natural causes, including those events we regard as our experiences of our natural and social environs. Descartes generalised this into possible global perceptual scepticism. Ever since, a central tenet of Cartesian scepticism, and of analytical epistemology prior to Gettier (1963), is that justification sufficient for knowledge entails the truth of what is known, so that any logical possibility of error must be excluded; otherwise what is putatively known could be false. This tenet requires epistemologists to demonstrate that our cognitive capacities are sufficiently reliable for cognition in any possible environment before trusting our actual cognitive capacities within our actual environment.

In this context, then, it appeared that refuting scepticism requires devising a way of harnessing sensory experience for the service of *scientia*. This is precisely what Descartes did by defining sensing ‘properly speaking’:

... I certainly do seem to see, hear, and feel warmth. This cannot be false. Properly speaking, this is what in me is called ‘sensing’. But this is, precisely speaking, nothing other than thinking. (Med. 2, AT 7:29)

4. Descartes uses this distinction in passing in the Third of his *Rules for Directing the Mind* ... (AT 10:367). This distinction gives the point to Locke’s (*Es* 1.1.2) claim to use the ‘historical, plain method’ and to Hume’s (*En* 8.64.2) contrast between ‘inference and reasoning’ *versus* ‘memory and senses’ as sources of knowledge. Kant (A835–7/B863–5) uses it in the same sense as Descartes in a parallel context.

In one facile re-definition, Descartes suddenly disclosed an inexhaustible realm of empirical evidence that must be cognitively reliable because this kind of evidence is exactly what it appears to be! Not even an omnipotent evil genius can make this kind of sensory evidence false or unreliable. Descartes defended our knowledge of the world by proving God exists and cannot be a deceiver, because any being with one perfection, such as omnipotence, must have all perfections, including omni-benevolence (Med. 3, AT 7:50). Whilst this strategy was controversial from the start and was rejected by empiricists, Locke, Berkeley and Hume all adopted Descartes' view that sensory representations or 'ideas' are exactly what they seem to be,⁵ and they all adopted foundationalist approaches (modelled on deductivist *scientia*) to cognitive justification. In the absence of a Cartesian divine guarantee, Locke distinguished our perceptual knowledge of our surroundings from 'intuitive' and 'demonstrative' knowledge, calling it 'sensitive'. He claimed that 'sensitive' knowledge is 'beyond doubt' and has its distinctive kind and degree of evidence and certainty, whilst recognising it did not match the utter certainty of the other two kinds of knowledge (*Es* 4.2.14). Hume relentlessly drew out the implications of his premises, concluding in profound empirical scepticism; indeed, on Hume's account, our very concept of a physical object is merely a 'fiction' (*T* 1.4.2.36, .42–43).

Thus were both representationalist theories of perception and their associated 'problem of the external world' bequeathed to subsequent centuries, where they lodged again in a wide variety of sense data theories and, in modified form, in reductionist programmes in analytic epistemology at least through the 1950's. Obscured in this familiar history, however, are two crucial issues noticed by only a few Modern philosophers. These issues lead from epistemology into some core issues in philosophy of mind that are key points of departure for Kant's accounts of consciousness. One problem is that representationalist accounts of sensory ideas tended to assume that, if a sensory idea was caused by an object, that idea also represented (some feature of) that object. Whence comes such 'representational' capacity? In what consists the representation relation between any idea and 'its' (alleged) object? The second problem concerns sensory atomism, a view held expressly by Locke (*Es* 2.2.1) and Hume (*T* 1.1.7.3, 1.2.1.3, 1.2.3.10), along with many others. The problem of how to account for the representational capacity of our sensations or sensory ideas was recognised by Condillac (1754/1982), who initiated a new, minority tradition in philosophical theory of perception called 'sensationalism'. The key insight of this theory is that the mere fact that physical objects cause our sensations or sensory ideas does not explain how our sensations or sensory ideas can or do represent their alleged

5. Locke (*Es* 4.3.8); Berkeley, *Prin.* 1:3; Hume, *En1* §7.1 ¶52; *T* 1.4.2.5, –7.

objects. Explaining their representational capacity was the key challenge facing sensationist theories, which were also espoused (in modified form), *inter alia*, by Reid and in Germany by Tetens (1777), from whom Kant adapted it (George 1981, Harper 1984b).

Sensationist theories of perception generally adopted the sensory atomism common in Modern theories of perception. A second problem generated by sensory atomism is to explain what unites any group of sensations into what might be a percept of any one object? This issue arises within each sensory modality, and also across our sensory modalities. This issue arises synchronically within any momentary perception of an object, and it arises diachronically as a problem of integrating successive percepts of the same object. These two sets of issues also arise at two levels. One is purely sensory; it concerns the generation of sensory appearances to each of us. A second level is intellectual; it concerns how we recognise the various bits of sensory information we receive through sensory experience to be bits of information about one and the same object. These problems about sensations lurk in the core of the Modern ‘new way of ideas’, though they were recognised by only three Modern philosophers: Hume, Kant and Hegel. They were neglected by representational theorists of perception and by sensationists alike, often because they were occluded by uncritical appeal to what we ‘notice’ (*cf.* Westphal 1998a, Part 1). These problems with sensations recur today in neurophysiology of perception as a set of problems now called the ‘binding problem’ (Roskies 1999; above, §22), which only recently garnered attention from epistemologists (Cleeremans 2003).

33. Kant’s Transcendental Grounds for Rejecting Cartesianism

33.1. Kant’s Lead Question

All three problems: how or even whether sensations or sensory ideas *represent* physical objects, what binds sensations or sensory ideas together so that they *can* represent physical objects, and what enables us to identify a variety of sensory information *as* information about any *one* object, are identified by Kant in the lead question of his *Critique of Pure Reason*. Kant undertook to write the *Critique* when he discovered this decisive question:

On what ground rests the relation of that in us which is called representation to the object? (GS 10:130.6–8; *cf.* A197/B242)

Cognitive reference and its role both in thought and in knowledge is *the* central issue of Kant’s *Critique of Pure Reason*. Kant recognised that neither causal theories nor descriptions theories of reference can solve these

problems (Melnick 1989, 1–4). The shortcomings of causal theories Kant learnt through study of Hume and his German followers, and their sensationist critics; causal relations between our surroundings and our sensory ideas don't suffice to explain how those ideas *refer to* and so *can* represent objects in our surroundings. The shortcomings of descriptions theories Kant learnt through his critical reflections on Leibniz, summarised in the Amphiboly of the Concepts of Reflection (A260–92/B316–49). In brief, no description, regardless of how detailed or specific, can indicate whether it is (referentially, denotatively) empty, ambiguous or definite; hence descriptions alone cannot provide singular cognitive reference. This is the key failing of traditional rationalism: Rationalists freely used *a priori* concepts in metaphysics without asking, How can *a priori* concepts be referred to any particulars about which they purport to make metaphysical claims?

Kant's objections to empiricism illuminate his innovative 'transcendental' approach to examining human experience and its necessary formal conditions. One central empiricist principle concerns the content of concepts or the meanings of terms. Concept empiricism holds that every term in a language is either a logical term, a term defined by ostending a sensory object, or can be defined by means of these two kinds of terms. Because concept empiricism requires purely ostensive definition of terms that name sensory objects or their features, it requires aconceptual knowledge of particulars, an epistemological view now familiar under Russell's designation, 'knowledge by acquaintance'. Against empiricism of this kind Kant argues that identifying any particular object (or event) we point to (or ostend) requires both locating it (at least approximately) within space and time and correctly (if approximately) identifying some of its manifest character(istics). Thus our basic awareness of particulars requires predicative ascription. This thesis, which follows as a corollary from Kant's Transcendental Aesthetic (on space and time) and Analytic of Concepts, is precisely that defended by Gareth Evans (1975).

33.2. A Priori Concepts

Kant's rejection of empiricism must be a premiss for his analysis, and not merely a conclusion of it, if he is to avoid begging the question against his philosophical opponents. In this regard, Kant argues directly that concept empiricism cannot account for our concepts of space, time or cause. The status of the general concept of 'cause' was considered above (§21). That concept empiricism cannot account for our concept of physical object had already been demonstrated by Hume; only for that reason does and must he condemn our 'idea of body' as a 'fiction' (*T* 1.4.2.36, .42–43; *cf.* Westphal 1998a, §4). Very briefly, Kant argues that in order to identify any region of space or time occupied by any particular, or to recognise its spatial or temporal features, presupposes that we already

have and can use concepts of space and time to delimit relevant periods of time and regions of space (for brevity, ‘times’ and ‘spaces’). Thus with regard to identifying any particulars whatever, and identifying any of their spatial or temporal features, our concepts of space and time are *a priori* (A24/B38–9). If Kant’s considerations regarding the *a priori* status of his categories may seem too brief, their *a priori* status is justified by detailed, strictly internal critique of the best concept-empiricist accounts of each of these key concepts (Turnbull 1959; Westphal 1989, 230–2 (n.99), 1998a, 2013a; cf. below, §87).

For such reasons, Kant is confident that we have a set of *a priori* concepts, which he called ‘categories’ (A78–83/B102–9). He does not think they are innate. Innate in the human mind, according to Kant, are 12 logical functions of judging. These functions of judging guide the generation of the categories when these are used to organise the spatio-temporal (sensory) manifolds supplied by our forms of sensibility (Longuenesse 1998). Kant recognised, further, that our *a priori* categories can only be used in legitimate cognitive judgments if and when they are used to identify particular objects or events within space and time. Spatio-temporal localisation is constitutive of the singular presentation of particulars we experience, and spatio-temporal delimitation is constitutive of our singular cognitive reference to them. This, very briefly, is the core of Kant’s answer to the semantic question of reference neglected by his predecessors.⁶

33.3. *The Binding Problem*

Amongst the binding problems noted above (§22) is a sensory issue of how various sensations become combined into the percept of any one object, and an intellectual issue of how we recognise that the sensory information provided in perception is information about any one object. These issues arise, as noted, in both synchronic and diachronic versions. Kant realised that these problems are especially pressing for radical empiricism, such as Hume’s or Condillac’s, though they also require answers by rationalists and certainly by any adherent of the new way of ideas. If an idea is exactly what it seems to be, then our awareness of that idea seems to be unproblematic: If that idea occurs to us at all, we must be aware of it, for its *esse* just is its *percipi*; our awareness of it is built right into its being an idea at all. This self-disclosing nature of ideas, however, obscures a crucial issue, because it only accounts for the distributive awareness of each and any one such ‘idea’ (regardless of how simple or complex it may be). Nothing in such ideas, self-disclosing

6. Kant’s semantics of cognitive reference is examined in Melnick (1989), Hanna (2001), and *KTPR*. Hanna replies brilliantly on Kant’s behalf to Quine.

though each may be, accounts for any of us being aware *that* each of us is aware of any *plurality*, nor even any *pair*, of such ideas. The ‘consciousness’ involved in the self-manifestation of any Cartesian sensory ‘idea’ or Humean ‘impression’ is distributed individually across each such idea (B133). How, exactly, can any of us have *one* (collective) consciousness of any *plurality* of sensory ideas? How is the self-ascription of sensory ideas, or more generally, of sensory experiences at all possible? No plurality of sensory ideas, and analogously, no plurality of sensory experiences, as such, can account for our obvious capacity to ascribe a variety of ideas or experiences to ourselves, nor can any one privileged idea or experience account for it. Hence only some intellectual factor(s) can make self-ascription of any plurality of sensory states possible (B131–5). Any representational state providing one collective awareness of a plurality of sensory ideas or experiences involves *judgment*, a judgment *that* one and the same judge or Subject of experience has and is aware of each member of the relevant plurality of ideas or experiences (or: particulars). Perceptual experience thus requires perceptual *synthesis* of sensory intake. Sensations or sensory intake alone cannot account for such synthesis; the relevant synthesis is an intellectual achievement involving judgment, and the awareness of the plurality of synthesised sensory information is a further intellectual, judgmental achievement. That naïve realism may *seem* to be true provides no evidence to the contrary. Kant’s transcendental method rejects the alleged ‘transparency of consciousness’, another stock Cartesian tenet (see below).

By recognising the distinctive contributions of sensation and judgment in perceptual experience (even in putative or merely apparent experience), Kant is able to reconceive sensations, no longer as Cartesian (or Humean) *objects* of awareness, but as *components of acts* of awareness.⁷ In cases of veridical perception, we are aware of spatio-temporal particulars *via* our integrated sensory and judgmental acts of perceiving them. Rejecting the Modern reification of sensations as objects of awareness enables Kant to develop a ‘direct’ theory of perception, according to which the objects we perceive are spatio-temporal particulars themselves, though Kant is no naïve realist about our perception of objects in our surroundings. Instead, our ‘direct’ perception of objects in our surroundings is a complex achievement requiring the integration of both sensory and intellectual factors.

Kant’s recognition of the crucial importance of perceptual synthesis for solving ‘binding’ problems and resolving unanswered, indeed unasked questions at the centre of the new way of ideas, together with

7. This view of sensations as components of acts of sensory awareness of our surroundings was advocated by Reid in response to Hume; it was adopted by Tetens, from whom Kant adopted it.

his recognition of the role of *a priori* concepts in defining and acquiring even the simplest empirical concepts, provide two of his key reasons for holding that both sensibility (our capacity to sense) and understanding (our capacity to use concepts in judgments) have distinct though integrated roles in the very possibility of our enjoying sensory experience at all (A15, B29). What are these roles and how can they be identified? To what extent are these philosophical questions amenable to philosophical inquiry? Kant acknowledged various physiological and psychological factors in human experience, though he held that these disciplines (nascent though they were in his day) cannot answer the normative questions of epistemology (nor of moral theory) about the character and scope of the accuracy, validity, reliability or justification of our most basic cognitive (and practical) principles (A261–3/B317–9, B219; *KdU* Int., 5:182.26–32). These issues pertain centrally to who we are (A804–5/B832–3; *Logic*, 9:25), what we are conscious of, and how we are conscious of it. Kant justifies his theory of perception by showing that we can know that we do have at least some veridical perception of the world around us. Demonstrating this involves refuting global perceptual scepticism of the kind represented by Sextus Empiricus, Hume, Descartes in the first Meditation, or Barry Stroud.

33.4. *Kant's Critique of Global Perceptual Scepticism*

Kant's anti-sceptical aim requires eschewing empirical data about the external world; appealing to such data begs the question against global perceptual sceptics. Hence Kant sought to show that at least some synthetic principles can be known *a priori*. He recognised that such a proof cannot be solely analytic (A216–8/B263–5). He also recognised that such a proof cannot follow the Cartesian model of starting with the obvious fact of one's own self-consciousness and of one's own apparent sensory experience, and trying to prove on the basis of those 'evidential data' what conclusions follow regarding empirical knowledge. Kant recognised that a wholly 'changed way of thinking' (Bxviii) is required to address these questions. Kant's refutation of global perceptual scepticism does take the fact of our self-consciousness as a premiss, though it refines it significantly. Stated generally, his lead question becomes, What *a priori* conditions must be satisfied *if* we are to be apperceptive at all? If these conditions are to be *a priori*, empirical data cannot suffice to identify or justify them. If these conditions are required for us to be at all apperceptive, and only thus to be able to aware of our putative experience of spatio-temporal particulars, then a new method of philosophical inquiry is required, for as Kant remarked, 'whatever I must presuppose in order to know an object at all, I cannot itself know as an object (*Object*) . . .' (A402). Introspection of the contents of the mind, the work horse (or perhaps only the hobby horse) of Modern philosophy, had thus to be

rejected as philosophically inadequate, indeed irrelevant, to Kant's philosophical examination of human apperception.

Kant's epistemological analysis seeks what he called 'transcendental knowledge':

I call all knowledge *transcendental* that is concerned, not so much with objects, but rather with our way of knowing (*Erkenntnißart*) objects, so far as this [way of knowing objects] is to be possible *a priori*. (B25)

The *a priori* formal conditions of knowledge, according to Kant, largely consist in capacities and functions, most of which function sub-personally. Kant thus replaced the inquiries of his predecessors into our mental being, into what our minds consist in, with an inquiry into our cognitive capacities and functions, which can be investigated independently of questions about mental or physical substance (stuffs). (Kant chose the common German term "*Gemüt*" to designate our human mindedness, so as not to take even a terminological stand on mind-body substance dualism.)

The functions of interest to Kant can only be discovered indirectly, by reflection. The relevant kind of reflection is 'transcendental' (A260–1/B316–7). Transcendental reflection is important because it concerns not merely the logical form but also the cognitive significance and legitimate roles of our representations (whether concepts or intuitions), to determine whether or under what conditions they can ground genuine cognitive judgments. In so doing, transcendental reflection specifies whether or how the representations in question, as components of prospective cognitive judgments, related as they happen to occur in our thoughts, *ought* to be related within our cognitive judgment (A261–3/B317–9). This counts as reflection because it considers representations in connection with our cognitive capacities and their proper functioning; this reflection is transcendental because it concerns our *a priori* capacities to form legitimate cognitive judgments at all. Kant insists that 'transcendental reflection is a duty from which no one can escape if he would judge anything about things *a priori*' (A263/B319). Thus Kant's methods must be understood and closely followed if we are to understand Kant's examinations, analyses, arguments and proofs. That is why this chapter follows one on how he constructs his transcendental critique of pure reason.

One reason for Kant's profoundly changed way of thinking is his recognition that Cartesian infallibilism about justification (§31 above, nr. 3.) requires in effect that our cognitive capacities be proven to be competent in any possible environment before trusting them in our actual environment. Kant did not seek to determine the transcendental conditions of self-conscious experience *per se*. Even if there were some, it's hardly obvious how we could determine what they might be. Kant sought an account of *human* experience, and accordingly sought the *a priori* transcendental

conditions for the possibility of apperceptive *human* experience (or more precisely, for any beings with 12 discursive forms of judging and two forms of sensory intake, spatial and temporal). Kant's key anti-sceptical premiss is 'I am conscious of my own existence as determined in time' (B275). By 'determined in time' Kant here means that each of us is aware of ourselves as being aware of some events appearing to us to occur before, during and after others, where 'appearing to us' is taken subjectively, as 'seeming to us to occur' before, during or after others. Though richer than Descartes' premiss, Kant's appears too innocuous to launch an anti-sceptical *tour de force*.⁸ (Recall my using Kant's term 'apperception' to recall these provisos on his premiss, which are too easily neglected by readers of the term 'self-conscious'.)

33.5. *Kant's Refutation of Global Perceptual Scepticism*

Kant's refutation of global perceptual scepticism is subtle and intricate. Only some key points are indicated here; those that illuminate Kant's account of human consciousness. Their detailed examination and defence follows in chs. 6–8.

In a revealing example (*T* 1.4.2.20–21), Hume hears only a knocking, a squeak, a muffled treading sound and then sees a letter held out to him by a hand extended by an arm, an arm reached out to him by a porter. Remarkably, Hume has no trouble recognising that this meagre series of sensory experience sufficiently indicates, unequivocally, what has happened: A porter entered the front door of his building, climbed the stairs, knocked on Hume's door, opened it when admitted (causing the door hinge to squeak), walked across the carpeted floor and delivered to him a letter whilst he sat in his chair – in all likelihood, a wing chair facing away from the door towards the fire. Thus Hume's experience, no matter how meagre it is officially, indicated that a large number of objects have continued to exist in the interim, and have retained their typical characteristics, including causal characteristics and mutual relations (spatial configuration), whilst having been in the interim unperceived by Hume and thus, on Hume's official account, literally and altogether out of his mind (his bundle of perceptions). The general point implied by such examples, Kant recognised, is that in no case does the mere order in which appearances happen to occur to us suffice to indicate, by itself, the order in which events occurred, even when those two orders coincide. Any change in mere sensory appearances may result from a local motion of an object (relative to us), so that it reveals a previously occluded aspect; it may result from a translational motion of an object (to a different place), so that a different object is perceived by us

8. Descartes' premiss is, '*I am, I exist* is necessarily true whenever it is put forward by me or conceived in my mind' (Med. 2, AT 7:25).

in the place (or angle of view) it previously occupied; it may result from a spatially stable object changing some of its perceptible characteristics; it may result from one substance replacing another within the same space; or it may result from a combination of such events as these. None of these differences can be analysed or discriminated on the basis of Humean impressions or mere sense data; because these are exactly what they seem to be, sensory impressions and sense data are 'Heraclitean': any apparent change in impressions or sense data is a numerical change between numerically different impressions or sense data. Nor for this same reason can impressions or sense data have dispositional properties, because such properties manifest themselves one way in some circumstances and in another way in other circumstances (triggering conditions). Consequently, impressions or sense data theories cannot distinguish between the various accounts of a change of appearances just noted.

Kant makes four key points about this circumstance. The first is negative: if there were no causal relations within or amongst whatever we sense or perceive, then the only 'change' we would 'experience' would be entirely within the subjective flow of ever fresh sensations. Nothing within those sensations would indicate that any one sensation had any greater or lesser relations to, or significance regarding any other. In such a case we could never determine (specify) which sensations were of (relatively stable) objects and which were of transformations. We could make none of the discriminations Hume recognised very well he and the rest of us make all the time as a matter of course with sufficient reliability, accuracy and unhesitating alacrity. If all we 'experienced' were impressions or sense data, none of our sensations could be related, even apparently, to objects (A194–5/B239–40, *cf.* A112). Nevertheless, second, we are aware of some events appearing to us to occur before, during or after others appear to us to occur (B275). Even this innocuous premiss could not be true in a world consisting in nothing but Humean impressions or sense data. Conversely, third, this innocuous premiss can only be true if we live in and perceive a world in which at least some objects and events determine (causally produce) their own order or arrangement in time and space, so that we *can* distinguish them from our perceiving them, *as* we perceive them. For objects or events to determine their own order or arrangement in time and space requires that the antecedent of an event contains a condition such that, when it occurs, that event occurs. Such conditions for such sequences are causal conditions for generating caused effects, including those causal effects which *are* the material integrity of any persisting spatio-temporal particular. Thus only if at least some objects and events we perceive are causally structured, causally interacting perceptible substances, can Kant's innocuous first premiss (B275) be true. However, fourth, for us to be aware of ourselves *as* being aware of some events appearing to precede, occur during or succeed others, requires that we can and do identify at least some such

events and the objects which participate in them. To do this requires that we identify (however approximately) at least some of their causal relations, which requires identifying at least some of their causal characteristics, and requires we succeed in ascribing our experiences of those objects and events to ourselves. Thus for any human being to recognise that Kant's innocuous premiss is true of him- or herself requires that *S/he* has at least some experiential knowledge of spatio-temporal, causally interacting perceptible substances in his or her surroundings. This is the nerve of Kant's Transcendental Deduction of the Categories, Analogies of Experience and Refutation of Idealism. Thus (in brief) does Kant justify *a priori* the legitimacy of our use of our *a priori* concepts of space, time, cause and substance in making genuine cognitive judgments about at least some of our physical surroundings which we perceive. This brief, preliminary sketch is detailed and defended throughout this PART 2.

33.6. *Causal Judgments are Discriminatory*

Consider one central feature of Kant's analysis of causal judgment. In the 'Analogies of Experience' Kant defends three principles of causal judgment. Each principle concerns a distinct aspect of causal phenomena. Causality is strictly related to substance (B183, A182–4, 204/B225–7, 249). Substances persist through change; hence only substances can have dispositional properties, properties which manifest one characteristic in one kind of circumstance, though a different characteristic in others. (Such variable conditions are occasioning causes of a kind usefully called 'triggering conditions'.) The First Analogy treats the persistence of substance through changes of state (transformations). The Second Analogy only treats rule-governed causal processes within any *one* substance. Only the Third Analogy treats causal interaction *between* any two (or more) substances (B111⁹; cf. *KdU*, 5:181). The core points of Kant's three causal principles in the Analogies of Experience are these:

1. Substance persists through changes of state. (B224)
2. Changes of state in any one substance are regular or law governed. (B232)
3. Causal relations between substances are causal *interactions*. (B256)

These three principles form a tightly integrated set of mutually supporting principles; each of them can be used only conjointly with the other two.¹⁰

9. "... die Gemeinschaft ist die Kausalität einer Substanz in Bestimmung der andern wechselseitig..." (B111).

10. Guyer (1987), 168, 212–4, 224–5, 228, 239, 246, 274–5; *KTPR* §36.3; below, §§50–60.

These principles can only be used conjointly because determining that we witness either co-existence or succession requires discriminating the one case from the other, and both determinations require that we identify objects which persist through both the real and the apparent changes involved in the sequence of appearances we witness. We directly perceive or ascertain neither time (A172–3, 188/B214, 231) nor space (A171–2, 214, 487/B214, 261, 515) as such, and the mere order in which we apprehend (take in, sense) appearances does not determine (specify) any objective order of objects or events (A182, 194/B225, 219, 226, 243, 257). Consequently, given our cognitive capacities, we can specify (even approximately) which states of affairs precede, and which coexist with, which others only under the condition that we identify enduring substances which interact and thus produce changes of state in one another. Identifying enduring substances is necessary for us to specify the variety of spatial locations objects or events occupy (and our own literal standpoint amongst them), to specify changes of place, and to specify non-spatial changes (transformations) objects undergo. To make any one such identification requires discriminating the present case from its *causally* possible alternatives, which requires conjoint use of all three principles defended in the ‘Analogies of Experience’. Failing to employ these principles successfully would leave us with ‘nothing but a blind play of representations, *i.e.*, less than a dream’ (A112). Without the capacity to make causal judgments we could never ‘derive’ (as Kant says) the subjective order of apprehension from the objective order of the world (A193/B238), nor could we distinguish between our subjective order of apprehension (sensory intake) and any objective order of things and the events in which they participate (A193–5/B238–9), including those events called ‘perceiving’ (or sensing) them. We could not identify sensed objects at all, not even putatively; we could not identify the door on the basis of its squeak. In practice Hume clearly, correctly and unhesitatingly distinguished the subjective order in which his experiences occurred from the objective causal order of objects and events he experienced, though his epistemology cannot account for this ability (at all!). Kant’s transcendental proofs concern, not merely the possession of key concepts, but their *use* in legitimate cognitive judgments of these sorts. Kant’s three causal principles are universally quantified, yet dreaming up logically possible exceptions to them is in principle epistemologically *irrelevant*, because these principles *guide* causal judgment, and Kant (rightly) defends a robust *fallibilist* account of empirical justification. These are two reasons why examining and defending Kant’s account requires all of this PART 2; *logical* analysis does not suffice for *epistemological* analysis. This is a key lesson to be learnt by exposing Tempier’s deeply mistaken infallibilist edict, and re-learnt from Carnap (1950a, 1–18), Gettier (1963), the open texture of all empirical concepts (above, §5), Kant’s Thesis of Singular Cognitive Reference (§26), and hence the fundamental, ineliminable roles

of cognitive *judgment*. This, in brief, is why epistemology must consider judgment first!

Thus Kant refutes global perceptual scepticism by showing that we must have at least some knowledge of particulars (perceptible, spatio-temporal causally interacting substances) in our surroundings; otherwise Kant's innocuous premiss (B275) could not be true of any one of us finite human cognisers. And if it were not, none of us could even pose or dream about sceptical issues. This blocks the sceptic's generalisation from occasional perceptual error to the possibility of universal perceptual delusion. The universal possibility of perceptual error does *not* entail the possibility of universal perceptual error. Thus Kant can acknowledge that our perceptual judgments are fallible (*cf.* A766/B794), whilst conceding nothing to global perceptual scepticism. Wisely, Kant's proof shows *that* we have some empirical knowledge, without embroiling us in that perennial source of sceptical befuddlement, 'How do you know you're now perceiving (*e.g.*) that chair?' Kant's transcendental analysis of the *a priori* conditions under which alone apperceptive human experience is possible only outlines some key points that answer this 'how' question, because the central philosophical question (in epistemology) is whether we have any empirical knowledge of our surroundings (B116–7, *Axvii*). What we know of our surroundings is for empirical inquiry to discern. *How* we know it remains a vital topic in the cognitive sciences, to which philosophy may contribute, though no more than contribute.

When developed in full detail (below, chs. 6–8), this affords a genuinely transcendental proof of mental content externalism, which puts paid to the Cartesian ego-centric predicament of Modern, and of much recent and contemporary, philosophy: If we are conscious enough to pose problems of global perceptual scepticism, then if we understand Kant's proof, we can also know that we are not subject to global perceptual scepticism, because we can only *be* self-conscious (apperceptive), even to the minimal extent characterised in Kant's innocuous premiss, if in fact we are perceptually conscious of some of our physical surroundings (McDowell's persisting anxiety notwithstanding)!

33.7. *Rational Freedom*

The fact that Kant's three principles of causal judgments form an integrated set has a very important implication for his account of the freedom of rational judgment, both in cognition and in action (below, chs. 11–12). Against Modern rationalist (*a priori*) psychology, Kant argues in detail in the 'Paralogisms of Pure Reason' (A341–61, B399–413) that neither the concept of 'substance' nor the concept of 'simple substance' can be used in any legitimate cognitive judgments about ourselves. This holds true, Kant contends, both for *a priori* philosophical (*i.e.*, 'rational') and for *a posteriori* (empirical) psychological judgments. Kant contends, that

is, that the constantly changing ‘data’ of inner sense changes within time, though none of this introspectable data is itself in space, and we cannot identify *any* substances of *any* kind solely within time. Hence we cannot identify ourselves as any kind of substance. The direct corollary of this finding, together with the integrity of the three principles of causal judgment (in the Analogies), is that we cannot make any legitimate causal judgments within (introspective) psychology. For this reason, causal determinism cannot be known to be true within (introspective) psychology. In principle, Kant argues, psychological determinism is unknowable. This provides Critical grounds to appeal to practical (moral) considerations to determine whether we are free (*KprV* 5:54–6, 134–5).

Kant recognises that we constantly use causal locutions when speaking of the mind or of human action(s). They can hardly be avoided, for such locutions derive from our basic conceptual categories. Yet Kant’s account raises a crucial semantic point widely disregarded today by philosophers and psychologists alike: To what extent can we provide a legitimate constitutive (rather than merely heuristic) interpretation to our causal locutions when considering or investigating the human mind or behaviour? To the extent that we can do so, on what grounds can we do so? Generally, the justification for interpreting causal locutions concerning the mind constitutively appeals to the causal aims of scientific explanation. Kant of course agrees, indeed argues, that seeking causal explanation is a key regulative principle of scientific inquiry. Yet Kant rightly points out that the regulative use of the general causal principle, that each event has some cause(s) or other, within empirical inquiry does not of itself justify the constitutive interpretation of causal locutions in any domain. Constitutive interpretation of causal locutions can only be justified by providing a genuine, sufficient, exclusively *causal explanation* of the phenomenon (or of the precisely specified class of phenomena) in question. So doing is a scientific or technical achievement, not a philosophical one. The programmatic and systematic considerations of philosophers of mind and cognitive psychologists do not suffice to justify any constitutive interpretation of causal locutions within psychology. Contemporary materialist or reductionist philosophers of mind should heed Kant’s important point (detailed and defended below, ch. 13).

Positively, Kant argues that rational judgment is free or ‘spontaneous’ because it is guided by the *normative* considerations of appropriate assessment and use of both evidence and principles of reasoning (Westphal 2018a, §§2–3). If judgment, as a physiological or psychological process is in some way causal, nevertheless it counts as *judgment* only insofar as it responds to such normative considerations, rather than merely to its causal antecedents as such. Judgment is a response to, not merely an effect of, its proper evidentiary and inferential antecedents. If justificatory processes turn out to be causal, they are justificatory not because they are causal, but because they satisfy sufficient normative

constraints – defining or at least including *proper* functioning, *proper* inference and *proper* assessment – to provide sufficient accuracy, reliability and cognitive justification. Kant contends that freedom is a rational idea constitutive, indeed definitive, of our conceiving of ourselves as agents (Allison 1997). Only rational spontaneity enables us to appeal to principles of inference and to make rational judgments, both of which are normative because each rational subject considers for him- or herself whether available procedures, evidence and principles of inference warrant a judgment or conclusion. In the theoretical domain of knowledge, *having* adequate evidence, proof or (in sum) justification, requires *taking* that evidence, proof or justification to be adequate; in the practical domain of deliberation and action, *having* adequate grounds for action requires *taking* those grounds to be adequate.¹¹ We *act* only insofar as we take ourselves to have reasons, even in cases of acting on desires, where we must (*ex hypothesi*) take those desires as appropriate and adequate reasons to act.¹² Otherwise we abdicate rational considerations and absent ourselves from what Sellars (1963, 169) calls ‘the space of reasons’ and merely behave. In that case, as McDowell (*M&W* 13) says, we provide ourselves only excuses and exculpations, but not reasons or justifications, for acting or believing as we do. Kant’s conception of rational spontaneity opposes empiricist accounts of beliefs and desires as merely causal products of environmental stimuli, and it opposes empiricist accounts of action, according to which we act on whatever desires are (literally) ‘strongest’. We think and act rationally only insofar as we judge the merits of whatever case is before us.

34. Conclusion

This chapter has outlined Kant’s development and justification of his Critical account of our active intellect and its roles in perceptual consciousness

11. N.B.: I do not claim that taking evidence to be adequate suffices for that evidence to be adequate! Some epistemologists bridle at the notion that having adequate evidence or grounds for belief requires taking that evidence or those grounds to be adequate. Yet there are many examples of people having memories or perceptions which in fact bear evidentially on a certain belief they hold, yet failing to recognise this evidential relation and so failing to base their belief on that evidence. Basing (or, *mutatis mutandis*, rejecting) beliefs on evidence requires taking that evidence to be both relevant and adequate. Because Kant’s account focusses on our cognitive *capacities*, it is capacious enough to accommodate those cases in which we must and do respond accurately and appropriately (skillfully, capably, wisely) and yet so promptly that no express ratiocination can occur.
12. Thus Kant’s ‘Incorporation Thesis’ (so named by Allison 1990, 5–6, 39–40), that no inclination is a motive unless and until it is incorporated into an agent’s maxim by being judged to be at least permissible (*Rel.*, 6:24n.), is an instance of the more general principle of autonomous judgment identified here; see below, §§74, 85.3.

and in rational judgment, including our consciousness of our rational freedom, all through a radically innovative transcendental inquiry into the necessary *a priori* formal conditions for us to be at all apperceptive. Kant's anti-Cartesianism is a major philosophical breakthrough that far surpasses contemporary anti-Cartesian efforts. It behoves us to give Kant his due and avail ourselves of his profound insights into the constitutive characteristics of our human mindedness, which enable epistemology to consider judgment first and foremost! I now reconstruct and defend in detail Kant's 'Analytic of Principles' (chs. 6–8).

6 Kant's Analytic of Principles

35. Kant's Critique of Justifiable Cognitive Judgment

Kant's 'Analytic of Principles' is in many regards the core of the *Critique of Pure Reason*, and can be understood only by recognising what Kant draws together in it from his systematic study of our basic human forms of conceptually structured judgment and our forms of sensory receptivity. These have been reviewed in some detail in the preceding chapters (chs. 4, 5). To recall, seven parameters of Kant's analysis of the principles of cognitive judgment are these:

1) Hume recognised that we frequently and unavoidably use merely determinable concepts, the relevant scope of which must be specified in context. Hume's official 'copy theory' of sensory impressions and ideas, and his three 'laws' of psychological association can only specify determinate classifications, however fine-grained one can reliably discriminate. For determinable concepts, such as 'space', 'region of space', 'time', 'period of time', 'here', 'there', 'particular body', or even 'word' (as contrasted to noise or mark), only Hume's ever-ready imagination can account, but for these capacities and activities of the human imagination Hume can provide *no* specifically empiricist account: his empiricist principles are exhausted by the copy theory and three forms of psychological association (Westphal 2013a).

2) When seated by the fire in his study, Hume received a letter delivered by porter, and realised that his empiricism could not account for his undeniable beliefs in the continued existence of the street, the stairs up to his apartment, and its door upon which the porter knocked, none of which Hume perceived during the porter's approach (*T* 1.4.2.20–25). By Hume's principles of customary association, beliefs can be no more specific, firm or 'entrenched' than the statistical frequencies which purportedly produce and habituate us to them. Hume's own reported evidence undermines his official associationist psychology.

3) Kant recognised a set of basic problems now called ‘the binding problem’ (Cleremanns 2003): How we are able selectively to integrate some sensations but not others into the sensory perception of any *one* individual within our surroundings? Such problems arise synchronically regarding concurrent sensations, and diachronically during any perceptual episode. They arise within each sensory modality and across our sensory modalities. They also arise at an intellectual level of how we recognise and explicitly identify (judge) any plurality of perceived features to be features of some *one* but not any other individual in our surroundings.

Kant recognised that these binding problems cannot be solved simply by adding more sensations to the mix, nor by associationist psychology, nor by self-consciously explicit judgments or reasoning. Whatever binds sensations together into percepts at any time, and into continuing perceptual episodes over time, must be sub-personal and must exercise *a priori* cognitive capacities and their functions. Kant recognised the methodological challenges to such inquiry, and identified the minimum sufficient cognitive capacities and functions required for us to perceive our surroundings. Kant’s key lies in identifying 12 basic formal aspects of judgment (Wolff 2017), and explicating the conditions of their humanly possible forms of cognitive use. These are diagrammed below (§40); there the central topic of Kant’s ‘Analytic of Principles’ is indicated at far right, top (apperceptive, diachronic experience), though it indirectly concerns their sub-personal correlates and conditions, effected by the transcendental power of imagination, especially regarding perceptual synthesis (which fills most of the diagram).

4) Kant espoused a sophisticated direct Critical realist theory of perception. Typically sensations are not themselves objects of our self-conscious awareness; typically sensations are components of acts of perceptual awareness of our surroundings. Kant adapted this view from Tetens and from Reid. It scotches Hume’s alleged ‘double existence’ of perceptions (*T* 1.4.2.4, .31, .46, .52).

5) Through his critique of Leibniz (in the ‘Amphiboly of the Concepts of Reflection’) and his study of Tetens (1777) Kant learnt an important cognitive-semantic point, that however exhaustively the content of a concept (or conjunction of concepts), or likewise the meaning of a sentence, may be specified, in principle such classificatory content cannot determine whether there are any such individuals, many such, or only one such. Whether any description is (logically, referentially) empty, ambiguous or definite is equally a function of what there is (or was). Whatever are the parameters of conceptual intension or linguistic meaning, Kant’s point is that there is no *candidate* cognitive claim, unless and until Someone refers his or her statement, claim or judgment *to* some individual(s) *S*/he has localised (if approximately) within space and time.

Such reference to (a) localised individual(s) is required for Someone's statement to *have* a truth value, or value as an approximation, or even to be false or mistaken. Such reference is also required to *assess* that truth value (or value as an approximation), for that statement to *have* any cognitive justification and also to *assess* its cognitive justification (above, §26).

6) This thesis about cognitive reference poses Kant's central issue in the *Critique*: How and in what domains we can use our *a priori* concepts, the Categories, in any genuine, justifiable cognitive judgments? Kant poses this issue using Tetens's term, "*realisieren*" (A146, 147, 785/B186, 187, 300, 813), and his own designations concerning the 'objective validity', 'objective reality' or 'objective significance' of the Categories (B70, 81, 116–24, 137, 175, 193–7, 199, 206, 243, 298, 310, 335, 343, 345, 705, 764). The 'objective validity' of the Categories (if any) concerns their cognitively valid use in humanly possible judgments about indicated, localised spatio-temporal individuals (of whatever scale).

The mere logical possibilities in which pre-Critical (and much contemporary) philosophy trades, including global perceptual scepticism, are *cognitively* vacuous unless and until they are referred in some specific way to localised individuals (of whatever kind or scale). The fact that, as a mere point of logic, all of our beliefs and experiences could be as they are, and yet none of them true or veridical (or cognitively justified), *per* Stroud (1994b, 241–2, 245), shows merely that cognitive justification does not consist solely strict logical deduction (*pace* Tempier).

7) In this connection, Kant recognised that the principle of non-contradiction provides a *sine qua non* for the intelligible use of concepts, and thus a canon for cognitive judgment, though no organon for empirical knowledge (A151–3/B190–2). He likewise recognised that mere analysis of concepts is insufficient to address any substantive issues in philosophy. Kant distinguished conceptual explication from conceptual analysis in the same terms and for much the same reasons as Carnap (1950a, 1–18), insisting that only for arbitrarily constructed concepts can we provide their definition or their complete *analysis*, whereas for other concepts we can at best explicate them partially, to the extent required for some inquiry (A727–30/B755–8). This is one source of Kant's terminological flexibility. Whereas Cartesian scepticism demands that we prove our cognitive capacities sufficient for any logically possible environment, *before* conceding their adequacy to our actual surroundings, Kant's specifically transcendental logic (A131/B170) addresses the necessary, legitimate roles of our most fundamental concepts and principles in any *humanly* possible experience and cognition, in view of the fact that we must integrate sensory information over time and through space.

36. Kant's Transcendental Critique of Judgment

Though he titled one book *The Critique of Judgment*, Kant's entire Critical philosophy is a critique of judgment, designed to specify the proper domains and justifiable use of our most fundamental concepts and principles. Kant treats (most) concepts as classifications, the content of which constitutes intension, where such intension provides only possible extension, *i.e.*, possible reference to individuals instantiating the relevant characteristics (features so classified).¹ Insofar as concepts play a transcendental role in enabling us to experience and come to know (or even to err about) our surroundings, they do so by informing rules governing the synthesis of sensory stimulation over time and through surrounding space, or informing our principled judgments about localised particulars.

These conceptually informed rules can be formulated as principles; examining their legitimate, justifiable use within cognitive judgment is Kant's task in this second Book of the Transcendental Analytic, 'The Analytic of Principles', which begins by considering our 'transcendental power of judgment as such' (A132–6/B171–5). As rules of judgment, principles cannot fully specify their proper instances or use. Using principles to classify anything requires, ineliminably, judgment. Judgments are fallible; Kant is a fallibilist both about cognitive judgment (A766/B794–5) and about his own method of transcendental reflection (O'Neill 1992, *KTPR*).

Kant contends that our human form of sensory receptivity is 'passive' or receptive: it requires stimulation *ab extra* to occasion any sensations in us. Hence the content or course of human experience cannot be anticipated *a priori*. However, some 'formal', structural characteristics of experience can be anticipated *a priori*, by specifying what relations any experiential content must exhibit, *if* we are to be able to judge and thereby to identify it using our basic categories and principles of cognitive judgment. Specifying these relations further specifies our categories and cognitive principles to suit them to classifying the characteristics and structures of whatever we experience. The first stage of Kant's specification of the categories concerns their 'Schematism', as rules of synthesis by which our pure *a priori* categories can be used to classify sensory information within time and space (*cf.* B195–6, 209, 340; A381). (I now examine more closely the stages of Kant's analysis charted above in §30.)

37. Kant's Principles of Cognitive Judgment

Building upon the quite general 'schematisation' of the categories, Kant's 'System of Principles of the Pure Understanding' further specifies the

1. Again setting aside questions of whether logical constants should (not) be counted as 'concepts'.

categories by linking each of their four sets ('Titles') to extensive quantities of regions of space or periods of time; to intensive degrees of perceptible, sensed qualities; to conditional causal necessities within or amongst spatio-temporal phenomena; and to the cognitive modalities involved in judging that something exists or occurs, and in what regard(s) its existence or occurrence is possible, actual or necessary. The first two kinds of specification are Kant's 'Axioms of Intuition' and 'Anticipations of Perception'.

1) Kant's Axioms of (sensory) Intuition purport that any- and everything we can experience must occupy at least some period of time and at least some region of space; otherwise we could neither sense, perceive nor judge (apperceive) it at all. (See Kant's taxonomy of representations; A320/B376–7.) Spatial and temporal extension are both extensive quantities, insofar as any region of space contains sub-regions within it, and any period of time contains sub-periods within it; in both, relations between sub-portions and their respective composite wholes are aggregative (additive). Points are limits of line segments; moments are limits of periods of time. Kant contends that identifying any temporal or spatial extension requires (sub-personally) synthesising, *i.e.*: grasping together, integrating, their respective sub-portions. So doing is required to specify the determinable concepts, 'space' and 'time', to delimit the relevant spatial region and temporal period occupied by whatever particular individual(s) one senses (B162).

2) The 'Anticipations of Perception' purport that we can anticipate that any quality we can sense will have some degree, however slight or intense, reflecting the intensity with which anything we perceive affects our sensory receptors. Kant expressly notes that this intensity may be so slight that we cannot notice (apperceive) something, although (*a priori*) there is no lower limit to the reduction of such sensory intensity, nor to the corresponding intensity of any reality so affecting our senses (A168–9/B210–1). Accordingly, the absence of sensory perception never justifies judging that there *is* nothing real within the relevant region and period (A172–3/B214).

38. Kant's Analogies of Experience

Kant's 'Analogies of Experience' are his third set of specifications of the Categories as principles of cognitive judgment. Guyer (1987, 268, 451*n.*5) notes that the Third Analogy is anti-Leibnizian: Kant argues for genuine interaction, not mere synchronic change, amongst spatio-temporal particulars. Two background issues concern occasionalism and corpuscularism. According to occasionalism, action requires purposiveness, which requires consciousness. Matter isn't conscious; hence it is inert and cannot act. Thus all material changes must result from divine

action upon material things. Leibniz held that action requires appetition, which he attributed to every genuine substance. He ruled out real interaction between substances on the metaphysical ground that each existing substance is complete unto itself, so that nothing can be added to, nor subtracted from it; hence no other substance can causally affect it. All apparent interaction is internal change synchronised by God's creation of a harmonious universe. These metaphysical views comported well with physical corpuscularism, according to which matter is discrete, inert and consists in extension and (perhaps) impenetrability. Because matter is inert, all material changes must result from non-material causes, either directly or indirectly. 18th-century (C.E.) physicists lost their Cartesian and corpuscular aversions to ascribing gravity as a physical force to matter, and developments regarding magnetism (Gilbert) and chemistry (Newton, Black, Priestly, Lavoisier) ascribed other active forces to matter. The new dynamic theory of matter ascribed active forces or causal dispositions directly to matter.²

Kant advocated a dynamic account of matter; mechanical interaction presupposes dynamic interaction, matter is constituted by forces (*MAdN*). Kant's Third Analogy prepares for these later analyses. Kant notes that '*Gemeinschaft*' (community) means either *communio* or *commercium*, and argues for the latter (A213/B260). The Third Analogy concerns reciprocal causality within dynamic systems, of which our solar system is but one prominent example. Kant notes this in a *Reflexion*:

Principle. A substance in the world is the cause of a change in another substance only insofar as it itself changes; hence it is causally effective only through a principle of community. The ground of all community is composition or connection by one or another force, through which substances determine each other reciprocally. (*GS* 14:173.1–6; *ca.* 1773–75)

Kant's point is that causal action does not occur without the causally active substance itself changing in some regard; hence causal influence counts as interaction, or *commercium*: exchange or interchange. Kant's proof of his Third Law of Mechanics borrows the principle from the first *Critique*, 'that all external action (*Wirkung*) in the world is *interaction* (*Wechselwirkung*)' (*MAdN* 4:544). This principle comes from the Third Analogy. Newton's law of equality of action and reaction is, Kant holds,

2. Newton rejected the modal supposition that gravity is *essential* to matter; his physics requires only the assertoric premiss that (so far as can be specified physically) matter *has* the force manifest as gravitational attractions and consequent motions. Newton the physicist knew well to reject metaphysical or theological preoccupations with the terminology 'essence' and 'accident'. This is also evident in his theory of light.

an instance of this general ‘metaphysical’ principle (*MAdN* 4:544–9). Kant expressly defends a transeunt account of causality, according to which one material substance causally affects another by effecting (bringing about) a change in it (*O.E.D.*).

The three Analogies form a carefully articulated, incremental proof of transeunt causality (*KTPR* §§32–38). The First Analogy argues that substance persists through changes of its states. The Second Analogy argues that changes of state of a substance are rule-governed. The First and Second Analogies are agnostic about the number of substances; the changes treated in the Second Analogy are changes of some *one* substance. In connection with the Table of Categories, Kant stresses that the third relational category, community, cannot be derived from its two predecessors (inherence-subsistence and causality) because one cannot

. . . by simply combining the concept of a cause and that of a substance, at once have an understanding of *influence*, that is, how a substance can be the cause of something in another substance. [This requires . . .] a separate act of the understanding (B111)

Kant is correct: causal influence, transeunt causality between substances, is a distinct concept to those of substantial persistence and of causality *qua* rule-governed succession of states. Hence the Third Analogy is crucial as a response to Leibniz, to occasionalism, to Kant’s defence of an improved dynamic theory of matter, and to Kant’s response to Hume’s denial that anything about the cause brings about the effect, or that no such transeunt causality can be known by us.

In one paragraph Kant proves that the general concept of cause is *a priori* (A195–6/B240–1; Beck, 1978, 121–5): Simply as a matter of statistics, we much more often observe either a cause or an effect in isolation, but not both in relation. Consequently, on Hume’s empiricist account of concept acquisition by customary, habitual association, we could never develop the general concept ‘cause’: each time we experience only a cause or its supposed effect (but not both), that should weaken our belief in that (putative) particular causal relation. Given their preponderance over those occasions where we witness both the cause and its effect, our beliefs in particular causal relations should be so weak that we would never form a general concept of cause and effect, even if we did, somehow, retain beliefs in some particular causal relations. However, accounting for the use of the concept of causality, and showing that its competent, correct use is necessary to the possibility of unified self-conscious experience, is a transcendental enterprise consummated in Kant’s Analogies of Experience.

In the Second Analogy, Kant mentions the occasionalist view that a substance or a new state of affairs may result from ‘a foreign cause’. To be ‘foreign’ in the relevant sense, this cause must be non-physical and

trans-phenomenal – *i.e.*, transcendent. Kant calls such an origin ‘creation’. Between divine ‘creation’ and divine ‘conservation’ of the universe from one moment to the next lies only a distinction of reason (Descartes, *Med.* 3; *AT* 7:49). Kant grants that transcendent things in themselves may depend upon ‘foreign causes’; however, any such view radically revises the meanings (*Bedeutung*) of terms and could never be an object of possible human experience (A206/B251–2). Only occasionalism holds that a ‘foreign’ cause produces, not substances, but changes of their states; only in this connection does Kant mention creation by transcendent ‘foreign’ causes. Rejecting occasionalism as transcendent metaphysics does not prove that transeunt causality amongst spatio-temporal objects is possible, much less that it is a necessary condition of our possible (apperceptive) experience of co-existing particular substances.

Guyer (1987, 168, 212–4, 224–5, 228, 239, 246, 274–5) shows how the three Analogies form a tightly integrated set of mutually supporting principles.³ The empirical criterion of succession is lack of reversibility of the type of sequence of appearances produced by one or more objects; the empirical criterion of co-existence is the reversibility of the type of sequence of appearances produced by one or more objects. Determining that either co-existence or succession occurs requires determining that the other does not; both determinations require identifying objects which persist through both the real *and* the apparent changes involved in any sequence of appearances to us. We cannot directly perceive either time or space as such (A171–3, 188, 214, 487/B214, 207, 231, 261, 515), and the mere order in which appearances happen to occur to us does not determine (specify) any objective order of objects or events. The only condition under which we can determine which states of affairs precede, and which coexist with, which others is if there *are* enduring, perceptible substances which interact, thereby producing changes of state in one another. Enduring substances are necessary for us to determine (specify) any variety of spatial locations, to determine changes of place, and to determine non-spatial changes of state objects undergo. To determine whether a change of appearances is a function of one object, previously in view, moving out of view when displaced by another; or instead is a function of one object rotating to reveal a different aspect (side, face); or instead is a function of one spatially stable object undergoing a non-spatial change of state, requires that we identify places, changes of state, objects which change place or state, and that we are able to distinguish (discriminate) these different kinds of causal scenario. These discriminations further require that we discriminate which changes in appearances to us are due to our

3. Guyer’s landmark findings have been widely and most unfortunately neglected; see below, §§61–64.

own bodily behaviour, including changing our (literal) point or angle of view (A192–3/B237–8).

To make any one such identification by discriminating the actual causal scenario we perceive requires conjoint use of all three principles of causal judgment defended in the Analogies. Justifying our use of the concept of transeunt causality in legitimate causal judgments is thus central to Kant's three Analogies, not only to the Third. That we can notice something happen, some new perceptible state of affairs (A191–2/B236–7), is only possible *for us* on the basis of our having already perceived some state of affairs which now perceptibly alters. This requires continuity in our self-awareness (apperception), and our capacity *in concreto* to discriminate changes in appearances which depend upon our own corporeal behaviour, from those resulting from surrounding perceptible circumstances and events: The ship sails downstream whether we divert our glance or not; the roof of the house appears before the foundation if we begin by looking up and then down, and likewise side to side. That we can so discriminate changes in view for which we are responsible from changes transpiring within our surroundings (regardless of our own perceptual behaviour) requires that we have some persisting corporeal and apperceptive integrity, and that some of our surroundings are perceptibly stable whilst others perceptibly change. Such commonsense discriminations and perceptual achievements require the (relative, manifest) causal stability of various perceptible particulars surrounding us, including the stability of their currently unperceived aspects (the submerged hull of the ship; the 'back' or other sides of the house, the very top of its roof, its fixed foundation right *there*). The regularity of such perceptible changes *is* (part of) their regular causal structure, including their causal integrity and their regular causal interactions, whether we perceive them or not. As Hume learnt from reflecting upon the porter's delivery, his empiricist principles cannot account even for our mere belief in the continued existence of the street, nor the stairs which Hume did not then perceive. Kant's 'Analogies of Experience' show that humanly perceptible changes in material substances are produced, directly or indirectly (*via* 'relatively inner' determinations), by external transeunt causes.

39. The Postulates of Empirical Thinking

Kant's 'Postulates' concern the categories of modality: possibility, actuality and necessity. Here again the reader must think through Kant's issues and problems to recognise the proper scope and character of Kant's explications, proofs and achievements. His concern is with *categories*, not concepts as such, and his concern, evident in his three stated Postulates, is transcendental: it concerns their legitimate *empirical* use. Kant does not restrict or reduce all modality to merely epistemic concepts; that

would flatly contradict the ‘Analogies’, and indeed the third Postulate itself. His three Postulates are:

1. Whatever agrees with the formal conditions of experience (its intuitive and conceptual conditions) is *possible*.
2. Whatever is connected with the material conditions of experience (of sensation) is *actual*.
3. Whatever is connected according to universal conditions of experience with the actual is (its existence is) *necessary*. (A218/B265–6)

The first Postulate concerns, not unrestricted logical possibility, but the transcendental possibility of whether we could apperceive (experience) something, anything: whether it could occur within human experience, even as a fleeting appearance (of which we were or could be aware).⁴

The second Postulate does not concern the scope and limits of human sensation as such. Kant grants that sensations could occur without our becoming conscious of them, or our integrating them into any conscious percepts (B151–2, A121–3). From Tetens and Reid Kant adapted a sensationist account of sensations, according to which sensations are not themselves typically objects of our self-conscious awareness. Instead, sensations typically are components or aspects of *acts* of awareness of our surroundings. Kant’s Postulates concern ‘empirical thinking’; the relevant material conditions are sensory conditions of apperceptive human *experience*. The most basic point of Kant’s second Postulate is that, if we experience something, it is actual. This claim raises the issue of genuine or veridical *experience* in contrast to any merely apparent ‘experience’. It is not the point of Kant’s Postulates to address this issue, but it is the point of his Appendix to the ‘Postulates’: ‘The Refutation of Idealism’ (below, §40).

Kant’s third Postulate concerns conditional, causally necessary relations amongst actual perceived objects and events, whatever causally produces them, and whatever they may in turn contribute to effecting (causally bringing about). The ‘universal conditions of experience’ mentioned expressly in the third Postulate and specified in the first two Postulates, *i.e.*, the formal conditions of sensory receptivity and conceptual classification, and the material condition of occurrent sensations, do not themselves *generate* the conditional, causally necessary relations amongst actual perceived objects and events (whether current or recently passed). Kant’s Critical point instead is that, in accord with those general conditions of experience, we must be able to identify at least some actual causal relations amongst perceptible objects and events, conditionally

4. I have rendered the sense of Kant’s Postulates as accurately and idiomatically as possible; for a literal translation, see Guyer & Wood (321).

necessary relations amongst them. Any such relations are conditionally *necessary*. Their identification *is* the legitimate empirical use of the category of necessity.

Kant's comments on the Postulates appear to obscure them, because Kant is the first to remove the modal categories from ontology, and to reconceive their cognitive roles in judgments about spatio-temporal particulars (B303, Wolff 2017; *contra* Wolff 1736, 697; Baumgarten 1786). The 'transcendental' use Kant repudiates (A219, 231/B266, 284–5, 303–4) is their (alleged) traditional metaphysical use as the most general categories of being. Instead, these modal categories can be used validly either merely logically, or in connection with localisable spatio-temporal particulars (A219–21/B267–8). The presumptive 'complete' concept of a thing about which one may ask whether it is possible, actual or necessary (A219/B266), belongs to pre-Critical ontology, not to Kant's Critical transcendental philosophy. Kant rejects *infimae species*, concepts so specific they allow no further sub-species (sub-divisions) (B683–4). That, and his cardinal distinction between conceptual analysis and conceptual explication (above, §§2.1, 35), both entail that there can be no 'complete concepts' of spatio-temporal individuals. Kant's comments underscore the insufficiency of conceptual analysis to show that any of these alleged concepts of things or of ground-consequence relations between them are actually instantiated by any individuals (A221–24/B268–71).

Any actual instance of any of our conceptual categories can only be identified in and through our sensory experience of spatio-temporal objects and events (A223–4/B271–2). *This* is Kant's cognitive-semantic point about 'realising' our concepts and thereby alone demonstrating that they have objective reality, *i.e.* that we can properly refer our *a priori* categories *to* any actual particulars, thus demonstrating (deictically) that those categories do have a legitimate cognitive use, and that we competently command this use (A225–6/B272–3). Until we localise and identify such actual particulars, all we can do is (literally) to *anticipate* their form and character, according to these four sets of Principles of cognitive judgment: Kant's 'Axioms of Intuition', 'Anticipations of Perception', 'Analogies of Experience' and 'Postulates of Empirical Thinking'. These same Principles also pertain to our discovery and investigation of imperceptible causal powers, such as magnetism (A226/B273–4), or, *e.g.*, infrared, ultraviolet or polarised light. Kant's principles also hold of micro- and macro-scale structures or systems, such as gravitational attraction within our solar system (below, §§65–73). When we do locate and identify spatio-temporal individuals, only then are we able to investigate their causal structure, characteristics or history, however approximate, commonsensical, diagnostic or scientifically exacting our investigations, explanations or knowledge may be become. Only through empirical inquiries can we identify the conditional causal necessities by which we localise and identify the particulars we investigate, in which they consist, by which they

can *be* what they are, *located* where they are, and through which they effect (or contribute to effecting) other events (A226–32/B279–84).

40. Kant's Refutation of Idealism

Kant's refutation of 'material' idealism, known today as global perceptual scepticism, is as famous as it is concise and deeply intertwined with the entire *Critique of Pure Reason* (cf. below, ch. 8). Kant's 'Refutation' accords with his justificatory fallibilism, about both his own Critical philosophy and about particular cognitive judgments. Infallibilism presumes not only that strict logical deduction suffices for, but that it alone is necessary to cognitive justification. If our only epistemological resource is strict logical deduction, then our only method can be conceptual analysis, but conceptual analysis only provides analytical knowledge of conceptual content (intension); it cannot provide synthetic knowledge of any truths, neither about allegedly generative (causal) relations between any two or more particular things (A217/B264), nor about any relations between our concepts (as components of possible judgments) and any actual particular(s) (A132–3, 599, 639, 721/B16–8, 138, 171–2, 627, 667, 749).

Taking up Kant's invocation of conceptual explication by suggesting appeal to some 'broad' conceptual necessity won't do, unless and until we provide sufficient, reliable criteria for identifying broad, though genuinely conceptual necessity, as distinct to apparent impostors, and more importantly: Until we can show how the purported broad conceptual necessities pertain to *us*, to our human cognitive capacities and possibilities, rather than merely to some logically possible form of nonhuman cognisance. Kant's strategy instead blocks the sceptical generalisation from the universal possibility of perceptual error to the alleged possibility of universal perceptual error.

Kant blocks the sceptical generalisation by identifying a very general, pervasive dependence of human apperception upon our perceptual awareness of our natural surroundings. Kant's premiss is not Descartes' mere self-conscious awareness, but the slightly richer premiss, 'I am aware of my existence as determined in time' (B275). By 'determined' in time, Kant means merely that each of us is aware of ourselves as being aware of some appearances happening to occur to us before, during or after other such appearances. Any sceptic who cavils at this should be asked, 'What did you just say?' If s/he answers, s/he satisfies Kant's premiss; if not, s/he poses no epistemological problems *for us*. (Provide her or him a copy of Kant's *Critique*, and watch how deftly s/he grasps it!) Kant's point is that our capacity to sort and sequence even episodes of appearances-to-us requires our capacity to identify, at least approximately, some apparent temporal order, and that identifying any minimal such temporal order is parasitic upon our *de facto* success in identifying at least some persisting

perceptible particulars, in reference to which alone temporal sequencing is, for us human beings, possible, however approximate or precise it may be. The problems confronting Hume's receipt of a letter recur also within arbitrarily restricted scope, as Hume's identifying a written *letter*, as distinct to a mirage, dream or hallucination (Milmed 1969; Guyer 1989; Strawson 1974, 2011a, 2011b).

Outer intuitions, roughly: sensations of particulars in space surrounding us, are important to Kant's analysis already in the first edition, but in the second Kant makes full use of an important finding of the 'Paralogisms' (A341–403/B399–431) in conjunction with the 'Analogies': Within the exclusively temporal form of inner sense we can identify *no* persisting substance(s) whatever. Persisting substances *we* can only identify within time *and* space (together). If so, Kant has the materials for a cogent, genuinely transcendental proof of mental content externalism. The 'I think', which expresses the transcendental unity of apperception, we can only attain on the basis of the synthetic unity of apperception, namely: successful integration of sensations into perceptual episodes of experiencing particulars within our surroundings. Such synthetic unity of apperception is possible *for us* only if we succeed in using our conceptual categories, specified as the Principles of cognitive judgment considered in this chapter, to sort and discriminate which aspects of which appearances-to-us are due to our own perceptual-motor (corporeal) behaviour and which are due to the existence, structure and interactions amongst perceptible substances surrounding us. We may in any particular case be imprecise, incorrect or poorly justified, but we human beings cannot fail wholesale without utterly undermining our capacity to be apperceptive, by which alone we can wonder about epistemological issues, sceptical or otherwise (see further chs. 8, 9).

41. Kant's Critical Grounds for Distinguishing Phenomena and Noumena

Chapter Three of Kant's *Transcendental Doctrine of the Power of Judgment or Analytic of Principles* (A235–60/B294–315) indicates that Kant provides two distinct, parallel sets of grounds for distinguishing between phenomena and noumena, only one of which requires Transcendental idealism. Deferring Transcendental idealism, one generic, anodyne distinction between 'phenomena' and 'noumena' is the distinction between objects and events as they can and do appear to us within space and time (phenomena), whereas 'noumena' would be individuals (if any there be) which we cannot locate within space and time. Kant's fundamental cognitive-semantic point (above, §26) is that, whatever may be our concepts (*a priori*, empirical, mixed or fancied) we can only use them for *cognition* by identifying and individuating relevant *instances* of them. Such individuation and localisation is, for us human beings,

spatio-temporal. Only by so referring our concepts in judgments to particular instances can or do our judgments have any truth value, or any value as approximations; only so do our judgments achieve even *candidate* status as knowledge; and only so can our judgments *have* any kind or extent of cognitive justification (A58, 244–8/B83, 304–5). Consequently, there can be no experience-transcendent metaphysics; there can only be conceptual analysis, conceptual explication or conceptual construction (as in mathematics, Kant held). Although Kant did not fully appreciate the point, this cognitive-semantic thesis can bear, and it is justified by, Kant's Transcendental Deduction of the categories and the Principles of the Pure Understanding. This crucial finding achieves the key aim of verificationist theories of meaning, *without* invoking any theory of *meaning* (i.e., of conceptual content, intension)! Kant stresses, repeatedly and rightly, that mere possession of concepts (whether *a priori* or otherwise) does not suffice even for putative cognitive claims (B297–304). Kant thus identified well in advance what proved to be the downfall of 'analytic transcendental arguments', which persistently focus upon concept possession, neglecting Kant's issues about their *justifiable use* in cognitive reference to localised, hence localisable individuals (Grundmann 1994, *KTPR* §2.5). The demise of meaning verificationism gives neither global perceptual scepticism nor metaphysics any new lease on philosophical life. This point is well understood by Kant, Hegel (1807), Austin (1946), Wittgenstein (1958), Donnellan (1966), Evans (1975), Perry (1979), Barwise & Perry (1981), Perry (1993), Travis (2008) and İnan (2021); though as noted above (§26.4), it is widely neglected by prominent, influential philosophers.

42. Some Critical Observations

Kant also appeals to what he claims to have demonstrated in the Transcendental Aesthetic, that space and time themselves are solely human forms of receptivity to sensory stimulation, so that particular individuals only *have* spatial and temporal characteristics insofar as we sense (intuit) them (A249–51/B306–7). This is Kant's Transcendental Idealist alternative to Newton's 'absolute' and to Leibniz's 'relational' accounts of space and time (A23/B37–8; see ch. 7). Kant recalls this core thesis of Transcendental idealism to underscore, not the inconceivability, but the utter unknowability of any particular individuals we do not intuit or sense within space and time. Kant's Transcendental idealism is epistemological over-kill; his cognitive semantics suffices, indeed more so than Kant realised.

Kant thinks only Transcendental idealism can save the possibility of our free, responsible (morally imputable) action against the threat of universal causal determinism within the spatio-temporal realm. However, determinism does not hold universally within space and time (Lighthill

1986), nor did Kant's Transcendental Deduction prove it does (*KTPR* §§61–62; Harper 2007). Neither did LaPlace's thought experiment regarding an omniscient demon, nor indeed his entire *Systeme du monde*, prove universal causal determinism within space and time (nor within nature; cf. below, §47). Kant's Categories and cognitive Principles play both regulative and constitutive roles within human experience: They regulate our causal inquiries and judgments, helping us to distinguish actual from causally possible alternative scenarios, and both of these from merely apparent causal relations amongst things, persons and events in our surroundings. Their constitutive status, however, is exhausted by Kant's minimum success requirement. The extent to which we can identify and discriminate causal relations amongst perceptible particulars cannot be specified *a priori*, no more than can the minimum degree of regularity and variety amongst the contents of sensations, the content of experience or the particulars we perceive, sufficient for us to recognise any particulars at all, and so to recognise ourselves *as* aware of them (A653–4/B681–2). Once this minimum requirement for human apperception is satisfied, it is then an empirical matter of causal inquiry, guided by Kant's Principles of Cognitive Judgment, to determine (investigate, figure out, specify) the extent to which we can identify and classify causal relations and structures within nature. The transcendental causal principle, that every event has a cause, we can only *use* as the more specific principle that every physical cause has some sufficient, external cause or causes (*MAdN* 4:543). This principle too is a *regulative* principle of causal inquiry. We obtain causal *knowledge* only from successful, sufficient, exclusively causal explanation. We have well-justified causal *beliefs* only to the extent that we have credible evidence for credible causal explanations of those events. Mistaking the causal *principle* (in either form) for an established, justified causal *law* is a prime instance of 'transcendental subreption' (A619, 733/B647, 761), of mistaking conditions for the possibility of human experience for substantive features of the world we experience. The major premiss of the entire debate about determinism and free human action is unknown, and due to its unrestricted universality, *unknowable* on the basis of empirical evidence. Kant's critique of cognitive judgment suffices to preserve the possibility of free, imputable action. This possibility also secures Kant's principal reason for ascribing rational agency to others: Precisely when we observe organisms behaving intelligently, in ways which *cannot* be explained by causal laws of nature, we are justified in ascribing both theoretical and practical reason to them (A346, 546–7/B404–5, 574–5; see below, §§78, 81).

'Judgments of perception' (*Prol.* §§17–9) as such are only possible for us on the basis of our apperceptive experience and its transcendental conditions. To judge whether the sun warms a stone (*Prol.* §29), we must identify the sun and the stone (and the warmth of the sun and the warmth of the stone). According to the first *Critique*, the perception of any object

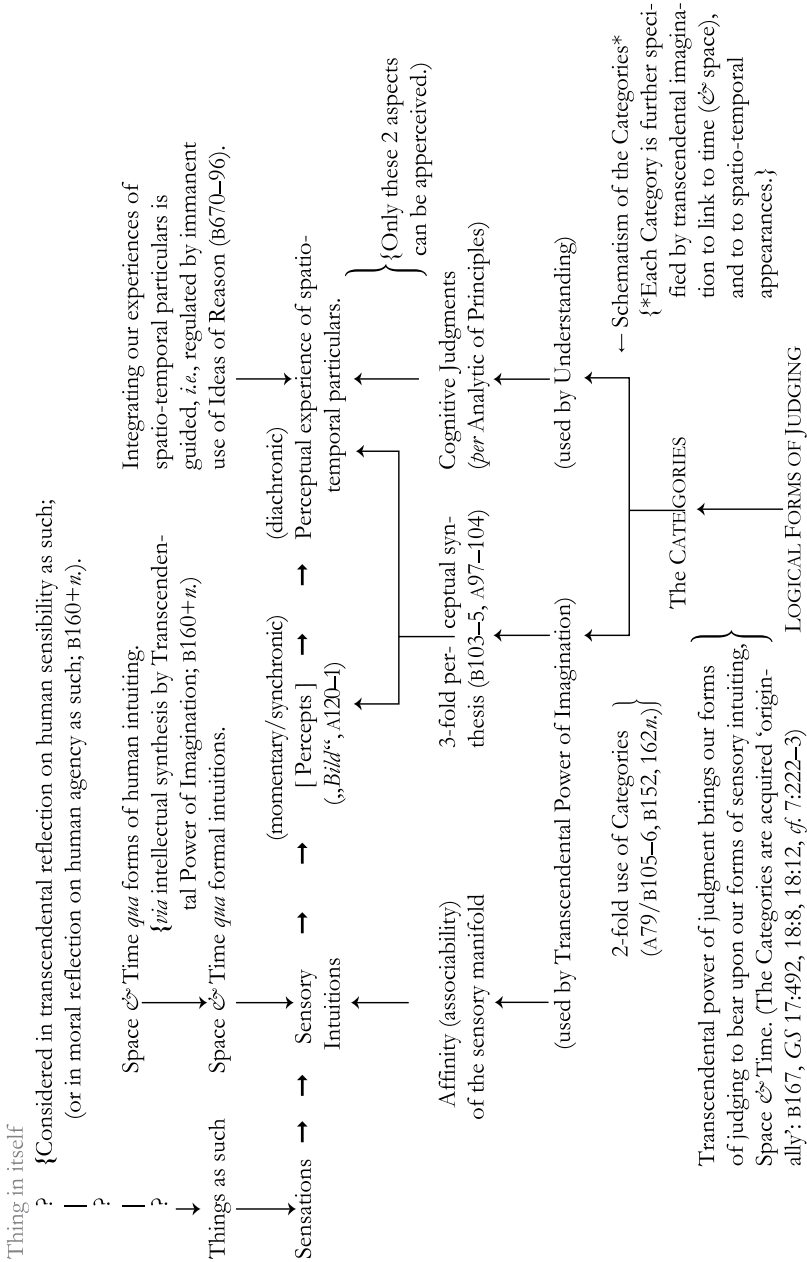
or event we can identify requires that we can and do distinguish ourselves, as self-conscious cognitive subjects, from whatever particulars we perceive. Hence the question whether or how these two doctrines (of *KdV* and *Prol.*) are consistent is a pseudo-problem. The distinction between judgments of perception and judgments of experience and likewise the cognitive advance from the former to the latter can only be made *if* the transcendental conditions for the possibility of apperceptive human experience are satisfied (*cf.* B162). The *Prolegomena* does not consider the most fundamental transcendental issues examined in the *Critique*.

I conclude with a Critical caution: Kant does not need to solve Hume's problem of induction (nor Goodman's newer riddle). Instead, Kant effectively criticised and replaced the deductivist and empiricist presuppositions of those problems. As for so-called knowledge of the future, until something exists or occurs, there is nothing about it to be known, nor about which to be ignorant or mistaken, because there is not yet any relevant 'it' to be known or about which to be mis-taken. As for the relative stability, persistence and re-identifiability of natural kinds, that is our contingent good fortune, thanks to mother nature. Conversely, were there no such stabilities, we could not worry about it, because we could not exist.

Notes:

1. → Arrows indicate processes, roughly information processing channels. Their exact significance depends upon their context (location, *Verortung*, transcendental topic) within Kant's analysis.
 - } Braces link (comments) to particular features of the diagram.
2. Kant's Transcendental idealism only appears in the upper left corner, suggesting how it can be elided from his positive account of our cognitive capacities and our empirical knowledge, both commonsense and natural-scientific.

43. Diagram of Kant's Cognitive Architecture





Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

7 Kant's Dynamical Principles

The Analogies of Experience

44. Introduction

Hume interrupted Kant's 'dogmatic slumbers' (*Prologomena* 4:260), *i.e.*, his uncritical presumption that our most fundamental *a priori* concepts properly apply to spatio-temporal particulars. Sir Peter Strawson (*Basic Laws* 29) declared Kant's reanalysis of those issues made: 'very great and novel gains in epistemology, so great and so novel that, nearly two hundred years after they were made, they have still not been fully absorbed into the philosophical consciousness'. Anti-Cartesianism, mental-content externalism and 'broad' notions of mental or semantic content have been vigorously developed since, yet on all three counts Kant's *Kritik der reinen Vernunft* is still ahead of our time. Although Kant claimed that his transcendental analyses and proofs regarding necessary *a priori* conditions of our commonsense, self-conscious experience require transcendental idealism (Bxvi–xix, A369–70), this is mistaken (*KTPR*). Kant's analysis of our necessary, legitimate use of causal concepts is sufficiently justified by his Critical account of cognitive judgment, in conjunction with his Thesis of Singular Cognitive Reference.

Long-standing rejection of issues about cognitive judgment within analytic epistemology resulted in part from the seeking to avoid 'psychologism' (of whatever varieties), though also by the implicit yet fundamentally Cartesian aspiration to refute the epistemological nightmare of global perceptual scepticism. All of Gettier's (1963) counter-examples centrally involve what became known as 'externalist' factors bearing upon the justificatory status of Someone's beliefs, factors such that *S/he* neither was, nor could easily become, aware by simple reflection. These may be environmental, somatic or habitual, as in Sam's inference patterns. Sceptics stress that all of our experiences and beliefs could be as they are, although as a simple matter of logic they could all be false (Stroud 1994b, 241–2, 245). This instead demonstrates that cognitive justification is not reducible to strict logical deduction. Kant recognised this in his distinction between general logic and a specifically 'transcendental logic' (A131/B170), which considers the various possible and necessary roles of *a priori* concepts and principles within human experience

and knowledge, their respective domains, and the conditions under which their use can be legitimate (or not). Kant understood that understanding human knowledge requires understanding how knowledge is possible for beings like us. So doing requires a basic inventory of our characteristically human cognitive capacities; Kant provided the necessary minimum inventory (above, §§30, 43). Guyer (1989) showed that Kant's analysis of the sub-personal cognitive processing effected by transcendental power of imagination is necessary for any cognisant being who synthesises sensory information over time (in response to stimulation by spatio-temporal objects and events; *cf.* B178, 298) – and through space.

Kant's Thesis of Singular Cognitive Reference (above, §26) underscores that empirical knowledge is discriminatory; it involves discriminating particulars both spatio-temporally and conjointly by their manifest or measurable characteristics. The discriminatory character of our empirical knowledge is greatly augmented and underscored by Kant's analysis of the basic principles of causal judgment in the 'Analogies of Experience'.

Discussion of Kant's Analogies has focussed almost exclusively upon the Second, where Kant is said to have replied to Hume's causal scepticism. That cannot be so. In the Second Analogy Kant's model of causality is Leibnizian (Beck 1978, 149*n.*); it solely concerns rule-governed causal changes of state within any *one* substance, whereas Hume's scepticism concerns causal relations between two or more particulars. Kant's First Analogy concerns the persistence of any one substance through causal changes of its own states. Only in the Third Analogy does Kant defend a principle of causal judgment regarding causal interactions between any two or more substances. Recent literature has paid more attention to Kant's Third Analogy, yet even leading research on Kant's Analogies of Experience neglects Guyer's decisive finding, that Kant's principles of causal judgment in the Analogies form an integrated set, because no one of these principles can be used without conjoint use of the other two.¹ Furthermore, these three principles of causal judgment provide an integrated, incremental justification of judgments about transeunt causal interactions. (A cause is 'transeunt' if it extends beyond any one substance in order to effect a change in another; *O.E.D.*) Kant's main examples in the Third Analogy are astronomical, but his analysis is general and holds of all forms of causal interaction between physical particulars, of whatever kinds, at whatever scale. Following Caird and Paton, Guyer notes that Kant's defence of causal interaction counters Leibniz as well as Hume. Once again I gladly summarise Guyer's findings:

The three Analogies form a tightly integrated set of mutually supporting principles. The empirical criterion of succession is lack of reversibility of the type of sequence of appearances produced by

1. Guyer (1987), 168, 212–14, 224–25, 228, 239, 246, 274–75.

one or more objects; the empirical criterion of co-existence is the reversibility of the type of sequence of appearances produced by one or more objects. Determining that either co-existence or succession occurs requires determining that the other does not, and both determinations require that we identify objects which persist through both the real and the apparent changes involved in the relevant sequence of appearances. We directly perceive neither time nor space as such, and the mere order in which we apprehend (take in) appearances determines no objective order of objects or events: Our ever-successive perceptions may be perceptions of concurrently co-existing particulars or features of some one particular. Consequently, the only condition under which we can determine which states of affairs precede, and which coexist with, which others is if there are enduring substances which interact causally, thereby producing changes of state in one another, including changes in location or motion. Enduring substances are necessary for us to specify the variety of spatial locations, to specify changes of place and to specify non-spatial changes objects undergo. To ascertain whether a change of appearances is a function of one object, previously in view, moving out of view when displaced by another; or instead is a function of one object rotating to reveal a different aspect; or instead is a function of one spatially stable object undergoing a non-spatial change of state, requires that we *can* identify places, changes of state and objects which change place or state, and that we *can* distinguish these different kinds of causal scenario. To identify any one such scenario requires conjoint, discriminatory use of all three principles defended in the Analogies. The principles of causal judgment defended in the Analogies all stand together, or not at all. Defending transeunt causality is thus central to Kant's Analogies as a whole, not only to the Third Analogy. Both the valid and the possible use of Kant's causal principles require that changes in material substances we identify are produced, directly or indirectly (*via* their 'relatively inner' determinations), by external transeunt causes.

45. Kant's Causal Principles in the Analogies of Experience

Kant states these principles of causal judgment in the three Analogies:

1. Principle of the Persistence of Substance:

In all change of appearances substance persists, and in nature its quantum is neither increased nor diminished. (B223)

2. Principle of Temporal Sequence According to the Law of Causality:

All alterations occur in accord with the law of the connection of cause and effect. (B231)

3. Principle of Concurrent Existence According to the Law of Interaction, or Community:

All substances, insofar as they can be perceived in space as concurrent, are in thoroughgoing interaction. (B256)²

The differences in Kant's formulations between the two editions are far less significant than the central cognitive-semantic point they share. Kant's Principles are stated in categorical, universal form, indeed in ways resembling conservation laws in physics (Weizsäcker, 1971). Kant's Principles conjointly state the universal causal principle, that every event has a (perhaps jointly) sufficient efficient cause (or causes). Rationalists, occasionalists, idealists and even Hume in some moods agree. Between the two editions of the first *Critique* Kant introduced (*MadN* 4:543) an important distinction between the universal causal principle and this specific causal principle: Each spatio-temporal, physical event has a (perhaps jointly) sufficient, external spatio-temporal, physical efficient cause (or causes). Kant nowhere in the first *Critique* states this specific causal principle, though later (*KdU* 5:181) he reiterates its distinction to the universal causal principle. Because Kant aims in the Analogies to justify causal interaction between physical substances, he must justify this specific causal principle regarding external physical causes, and not merely the universal causal principle.

Kant has two strategies to meet this challenge; the most important builds upon Kant's cognitive semantics of singular reference. Kant's critique of cognitive judgment, including his cognitive semantics of singular reference (above, §26), requires distinguishing the literal and full meaning (intension, conceptual content, semantic significance) of these causal principles *qua* principles, and the legitimate, justifiable *cognitive* significance of any judgments we can make using those principles. This accords with Kant's calling his analyses and justification of these principles 'Analogies', insofar as these causal principles regulate our causal judgments by guiding our identifying efficient causes of observed spatio-temporal events. How fully or precisely we may identify causes and effects is a matter for empirical inquiry, whether commonsense, diagnostic, forensic or natural-scientific. Because our causal judgments are (as indicated) discriminatory, we can only discriminate apparent from real changes of particulars' states, locations or motions insofar as we identify, sufficiently to recognise them at all, other physical events which cause those changes, so as to distinguish those objective, physical changes from merely apparent changes resulting from our contingent observations, including our bodily comportment; *e.g.*, the directions in which we gaze co-determines the sequence in which we happen to observe the concurrently existing aspects of any building (B162). In contrast, when observing, *e.g.*, a ship navigating

2. I have slightly revised Guyer's translation; Kant's term "*Zugleichsein*" concerns perceptible concurrence during observable (commonsense, un-aided) intervals of time, nothing so exact as the relativisation of instantaneous 'simultaneity' in General Relativity theory is here relevant; see Westphal (2007b), 740–1.

a river, our own changes in viewing perspective (or period) alter nothing about the observable locations of the ship (A192/B237). In making such discriminatory judgments, Kant expressly notes, we cannot possibly refer in any determinate (specifiable) way whatever to any transcendent ('foreign') cause of the sorts alleged by occasionalists (A206/B251–2).

Between the two editions Kant further notes, in explaining why there can be no natural (causal) science of psychology (*MadN* 4:471, *cf.* A381), that we can only make specific, justifiable causal judgments about *spatio*-temporal particulars. Within the sole temporal dimension of inner sense we cannot discriminate any substances and so cannot specify any supposed causal action of (putative) psychological substances or states of affairs. This finding is directly implied by the integrity of the three principles of causal judgment Kant defends in the Analogies; the Third Analogy is expressly and rightly restricted to *spatial* objects and events (A188–9, 211–2, 284/B231–2, 257–8, 275–8, 291, 340–1). Because the first two causal principles can only be used in justifiable causal judgments in conjunction with the third, all three principles are jointly restricted to guiding our judgments about *spatio*-temporal objects and events.

46. Kant's Justification of Our Legitimate Use of These Three Principles of Causal Judgment: A Summary Statement

Kant's analysis of the necessary conditions of our inherently discriminatory causal judgments provides a transcendental proof *for* (not 'from') mental content externalism. Briefly, it is this:

- (1) Each of us is conscious of our own existence as determined in time; *i.e.*, we are aware of ourselves as being aware of some things (in a broad, non-committal sense of 'things') as appearing to occur before, during or after others (B275). Hume's experience of the porter delivering his letter (*T* 1.4.2) commits him to this premiss. (Any presumed sceptic who refuses to answer the question, 'What did you just say?', poses no philosophical challenge.)
- (2) The kind of awareness indicated in (1) is self-conscious (apperceptive) experience, and the 'things' experienced are objects (in a broad, non-committal sense of 'accusatives') of our experience.
- (3) One can be *self*-conscious (apperceptive) only if one can distinguish oneself from something of which one is conscious. One may have sensations without apperception (A90–1, 111–2, 116–7/B122–3), but one can't be self-consciously aware of anything through them unless one can identify oneself *as* the conscious Subject to whom it at least appears that *S/he* senses something. Being apperceptive requires distinguishing oneself from the contents of one's experiences in order to be able to think that *you* have experience of *it*

(self-ascription). Here the ‘something’ of which one is aware is understood as an object of thought, *per* (1).

- (4) One can distinguish between oneself and something of which one is aware only if one can identify that of which one is aware.
- (5) One can identify something (as an object of apperceptive awareness) only if one both correctly characterises it and correctly locates it within space and time. ‘Correctly’ does not require ‘precisely’; (5) is supported by Hume’s problems in his study (*T* 1.4.2) and by Kant’s semantics of singular cognitive reference and his account of perceptual synthesis. (Recall Kant’s warning against conflating sensation and conception, and his recognition of ‘binding problems’ noted above, §§22, 33.3.)
- (6) Correctly characterising something and locating it within space and time requires being *able* to correctly characterise and locate it within (apparent) space and time.
- (7) The order of apprehension of the objects of experience is always successive, regardless of whether the objects experienced or their features are concurrent or successive. On Humean grounds alone we cannot distinguish between these three accounts of the experience of a blue dot on a white field being succeeded by a red dot on a white field:
 - (a) A blue impression being replaced by a red impression;
 - (b) A ball, blue on one side, being instantaneously rotated to reveal its red side;
 - (c) A blue ball transforming into a red disk.³
- ∴ (8) Our apprehension does not, of itself, reveal the objective order of events; the temporal order of the objects (broadly speaking) of experience is not indicated simply by our successive apprehensions (intake) of experience (from (6), (7); *cf.* A182, 194/B225, 219, 226, 243, 257).
- (9) Time itself is not an object of possible experience. (A172–3, 188/B214, 231)
- ∴ (10) Temporal order cannot be determined by reference to time itself (from (9); *cf.* A182, 183, 215/B225, 226, 263, 219, 233, 277).
- (11) Space itself is not an object of possible experience (A172–3, 214, 487/B214, 261, 515).

3. Dear reader, do not cavil about ‘instantaneous rotation’; any such apparatus can be made to be quicker than any human eye, yours included. Slicing and dicing mere logical possibilities thwarts rather than supports philosophical insight and understanding.

- ∴ (12) Spatial order cannot be determined by reference to space itself (from (11)).
- ∴ (13) To be able to identify changes of state, local motions, translational motions, and radical transformations of substance, one must be able to discriminate each of these potential kinds of change (indicated in (7)) from each other in any particular case (from (8), (10), (12)).
- ∴ (14) To be able to discriminate amongst the potential kinds of change indicated in (7) in any particular case, one must be able to identify the spatial order of events by distinguishing it from apparent spatial locations, *i.e.*, from one's subjective order of spatial apprehension (from (8), (13)).
- ∴ (15) To be able to locate objects of experience within time (as occurring before, concurrently with or after others), one must be able to distinguish one's subjective order of apprehension of the objects of experience from the objective, spatial and temporal order of the world (from (5), (7), (8), (14)).
- (16) Sub-argument by *reductio ad absurdum* to show that there are rule-governed relations amongst appearances, to support (17) and the antecedents of (18), (19); (A194–5/B239–40, *cf.* A112):
 - (i) Suppose: there is nothing antecedent to an event appearance, upon which it follows according to a rule.
 - If so: (ii) All succession of perception would be only in apprehension (*i.e.* it would be merely subjective), and would disable us from ever determining objectively which perceptions really precede, which follow and which are concurrent.
 - ∴ (iii) The relations between any two appearances (which would only be distinguishable, if at all, on the basis of apparent sense-content) would be the same; *i.e.*, any sense content one happened to notice would be equally (un)related to any and every other sense content one happened to notice.
 - ∴ (iv) We would lack criteria, guides or indications for grouping our sensory representations together.
 - Thus: (v) We would lack usable criteria for identifying and discriminating objects and events.
 - Thus: (vi) The succession in our apprehension would always be the same;
 - and: (vii) There would be nothing in the appearances which so

determine it that any one specific sequence is rendered objectively necessary.

Thus: (viii) We would have an apparently random play of sensory representations relating to no object.

∴ (ix) That we are so much as putatively aware of objects or events entails that there are (some) rule-governed relations amongst (some) appearances ($\sim(i)$).

∴ (17) If one can distinguish between one's subjective (spatial and temporal) order of apprehension and any objective order of events in space and time then there *is* some objective order of events in space and time (some of which one perceives).

(18) If there is any objective order of events then things determine their own sequence in time and their own locations and motions in space (*cf.* A199/B244).

∴ (19) If things determine their own order in time and space then those things are causally related, so that the antecedent of some event contains the condition of a rule upon which necessarily follows the event (from (17), (18); A144, 189, 191, 195, 198/B183, 236, 240, 243).

(20) If something contains such a condition of such a rule then that thing is a substance, *i.e.*, an enduring thing having properties, some of which are dispositional and causal (*cf.* A183–4, 204/B183, 226–7, 249). (Here the 'things' in a very broad, non-committal sense used in (1) are given a very committed interpretation, in opposition to Hume's impressions and their collections.)

(21) If one can identify events as occurring before, during or after others, then one is able to recognise an objective order of events, that is, to construct knowledge of the objective order of (some) events on the basis of one's experience of them (from (4)–(6), (15), (20)).

∴ (22) One can distinguish the subjective order of apprehension of things from the objective order of the world only if one can correctly use object concepts to identify what one experiences; that is, only if one can distinguish the three different kinds of accounts of the experience described in (7) by using concepts of substance, cause and event (rule-governed causal succession) to judge what one experiences (from (21); *cf.* A195, 199–200/B240, 244–5).

∴ (23) The conditions for the possibility of self-conscious human experience (of identifying our self-consciousness 'as determined in time')

(1)) are likewise the conditions for the possibility of knowledge of objects, including that perceptible, spatio-temporal, causally interacting physical objects exist and that one perceives and identifies at least some of them (from (3)–(6), (22); *cf.* A111, B275, 276.).

- ∴ (24) If a human being is self-consciously aware of him- or herself as minimally determined in time (*per* (1), then *S/he* perceives and has a least some knowledge of spatio-temporal, causally active substances in his or her environs (from (1), (23)).

The strategy of Kant's explication of causal judgment is to show that the fact of occasional perceptual error warrants no generalisation to the possibility of global perceptual scepticism. Instead, for beings like us, apperceptive (self-conscious) awareness of so little as some events appearing to us before, during or after others is only possible for us if in fact we successfully identify at least some perceptible physical objects and events in our surroundings. If so, then the question is which perceptions involve perceptual knowledge, not whether any do. Answering this question is a matter for empirical inquiry, not for transcendental proof.⁴

47. Some Characteristic Responses

Philosophers are prone to some characteristic responses to Kant's analysis. Many of them take the form, 'But might it not possibly happen that . . . ?' Here speaks Cartesian infallibilism: Kant's cognitive semantics shows that mere logical possibilities, expressed by mere logically consistent descriptions (propositions), have no cognitive standing unless and until they are referred (deictically) by Someone to some purportedly relevant particulars (Bxxvi n., 175, 242–3, 267–8, 270, 304, 309–10, 799; above, §26). Hence mere logical possibilities do not undermine cognitive justification within the non-formal domain of empirical knowledge.

Another response is incredulity at the thesis that only in, through and by identifying physical objects and events can or do we concurrently identify and differentiate (at least approximately) the regions they occupy, some of the manifest characteristics they exhibit and some of their causal interactions. How is any such achievement possible? Kant's answer is that this commonsense achievement involves exercising a host of integrated, sub-personal cognitive capacities, principles, concepts and

4. My main focus is on Kant's 'Analytic of Principles'; the points made here are corroborated and re-enforced in Kant's 'Analytic of Concepts', which contains the 'Transcendental Deduction' of the categories; see Westphal (2020d).

judgments (diagrammed in §§30, 43). Modern philosophers often ask *how* we do this in any particular case, and have often supposed that if we cannot answer that specific ‘how’ question, then we do not (or we do not know that we do) achieve all that in any particular case. This is Cartesian internalism speaking, as the expectation of Cartesian self-transparency (‘access internalism’), according to which we ought to be able to identify by introspective reflection all (or at least most) of the main elements involved in any instance of genuine perceptual knowledge, especially concerning its cognitive justification. Kant’s entire transcendental analysis rejects the ‘K-K’ principle (that to know that x , S must know that S /he knows that x), arguing on the above grounds (detailed and defended in the next chapter, ch. 8) that human apperception is parasitic upon perception of one’s surroundings, and that awareness of oneself as (apparently) percipient is parasitic upon at least some veridical perceptions of one’s surroundings.⁵ However catholic such challenges remain today are so many indications of how pervasively contemporary philosophy remains pre-Critical. These questions regarding ‘how’ ask after issues of process, where at issue are instead questions of validity; presuming access internalism conflates Kant’s distinction between subjective and objective deductions, thwarting epistemological self-knowledge and self-understanding.

Through his analysis of these principles of causal judgment and their legitimate cognitive use Kant also purports to prove stronger claims, specifically:

Every spatio-temporal event has a (perhaps complex, jointly) sufficient cause or causes;

Causal determinism holds universally within space and time;

There is some one constant quantum of substance within space and time;

Hylozoism is necessarily false; *i.e.*, matter is intrinsically lifeless, though not causally inert.

These claims cannot be assessed in detail here, but basic flaws in Kant’s proofs may be indicated; they underscore the strengths of his successful proofs (summarised above, and defended in detail in ch. 8).

LaPlace prominently espoused universal causal determinism. However, causal determinism is not entailed by Newtonian mechanics. Causal

5. On Kant’s second transcendental proof of mental content externalism see above, §§7–11, 13.

determinism requires a causally closed system; nothing in Newtonian mechanics requires or entails a causally closed physical universe (Earman 1986, 4–54; *cf.* Lighthill 1986). LaPlace (1847, 7:*vi–vii*; tr. Nagel 1961, 281*n.*4) appears to state universal causal determinism in his famous image of an omniscient mind who could calculate the current physical state of the universe using perfected Newtonian mechanics to predict or retrodict and thereby know all events throughout time and space. However, LaPlace’s formulation is doubly subjunctive: He states that we ‘ought to regard’ (*envisager*) the current state of the universe as effected by its predecessor and as effecting its successor. LaPlace’s counter-factual demon in fact expresses a *regulative* principle of causal and (he supposed) of probabilistic *inquiry*.

A cardinal tenet of transcendental idealism is that the matter of experience is provided us *ab extra*; we only generate or supply the form of experience. An indirect though ineluctable consequence of this is that Kant cannot rule out occasional odd experiences such as a random flash of colour (with no further effects) within a room one occupies. We could locate and date that event approximately, though precisely enough, yet we could not at all explain it. Kant claims that the occurrence of any uncaused event within experience, or likewise any increase or reduction of the total quantity of substance in nature, would disrupt all humanly possible time determination (A188–9, 206/B231–2, 251). That is his transcendental premiss for rejecting such possibilities. However, Kant asserts rather than demonstrates these alleged implications for the very possibility of our determining temporal (and also spatial) sequences (*KTPR* §61.3, *cf.* Harper 2007).

When he distinguished the universal from the specific causal principle, that every physical event has a sufficient external physical cause (or causes) (*MAdN* 4:543), Kant recognised that this latter cannot be proven on transcendental grounds alone, but requires Critical metaphysical explication of the concept of matter as the movable in space (*MAdN* 4:470). However, Kant’s further ‘metaphysical’ argument for this specific principle, by which he purports to rule out hylozoism, ultimately rests neither on transcendental, nor upon Critical metaphysical grounds, but solely upon our *de facto* empirical ignorance of any instance of living matter, *i.e.* a purely material entity which causes some of its own changes, *e.g.*, motions (*MAdN* 4:544). Kant is correct about this empirical claim, but no *empirical* claim can provide a *legitimate* premiss for Kant’s transcendental or metaphysical analyses or proofs.

That Kant fails to demonstrate these very strong claims is salutary. His semantics of singular cognitive reference (§26) reinforces the regulative status of the three key principles of causal judgment, so that the specific causal principle that every physical event has an external physical cause is

indeed a regulative principle of all causal inquiry, whether commonsense, diagnostic, forensic or scientific. Indeed, Kant's semantics of singular cognitive reference entails that we can only justifiably use the general (transcendental) causal principle by using the specific ('metaphysical') causal principle, that each spatio-temporal event has some sufficient, external, spatio-temporal cause(s) (*KTPR* §62). Furthermore, Kant's cognitive semantics entails that causal *knowledge* is only obtained by successful causal explanation of specific events, or specific classes of events. Consequently, the key premiss of the debate about causal determinism and human freedom, that each human action *is* fully causally determined physicalistically, *is not* known because it is not cognitively justified; nor is sufficient cognitive justification of this premiss remotely in the offing (see below, §§74–90).

Nevertheless, the principles of causal judgment Kant justifies in the Analogies of Experience retain their constitutive role in this Critical regard: If we human beings failed to make any approximately correct causal judgments at all, we could not distinguish ourselves from anything we experience, nor could we be aware of various events so much as appearing before, during or after others. Accordingly, we would fail to achieve apperception. How extensive such veridical judgments must be cannot be determined *a priori* by transcendental analysis. Once we achieve apperception by causally discriminating at least some objects and events in our surroundings, it is then a regulative issue of causal inquiry into nature to determine how extensive may be the causal connections amongst the phenomena we experience.

Kant's cognitive semantics directly and strongly supports Newton's methodological Rule 4 of scientific explanation, thus undergirding Newton's causal realism about gravitational force (Harper 2011; below, §§65–73). Standard objections to scientific realism appeal to mere logical possibilities, an appeal sanctioned by Tempier (1277), but rightly ruled out by Kant's cognitive semantics, which strongly supports Kant's fallibilist account of empirical judgments and knowledge. The next chapter examines more thoroughly and seeks to defend Kant's main analyses and proofs of these strong, philosophically important theses in the Transcendental Analytic of the *Critique of Pure Reason*.

8 How Does Kant Prove We Perceive, Not Merely Imagine, Physical Objects?

48. Introduction

In the ‘Refutation of Idealism’ and his notes to it in the 1787 Preface (*Bxl–xlin.*, B276–7*n.*), Kant frames his anti-sceptical issue in terms of proving ‘the reality of outer sense’, which requires proving that we perceive, not merely imagine, physical objects in space and time. Kant’s contemporary critic Maimon (1965, 5:377–8, 386) reasserted the Humean objection, that the appearance of physical objects in space and time is a deceptive illusion produced by our imagination. The same kind of objection is made today, *e.g.*, by Stroud, both to Kant and to his recent expositors. Maimon’s objection rests on serious misunderstandings of Kant’s analyses and proofs,¹ and Stroud and Rorty are correct that recent ‘analytic transcendental arguments’ fail to rebut (in effect) Maimon’s objection.²

Asking *how* Kant proves that we perceive rather than merely imagine physical objects in space and time, presumes that Kant *does* prove this. Indeed so. Affirming this, however, does not presume that Kant proved

1. *E.g.*, his writings show no trace of Kant’s key doctrine of the transcendental unity of apperception. I found none, and neither did Engstler (1990), 94–5, 122–3.
2. Recent reconstructions fail to engage the core of Kant’s proof, because they focus on our possessing the concept ‘physical object’, or on our using it, though without requiring our *justified* or even *correct* use of it. Strawson (1966), Rorty (1970, 222, 224; 1971, 3–14) and Stroud (1977b, 106, 110; 2017) focus too much on concept possession, and specify their ‘application’ too vaguely, to capture the character and point of Kant’s transcendental proofs. Similarly, Bennett’s ‘Objectivity Argument’ focuses on the ‘application’ of concepts in a way that reflects rather than rejects Hume’s analysis in ‘Of Scepticism with regard to the senses’ (*T* 1.4.2) because in Bennett’s (1966, 202–14; 1979, 52–5) argument their ‘application’ does not require their correct (truthful) application – to say nothing of cognitively justified, sufficiently accurate use! Ironically, these so-called ‘analytic transcendental’ arguments make the same mistaken presumption as pre-Critical rationalism, that if we happen to *possess* a concept, we can also without further ado *use* it in genuine cognition of objects or beings other than ourselves. *This* presumption was rejected by Kant, for reasons summarised in his Thesis of Singular Cognitive Reference (above, §26). On the inadequacy of ‘analytic transcendental arguments’, see Grundmann (1994), Bell (1999), *KTPR* §§1–3.

it in precisely the way he proposed. I contend that Kant's proof succeeds in ways, and to an extent, that even Kant did not appreciate. In part, this is because his proof need not appeal to transcendental idealism. Instead, parts of Kant's proof refute Kant's key arguments for transcendental idealism. This chapter epitomises the key steps in Kant's unofficial though sound transcendental proof for the conclusion of his 'Refutation of Idealism', namely, 'The mere, though empirically determined consciousness of my own existence proves the existence of objects in space outside me' (B275, *GS* 3:191.18–20).

49. Kant's Transcendental Focus: Epistemology for *Homo sapiens sapiens*

The first important point, neglected by recent reconstructions, concerns method. Recent 'analytic transcendental arguments' are, of course, *analytic*; they attempt to justify substantive, anti-sceptical conclusions by analysing the possibility of self-conscious experience. Yet Kant stresses that *no* analytic argument can justify any synthetic proposition *a priori*.³ If recent notions of philosophical analysis are more expansive than Kant's, they are not expansive enough to support Kant's 'Refutation of Idealism' (*cf.* above, §§27, 46).

Furthermore, 'analytic transcendental arguments' take as their *analytandum* the possibility of consciousness *per se*. All such arguments fall to Rorty's objection, that

Arguments of the Strawsonian type rest on considerations of which words can be understood independently of which other words. The relevance of these considerations vanishes if we admit the possibility of a being who could experience something as an X but could not use the word 'X' nor any equivalent expression. (Rorty 1970, 224, *cf.* 231)

However, the possibility of Rorty's imagined being would not perturb Kant at all. Kant expressly aims at identifying the transcendental conditions necessary for the possibility of *human* self-consciousness, and more particularly, the transcendental conditions required for us to be aware of our existence as determined in time, that is, to be aware of some events appearing to happen before, during and after others (apperception).⁴ To do this, Kant engages us with a series of wildly counterfactual thought experiments designed to bring us to recognise

3. *KdrV* B263–5, 810, *GS* 3:184.26–185.19, 509.24–510.25; *cf.* Baum (1986), 1, 175–81.

4. More specifically, Kant's analysis seeks the transcendental conditions for the possibility of apperceptive experience for finite beings possessing spatio-temporal forms of sensory

some of our key cognitive capacities, and their attendant *incapacities*. Appreciating and assessing these thought experiments involves ‘transcendental reflection’ (above, ch. 4).

50. The Spatio-Temporality of Human Experience and Singular Cognitive Reference

Kant’s analysis of space and time stresses the spatio-temporality of our forms of intuition and our use of concepts of space and time in order, *inter alia*, to make an important semantic point about determinate reference, that is, deictic reference to any one particular, single item. Kant stresses our incapacity to *represent* to ourselves the absence of space and time. Nor can we perceive space or time as such, though of course we can *conceive* of their being void, or even of their absence.⁵ Kant’s point concerns a key feature of the representational capacities of *human beings*, of *our* representational capacities. Whether other beings (*e.g.*, of the kind Rorty may imagine) have different representational capacities is irrelevant to understanding *human* knowledge. The positive implications of Kant’s observations about our spatio-temporal representational capacities concerns an important semantic and cognitive insight that undergirds Kant’s insistence on the distinction between, and the interdependence of, sensibility and understanding in human knowledge of the world.

Recall the key semantic point, recognised by Kant, is that definite descriptions do not suffice for knowledge of particulars. Putative definite descriptions aren’t self-identifying: They don’t intrinsically reveal whether they are empty, uniquely satisfied or ambiguous. Whether a description is empty, definite or ambiguous depends equally and independently upon the world. For human beings, the only way to pick out spatio-temporal particulars is by sensing them (directly or indirectly). For us human beings, singular cognitive reference requires singular sensory presentation. Semantic reference to particulars requires token indexicals in some form, which can play their role in human cognition only in perceptual circumstances (which may include observational instruments). Perceptual circumstances, for human beings, are spatio-temporal circumstances. Identifying spatio-temporal particulars by sensing them involves, in part, identifying at least approximately the spatio-temporal regions they occupy.⁶

receptivity and a discursive understanding rooted in 12 formal aspects of judging, though human beings are the only instance of such beings we know.

5. *KdV* A19–20, 22–3, 31, 172–3, 188, 214, 487/B34, 37–8, 46, 207–8, 214, 231, 261, 515.

6. The cognitive insufficiency of descriptions theories of reference was Kant’s point of departure for the whole *Critique*; see Melnick (1989), 1–5, 25–6.

Our ineliminable recourse to spatio-temporal specification is reflected by recent analyses of the ‘character’ of demonstrative terms, where such terms can only be used or understood by understanding the speaker-centred spatio-temporal reference frame they implicitly presuppose.⁷ Conversely, for us singular cognitive reference also requires predication, the ascription *to* any particular we sense of at least some, at least approximately identified characteristics within some, at least approximately specified, deictically indicated spatio-temporal region; predicative ascription and spatio-temporal determination are interdependent achievements (Evans 1975). Kant’s account of the conjoint cognitive functioning of human sensibility and understanding reaches this same conclusion (below, §67).

51. Two Transcendental Proofs of Mental Content Externalism

Kant’s proof succeeds to a greater extent than even he appreciated because it provides two sound, genuinely transcendental proofs of (not arguments ‘from’) mental content externalism. The first proof turns on these considerations: Kant’s ‘formal’ idealism requires that the matter of experience be provided us *ab extra*. This is a transcendental material condition of self-conscious experience (Allison 1983, 250). Another transcendental material condition of self-conscious experience is the transcendental affinity of the sensory manifold (A112–4, B123). Kant notes that any world in which human beings are capable of apperceptive experience is one that must provide us some minimal, to us recognisable degree of regularity and variety amongst the contents of our sensations. In any world lacking this minimum degree of regularity and variety, we could make no judgments, and so could not identify objects or events, and so could not distinguish ourselves from them, and so could not achieve apperception: we could form *no* thoughts to ascribe to ourselves.

In this connection Kant argues that a complete sensibility and understanding, capable of associating perceptions, does not of itself determine whether any sensory appearances or perceptions it has are in fact associable (A121–3, B123). If they weren’t, there may be fleeting episodes of empirical consciousness (*i.e.*, random sensations), but there could be no integrated, and hence no apperceptive, experience. In part this would be because those irregular sensations would afford no basis for developing empirical concepts nor for using categorial concepts to individuate and identify objects. (There could be no schematism, and hence no use, of Kant’s categories in a world of utterly chaotic sensations.) In this regard, the necessity of the associability of the sensory manifold is a *conditional*

7. Kaplan (1989), Perry (1979), Evans (1982), ch. 6.

necessity, holding between that manifold and any self-conscious human subject. Necessarily, if a human subject is apperceptively aware of any particular object (or event, *etc.*) via a manifold of sensory intuition, then the content of that manifold is associable. The associability of this content *is* its ‘affinity’. Because it is necessary for the possibility of apperceptive experience, such affinity is transcendental.

Kant makes the transcendental status of this issue plainest in the following passage, though here he speaks of a ‘logical law of genera’ instead of the ‘transcendental affinity of the sensory manifold’:

If amongst the appearances offering themselves to us there were such a great a variety – I will not say of form (for they might be similar to one another in that) but of content, *i.e.*, regarding the manifoldness of existing beings – that even the most acute human understanding, through comparison of one with another, could not detect the least similarity (a case which can at least be thought), then the logical law of genera would not obtain at all, no concept of a genus, nor any other universal concept, *indeed no understanding at all would obtain*, since the understanding has to do with such concepts. The logical principle of genera therefore presupposes a transcendental [principle of genera] if it is to be applied to nature (by which I here understand only objects that are given to us). According to that [latter] principle, sameness of kind is necessarily presupposed in the manifold of a possible experience (even though we cannot determine its degree *a priori*), because *without it no empirical concepts and hence no experience would be possible*. (A653–4/B681–2, *GS* 3:433.14–29; emphases added)

Despite Kant’s shift in terminology, it is plain that the condition satisfying the ‘logical law of genera’ at this fundamental level is that which satisfies the ‘transcendental affinity of the sensory manifold’: In the extreme case suggested here by Kant, where there is *no* humanly detectable regularities or variety within the contents of our sensory intake – ‘transcendental chaos’ – there could be no human thought, and so no human apperception, at all.⁸ Kant establishes this necessary transcendental condition

8. Kant’s argument about this ‘Logical Law of Genera’ closely parallels his argument about the transcendental affinity of the sensory manifold: both concern the recognisable orderliness of what we sense, and the constitutive necessity of that orderliness for the very functioning of our understanding. This functioning is required for any synthetic unity of apperception, and thus is required for any analytic unity of apperception, that is, for the possible occurrence of any human ‘I think . . .’. There is, however, a difference between Kant’s two cases: The Logical Law of Genera concerns *objects*, whilst Kant usually states transcendental affinity of the manifold of sensory intuition in terms of the contents of sensations (but *cf.* A90–1/B122–3). Plainly, if the Logical Law of Genera is

of self-conscious human experience by identifying a key cognitive incapacity of ours: Our inability to apperceive, even to think, even to generate or employ concepts, in a world of transcendental chaos. We can recognise Kant's insight only by carefully considering the radically counter-factual case he confronts us with: By recognising how utterly incapacitating transcendental chaos would be for our own thought, experience and apperception.

This transcendental proof establishes a conditionally necessary constraint on the sensory contents provided to us by whatever we experience. Below a certain (*a priori* indeterminable) degree of regularity and variety amongst the content of our sensations, our understanding cannot make judgments; consequently we cannot under that condition be apperceptive. Above this minimal level of regularity and variety, there is then a

satisfied, so is the transcendental affinity of the manifold of sensory intuition. However, perhaps there could be transcendental affinity amongst the manifold of sensory intuition only to the extent that there were humanly detectable regularities and variety amongst sensory contents, without our being able to identify objects in nature. To this extent, the Logical Law of Genera is a stronger principle. The extent to which the satisfaction of these two principles could in fact diverge is difficult to determine. Kant claims that failure to satisfy either principle has the same consequence: human understanding simply could not function. In that case, there could be no synthetic unity of apperception, and so no analytic unity of apperception, and so no self-consciousness of the form expressed by 'I think' (B131–9). The difficult point is to determine whether human understanding could function whilst using only the categories of quality and quantity; only judgments using these two categories could potentially be made in circumstances that satisfied the transcendental affinity of the manifold of sensory intuition, though not the Logical Law of Genera. Resolving this issue would require minute investigation of Kant's Transcendental Deduction. Fortunately, two central points suffice here. First, both principles, the transcendental affinity of the sensory manifold and the Logical Law of Genera, provide transcendental proofs of mental content externalism, though of slightly different kinds. Either is a major anti-Cartesian result. Second, Kant's anti-sceptical transcendental proof of realism *sans phrase* needn't appeal to the bare possibility of the analytic unity of apperception. It can appeal to the perhaps stronger, certainly more explicit premiss of Kant's 'Refutation of Idealism', that we are aware of our own existence as empirically determined in time (B275).

The substantive difference between Kant's two principles can be clarified by considering why he uses two designations for what is at bottom the same principle. The transcendental affinity of the sensory manifold concerns the bare minimum level of regularity and variety amongst the contents of our sensations required to enable us to identify kinds or genera at all. Once satisfied, there is then a reflective issue, addressed by Kant's Transcendental Law of Genera, concerning the extent to which the kinds or genera we identify can be systematised. Thus satisfying the transcendental affinity of the sensory manifold is a precondition for our generating any empirical intuitions at all, whilst the reflective issue addressed by Kant's Transcendental Law of Genera presumes that we have sufficiently coherent empirical intuitions to identify spatio-temporal objects or events, where we try to systematise the characteristics of them we have identified. This contrast, however, did not preclude Kant from highlighting, in the passage just quoted, the transcendental, constitutive issue of the affinity of the sensory manifold whilst explaining the status of his transcendental law of genera.

reflective issue about the extent to which our experience of the world can be systematised. (This point about our understanding making judgments holds, *mutatis mutandis*, also for the sub-personal sensory-perceptual syntheses effected by the transcendental power of imagination; *per* Kant's view of the two-fold use of the categories; above, §27.3.)

This condition is peculiar because it is both transcendental and formal, yet neither conceptual nor intuitive, but rather material. The transcendental affinity of the sensory manifold is *transcendental* because it is a necessary *a priori* condition of the possibility of self-conscious experience. It is *formal* because it concerns the orderliness of the 'matter' or content(s) of sensation(s). However, ultimately it is satisfied neither by Kant's *a priori* intuitive conditions of experience, space and time as forms of human sensory receptivity; nor by the *a priori* conceptual conditions of experience, our categories of judgment plus the two *a priori* concepts of 'space' and 'time'. As Kant twice acknowledges, this condition (affinity) is satisfied (if ever) by the 'content' or the 'object' of experience (A112–3, A653–4/B681–2). Because the matter of sensation is occasioned in us *ab extra*, we do not and cannot generate it. Consequently, we also cannot generate or otherwise insure any degree of regularity or variety amongst the contents of our sensations. The contents of our sensations, along with their recognisable similarities and differences, must be provided us by something other than ourselves. Consequently, this is a genuinely transcendental proof of mental content externalism: We *homo sapiens sapientes* cannot be apperceptively aware of any purported 'mental' contents without being aware of at least some 'mental' contents that concern and derive from something other than and outside ourselves.⁹

52. Kant's Paralogisms Proscribe Causal Judgments About Merely Temporal Phenomena

Kant's semantic point about singular cognitive reference, and his first proof of mental content externalism, are reinforced and augmented by his proof that we can only make legitimate causal judgments about *spatio-temporal* particulars. This argument provides a second, stronger transcendental proof of mental content externalism. It proceeds in two steps: The 'Paralogisms of Rational Psychology' prove that we cannot

9. Thus transcendental proofs can justify conclusions much stronger than Rorty (1970, 236; 1971) recognised; he claims that the most they can show are interrelations amongst thoughts. Part of why Kant failed to recognise his own achievement in this regard is that the transcendental affinity of the sensory manifold is a formal, transcendental, though *material* condition for the very possibility of self-conscious experience. The architectonic of Kant's transcendental idealism does not provide for such conditions. Significantly, the later Wittgenstein makes the same case for mental content externalism, though without invoking Kant's specific cognitive psychology; *per* above §§7–11.

make any legitimate causal judgments about merely temporal events or phenomena, whilst the ‘Analogies of Experience’ prove that we can make legitimate causal judgments only about *spatio*-temporal particulars.

Kant contends that causality is strictly related to substance.¹⁰ Kant argues in the Paralogisms (in both editions) against our knowledge of any substantial self, and he argues that in psychology we have no evidence of any extended substance (A381, B291, 293–4). If we have no evidence of a substantial self, then none of us can use any of the Principles of the Analogies to make (legitimate, constitutive) judgments about ourselves. Thus we cannot justify any determinate (constitutive) causal judgments within introspective psychology because we cannot identify any causally active substance(s) within the sole form of inner sense, namely time.

The main target of the Paralogisms, to be sure, is traditional rationalist psychology,¹¹ but even when stating this, Kant indicates an empirical aspect of his criticism: The concept of a simple nature cannot be justifiably used as a predicate in any objectively valid experiential judgment (A361). Kant quickly elaborates the empirical aspect of his criticism by criticising *any empirical use* of the category of substance regarding either oneself or one’s psychological states: The only empirically usable concept of substance is the permanence of an object given in experience, but no such permanence can be demonstrated (indicted, identified) in the case of the ‘I’ or its merely internal sensory or intellectual states (cogitations) (A349–50). Kant argues that there can be no (justifiable) synthetic *a priori* principles about the soul *at all, of any kind*. Any rational doctrine of the soul, whether *a priori* or empirical, purports to make synthetic judgments *a priori*. Such judgments require intuitions as a judgmental connecting link, but there are no suitable intuitions to be found within inner experience,¹² because we intuit nothing permanent or abiding within inner sense.¹³ Consequently, rational psychology is not a doctrine, but only a discipline limiting our cognitive aspirations.¹⁴

53. Causal Judgments Are Restricted to *Spatio*-Temporal Substances

An important yet neglected feature of Kant’s analysis of legitimate causal judgments is that we can only make such judgments (legitimately) about *spatio*-temporal substances. The importance of being able to identify ‘permanent’ or abiding substances, that is, particulars which persist

10. *KdrV* B183, A182–4/B225–7, A204/B249; *GS* 3:137.30–138.4, 163.1–32, 176.19–20.

11. *KdrV* A342/B400, B405–6; *GS* 3:263.16–20, 266.16–25.

12. *KdrV* A398–9, *GS* 4:248.28–249.11; B421–2, *GS* 3:275.13–20.

13. *KdrV* A366, *GS* 4:230.18–28; *cf.* A349–50, A361, A381, A398–99, A402–03, *GS* 4:221.1–15, 227.21–28, 251.12–20; B420, *GS* 3:274.15–24.

14. *KdrV* B421, *GS* 3:274.36–275.4; *cf.* B420, *GS* 3:274.24–26, *KdU* §89, 5:460.20–32.

through changes, and why we can only identify such particulars within space and time conjointly, are made evident by this feature of Kant's 'Analogies of Experience'. Kant's three Analogies form a tightly integrated set of mutually supporting principles, each of which can be used only together with the other two.¹⁵ The First Analogy concerns persistence of substance through changes of its states (transformations); the Second Analogy only concerns rule-governed causal processes (changes of state) within any *one* substance; only the Third Analogy concerns causal interaction *between* any two (or more) substances. Kant is express about this (B111, *KdU* 5:181). Hence only with the Third Analogy (taken together with the first two) does Kant respond directly to Leibniz's and Hume's scepticism about our knowledge of causal powers in nature, because only so does Kant so develop his analysis of perceptual-causal judgment to defend a transeunt account of causality, the view that something in a causally active substance goes out beyond that substance to influence or causally affect something else, that is, to effect a change in a distinct substance. In brief, this is the causal principle that any physical event has (a) sufficient, efficient, external cause (or causes).¹⁶ Despite the complexities of these issues, Kant's key point about the necessarily conjoint use of these three principles of causal judgment may be summarised briefly.

Determining (specifying) whether we witness either co-existence or succession requires discriminating the one from the other, and both determinations require that we identify objects which persist through both the real and the apparent changes involved in the sequence of appearances we witness. We cannot directly perceive or ascertain either time or space as such, and the mere order in which we apprehend appearances (take in sensory stimulations) does not suffice to specify any objective order of objects or events. Consequently, given our cognitive capacities, we can determine which states of affairs precede, and which coexist with, which others only if we identify enduring substances which interact, thus producing changes of state in one another. Identifying enduring substances is necessary for us to specify the variety of spatial locations objects or events occupy, to specify changes of place (both local and translational motion), to specify non-spatial changes (transformations) objects undergo, and to specify the relevant period of time in which we observe any of these scenarios. To make any one such identification requires discriminating the present case from its (causally) possible alternatives, which requires conjoint use of all three principles defended in the Analogies. Failing ever to employ these principles successfully would leave us, as Kant says in the

15. Guyer (1987), 168, 212–4, 224–5, 228, 239, 246, 274–5; *KTPR*, §§36–39.

16. I retain the archaic spelling of 'transeunt' because the *O.E.D.* indicates it is used precisely and exclusively in the sense here indicated.

A Deduction, with ‘nothing but a blind play of representations, *i.e.*, less than a dream’ (A112, *GS* 4:84.30–1).

The relevant ‘success’ is episodic, and so distributed amongst apperceptive episodes of perceiving at least some of one’s surroundings, with sufficient accuracy and justifiedness to discriminate and identify at least approximately some particular(s). Kant’s three causal *principles* are *general* principles, but these principles guide and contribute to informing particular perceptual-causal judgments about one’s perceptible surroundings. The successful, causal-perceptual discriminatory use of these three integrated causal principles admits considerable latitude about how precise, accurate or justified any of these judgments may be. Commonsense approximations suffice to locate ourselves within our surroundings, sufficiently to discriminate some features of some of our surroundings, and to discriminate these *as* features of our surroundings distinct to ourselves and to our own perceptual-motor perceiving of them. For this reason, picking away at counter-examples to Kant’s *principles*, taken solely as propositions, is beside the point, all the more so once we have relinquished infallibilist presumptions about cognitive justification within the empirical domain. Principles *guide* judgment; they do not suffice to specify judgments. (Kant’s Critical discipline also extends to logic- and locution-chopping; exacting explications, *yes*, but these must be assessed by giving them a real use; *per* above §2, *cf.* below, §61.)

That Kant is correct about these important theses can be seen by recalling Hume’s perplexities in ‘Of Scepticism with regard to the Senses’ (*T* 1.4.2) and some important facts Kant notes about the requirements for our distinguishing the subjective order of apprehension from the objective order of events. Kant notes that apprehending the manifold features of a house is successive, although the features of the house exist concurrently (B162, A190/B236). Hume concurs, for when a porter delivered him a letter, he recognised that the porter climbed stairs that must still exist beyond the bounds of Hume’s study, and that the door to his study must still exist behind his back, if he heard the porter’s knock and the door’s squeaky hinge as the porter entered (*T* 1.4.2.20). The implications of Hume’s observations are manifold.¹⁷

Note first that Hume’s observations acknowledge that we ascribe both perduring existence and causal properties to ordinary physical objects. Second, these ascriptions require concepts that cannot be defined in accord with Hume’s own concept-empiricism, namely the concepts ‘cause’ and ‘physical object’.¹⁸ These concepts are thus *a priori*. In view

17. For discussion of this section of Hume’s *Treatise*, see Wolff (1966), Stroud (1977a), 96–117; Smith (1941), 443–94; and Westphal (1998a), §4.

18. Regarding ‘cause’, see B240–1 and Beck (1978), 121–9; regarding ‘physical object’, see Hume (*T* 1.4.2.23–28). Stroud (1977a, 131) claims that Hume’s appeal to propensities

of wide-spread recent rejection of concept-empiricism, note that Kant's analysis shows that these are very special *a priori* concepts, because their legitimate use is required to be at all apperceptive, and so to be able to learn, define or acquire any concept which requires experience for its meaning or acquisition (*i.e.*, any and all empirical concepts). In brief, Kant's Categories count as what may be called *pure a priori* concepts.¹⁹

Third, Hume notes that ascribing continued existence and causal properties to physical objects outstrips our sensory observations, as Hume understands them (*T* 1.4.2.20, .22, *cf.* .56). Nevertheless, ascribing these characteristics to physical objects is necessary to preserve the coherence of our beliefs about the world (*T* 1.4.2.18–21). Hume finds such 'coherence' too weak to justify trusting his senses (*T* 1.4.2.56). Hume overlooked what Kant saw, namely, the coherence of our beliefs about our surroundings is only the tip of the issue. At stake is their very existence, their very possibility.²⁰ Without the capacity to make causal judgments, and without some sufficient success in making some such judgments, we could never 'derive' (as Kant says, and as Hume accurately reported doing!) the subjective order of apprehension from the objective order of the world (A193/B238), nor could we distinguish between our subjective order of apprehension (sensory intake) and any objective order of spatio-temporal particulars and the events (or processes) in which they participate (A193–5/B238–9), including those events called 'perceiving' them. We could not identify sensed objects at all, not even putatively; we could

can be eliminated by replacing such talk with conditional regularities about the occurrence of certain 'perceptions' in the mind, given certain series of other perceptions. However, at best this provides only occasioning causes of the use of the concept 'body', but accounts neither for the *definition* nor the origin of that concept. Gram (1983, 366) overlooks Hume's recognition of the shortcomings of general principles of psychological association in accounting either for our concepts of and our beliefs about causal relations amongst physical objects. Rorty (1970, 209) likewise overlooks the problems Hume found in his study. Hume awoke Kant from his dogmatic slumbers only because he re-thought Hume's first *Enquiry* deeply enough to recognise its implications for causality and especially for physical objects, which Hume developed only in the *Treatise* (1.4.2). It behooves Kant's critics to study Hume with equal care.

19. Designating the categories as 'pure' *a priori* concepts is convenient short-hand, and means no more than what is indicated here: that their competent use is required for us to discern, individuate and identify particulars or their features (*per* Evans 1975) so as to be able to learn, define or acquire richer, specifically empirical concepts. Cramer (1985) is right that Kant's central problem in *KdV* concerns *impure* judgments *a priori*. Though Kant repeatedly proclaims his interest in specifying what pure reason can ascertain altogether independently of experience, his findings are that the sole domain of pure reason is purely formal axiomatics; even mathematics (he holds) requires constructions, which require time, if not also space.
20. This central feature of Kant's transcendental proofs is omitted by Körner (1966), (1969); Rosenberg (1975), (1979); and Stern (1999b); it is noted by Cassam (1987, 355), and Stroud (1983, 429; 1994b, 248).

not identify the door on the basis of its squeak, nor could we identify ourselves as being aware of the door on the basis of its squeak. In practice Hume clearly, accurately and unfailingly distinguished the subjective order in which his sensory experiences occurred from the objective causal order of objects and events which gave rise to his experiences, though his epistemology cannot account for this ability. Kant's transcendental proofs concern, not merely the possession of key concepts, but their use in legitimate (that is, true and justified, if approximate) cognitive judgments of these sorts. In this regard, motions of our own bodies alter our perspectives in ways required to distinguish the objective order of events from the subjective order of apprehension, as noted in Kant's examples of viewing a house (B162, A192/B237–8) or the 'rising' moon (B257) (see below §57). Because we can only use the categories of 'cause' and 'substance' to judge by discriminating spatial objects and events, and because we can identify a spatio-temporal order of events only by correctly using the concepts of 'cause' and 'substance', by which alone we can distinguish the subjective order of apprehension from the objective order of events (even when these sequences are identical), the objective order of events we identify must be a causal order of perceptible *spatio*-temporal substances.

Throughout, 'correct', 'true' and 'justified' can all be approximate, so long as they suffice to discriminate and identify at least some particulars and events, however approximately or episodically. Kant's Thesis of Singular Cognitive Reference; the five distinct proto-cognitive achievements it identifies in connection with reference, ascription, accuracy and cognitive justification; and his subtle account of cognitive judgment and the self-assessment rational judgment involves, afford cognitive *ideals* and standards of cognitive assessment, rather than bivalent criteria of knowledge. These are important contributions to sound and sober epistemology, however disappointing they may be to those trained to prefer disputation to insight and understanding.

54. The Transcendental Character of Kant's Proofs

In the previous two sections (§§52–3) I have alluded to the transcendental character of Kant's proofs of mental content externalism, and his proof that we can only make legitimate causal judgments about spatial particulars, without yet elucidating their transcendental character. Their transcendental character concerns their status as formal cognitive conditions for the very possibility of apperceptive human experience, which can be known *a priori*, and from which follow other *a priori* knowledge (B25, 40). Both of these features stem from their fundamental roles in our self-ascription of our own experiences. Famously, Kant argues that each of us must be able to identify our representations as our own, 'for otherwise I would have as multicolored, diverse a *self* as I have representations

of which I am conscious' (B134, GS 3:110.7–9; cf. A111, 112). Kant's term "*verschieden*" ('diverse') connotes either qualitative or quantitative distinctness. Whilst not as strong, say, as "*verteilt*" ('distributed') Kant uses it here in contrast to the analytic unity of apperception, to emphasise the lack of such unity in the indicated circumstance, in which we would have, at most, only flickering moments of sensory consciousness, though (Kant argues) no apperception (*per* §52). Beforehand he says this directly, using a stronger term: 'For the empirical consciousness which accompanies diverse (*verschiedene*) representations is in itself dispersed (*zerstreut*) and without connection to the identity of the subject' (B133, GS 3:109.16–18).

At an utter minimum, Kant's point is that, because sensory representations are fleeting, their mere occurrence does not suffice for us to identify or to recall them *as* our own. Each sensory representation is at best only a momentary bit of sensory consciousness (a mental state, but not for that reason an apperceptive state), and can neither provide nor serve as a consciousness (much less a self-consciousness) of any *plurality* of sensory representations. Being able to recognise any plurality of sensory representations *as one's own* requires intellectual recognition of that plurality of representations, and of oneself *as* one apperceptive Subject who is aware of them. The recognition of such sensory representations as one's own requires sensory *integration*, which itself cannot be effected or afforded merely by sensations distributively. This is why Kant takes our most basic forms of judging as his clue to our most basic categories of conceptual judgment, though assigning sensory synthesis to the sub-personal, transcendental power of imagination, structured by the same forms of judging and categorial concepts (diagrammed above, §43). Being able to recognise a plurality of representations *as one's own* is necessary to gain any stable knowledge, even stable beliefs about or stable appearances *of* anything we experience. The analytic unity of apperception, expressed by the 'I think', requires for its possibility the synthetic unity of apperception through which a plurality of sensory states are integrated together and recognised *as one's own* (B131–9) whilst perceiving and identifying something within one's surroundings. The transcendental affinity of the sensory manifold, *i.e.*, a humanly detectable degree of regularity and variety amongst the contents of what we sense, is a minimum condition for the possibility of any synthetic unity of apperception. Transcendental chaos (above, §51) blocks the analytic unity of apperception because it blocks the synthetic unity of apperception. Transcendental affinity of the sensory manifold is thus a minimal condition required for our understanding to function, to develop or use concepts at all, including their use in ascribing to ourselves even apparent sensory experiences.

The kind of recollection of our own sensory states required by Hume's account requires more than that some current state (a sensory impression *qua* 'perception' within one's own 'bundle') be caused by some prior,

putatively recollected state. It requires that our present recollection be, and *manifestly* be, of a prior state of *one's own*. Hume's causal account of memory fails to meet this requirement.²¹ This kind of recollection is required both to recognise any stable object or of any process (whether motion or transformation) over any period of time, however brief, as well as to recognise any personal history of experiences, however brief or extended, however haphazard or integrated it may be. Kant's point is that the mere occurrence of a recollection-impression within a bundle, or the mere inherence of a representational state, the object of which happens to be past, within a Cartesian mental substance, do not suffice, not for beings like us, to identify those states *as* our own, so to be able to base cognitive judgments on them.

The thought experiment signalled here by Kant's 'otherwise' (B134) is to reflect on the implications of our only having fleeting episodes of empirical awareness, *i.e.* sensations, or analogously Humean sensory impressions, which would indeed enable us only to have 'as multicolored, diverse a *self* as I have representations of which I am conscious'. Reflecting on this wildly counterfactual state of affairs underscores and should support our endorsing Kant's conclusions that the analytic unity of apperception is necessary for any empirically determinate self-conscious experience we enjoy, and that this analytic unity of apperception is rooted in the synthetic unity of apperception through which alone we can grasp various sensory representations as belonging together in the perception of any one object or event, and through which alone we can grasp various sensory perceptions of objects or events *as* belonging to our own first-person experience and its history, including our episodic history which *is* our current perceptual episode (B131–6).

The fundamental role of this synthetic unity of apperception for the possibility of the occurrence of any analytic unity of apperception, for any instance of the 'I think', is supported by Kant's proof of the transcendental affinity of the manifold of sensory intuition (above, §51) and his proof that legitimate causal judgments can only be made about *spatio-temporal* substances (§§52, 53). If either condition is unsatisfied, no human 'I think' could occur, because conditions required for any synthetic unity of apperception would not be satisfied, in which case no apperception, no analytic unity of self-consciousness, could occur. Consequently, both conditions are genuinely transcendental.²² The fact

21. Stroud (1977a), 124–6, 135–40; Yandell (1990), 108–10. Very briefly, the causal chain leading to any putative Humean 'recollection' may pass through various bundles of perceptions, none of which is a person, or even one's own person (bundle). This same problem thwarts Hume's account of the idea of time (Westphal 2013a), without which there can be no memory *as* memorial.

22. It may appear that §20 of Kant's *Transcendental Deduction* tries to establish conditions for the possibility of human *self-consciousness* independent of and prior to the

that making causal judgments requires being able to identify particular causally active substances in space thus provides a second, stronger proof of mental content externalism. Understanding why this is the case again raises issues central to Kant's cognitive semantics.

55. Realising Kant's Semantics of Singular Cognitive Reference

Kant's sophisticated semantics of singular cognitive reference is based on his Table of Judgments. Fortunately, Kant's completeness proof for the Table of Judgments has been brilliantly reconstructed by Michael Wolff (1995, 2009b, 2017), which enables us to reconsider Kant's semantics and Transcendental Deduction much more carefully than heretofore.

Kant holds that our pure *a priori* concepts, the categories, have a logical significance independent of their schematisation. This logical significance, catalogued in the Table of Judgments,²³ is enriched into a transcendental significance by so specifying the pure concepts to pertain (to be connect-able, referable) to the sensible manifold provided by our forms of intuition.²⁴ This is the topic of Kant's 'Schematism of the Categories'. However, this transcendental significance of the schematised categories does not suffice for determinate cognitive reference to particulars. Determinate cognitive reference to particulars also requires either of two further steps. The step relevant here is this: The categories must be further, more selectively 'schematised' in order to refer them to possible particular sensory appearances (distributively), and thereby to obtain singular determinate reference only in connection with singular sensory

conditions for the possibility of self-conscious human *experience*. §20 focuses only on conceptual transcendental conditions, and does not consider the material transcendental conditions that are latent in Kant's account, especially of transcendental affinity. §20 considers *Anschauungen*, not *Empfindungen*. Any one *Anschauung* already integrates ('synthesises') some plurality of sensory *Empfindungen*. Hence if there is any given empirical *Anschauung* (as §20 requires), there must be transcendental affinity of the sensory manifold contained within that sensory intuition. §20 argues, in brief, that empirical intuitions must stand under the categories, because we have no other functions of unity that could possibly guide the synthesis required by or for any one empirical intuition, because synthesising sensations into an intuition likewise requires that those sensations exhibit transcendental affinity. In these ways, the Transcendental Deduction requires the broader issues highlighted here. §20 may appear to focus on our concept of 'cause' rather than 'substance'. However, §20 treats the Categories *en bloc*, and so includes 'substance' as much as 'cause', and §20 refers back to §19 (as it should), where an example of a substance, a body, is a key illustration of Kant's point. (On details of Kant's Transcendental Deduction see Baum (1986), Melnick (1989), Westphal (2020d).)

23. *KdV* A79, 147/B104–5, 186; *GS* 3:92.16–9, 139.11–37.

24. *KdV* A76–7/B102, A147/B186, A248/B305, A254/B309, *cf.* B148–9, A181/B224; *GS* 3:91.2–13, 139.25–9, 208.16–29, 210.35–211.14; *cf.* *GS* 3:118.7–16, 161.27–31.

presentation of spatio-temporal particulars. This is the task of Kant's Analytic of Principles. Alternatively, the unschematised categories can be referred to particular moral agents by using various principles of Kant's practical philosophy. (This second kind of singular reference is not presently relevant; it is reserved to §§78–87.)

Kant closely associates significance (*Bedeutung*), sense (*Sinn*), and even content (*Inhalt*) with a concept's 'connection' (*Beziehung*) or reference to objects, where this referentiality is secured *via* our forms of sensory intuiting (B300). Kant's account of 'objective validity' requires that, for any concept to be fully meaningful, it must be referable to possible or actual objects of human experience, where such 'referability' is secured spatio-temporally, *via* our spatio-temporal forms of intuiting and singular sensory presentation. This component of Kant's theory of semantic meaning concerns referentiality (possible deictic use), *not* 'empirical content' as understood by verificationist theories of meaning (intension), to which Kant's views have been erroneously assimilated.²⁵

Kant's semantics explicitly proscribes both empirical and synthetic *a priori* knowledge of particular objects beyond the bounds of sensory experience (A247–8/B304–5, *GS* 3:207.23–208.15). When Kant states that a 'merely transcendental' use of categories is 'in fact absolutely no use', his full statement indicates that this lack of use is lack of use for determinate judgments about particular objects; that is, the transcendental use affords neither empirical nor synthetic *a priori* knowledge of particular objects. This is clear from the specific context, though Kant himself added in his marginalia the further clarification that this use is no real use 'to know something' (*GS* 23: 48.16–7; *cf.* Erdmann (1881), No. CXXVII). Similarly, Kant clarified the meaning of his statement that no object is determined in the absence of the condition of sensible intuition by adding 'thus nothing is known' (*GS* 33:48.14). This purported 'transcendental' use of pure categories affords no knowledge, whether empirical or synthetic *a priori*, of particular objects. This is the 'transcendental use' of pure concepts Kant repeatedly criticises and repudiates in his *Critique of Pure Reason*; this is the nerve of his critique of rationalist metaphysical pretensions to knowledge. Conversely, Kant's semantics affords genuine cognitive significance only when concepts are 'connected' or referred to particular objects *via* singular sensory presentation, thus providing for singular cognitive reference to localised, identified spatio-temporal particulars. I say 'localised', not 'located', to underscore that Sam must localise those particulars about which *S/he* makes any candidate cognitive claim, so as to ascribe features *to* those particulars. This is

25. *E.g.*, by Strawson (1966), 16, and by Sandberg (1989). On the semantic (referential) sense of Kant's term "*Beziehung*", see Greenberg (2001), 57–67, 69–71, 119*n*.17, 187–8; and Hanna (2001), 83–95, 136–7.

the deictic reference required to realise any concept so as to achieve some empirical cognition. (Maths and morals are not the present topic.)

56. Perceptual Synthesis and Objective Reference

The importance of and the relations between these key points, namely, the spatio-temporal character of our representational capacities (above, §50), Kant's first transcendental proof of mental content externalism (transcendental affinity of the sensory manifold; §51), the restriction of legitimate causal judgments to *spatial* objects and events (§§52, 53), the way in which the 'I think' presupposes a synthetic unity of apperception (§54), and the role of singular sensory presentation in genuine cognitive significance (§55), all converge in Kant's claim that 'Thought is the act of relating given intuition to an object' (A247/B304, *GS* 3:207.23–24).²⁶ How these key points bear on Kant's claim can be understood by considering Kant's account of sensations and perceptual synthesis, and their roles in *ascriptive* reference.

Kant espoused a sophisticated version of sensationism (George 1981, *cf.* Harper 1984b). Outer sensations are not themselves objects of self-conscious awareness (except under highly unusual circumstances), although they are basic events or processes of sensing. In Kant's usage, sensation (*Empfindung*, and its cognates) indicates a corresponding object or a reality (*Real*, *Wirklichkeit*; B34, 74, 182, 207, 209, 609, 751; A20, 166, 373–4). Kant's view can be put adverbially: we sense (*e.g.*) greenly; we do not sense green, although we sense green features of objects, or less commonly of coloured light; we sense 'the real' that *corresponds* (as Kant says) to sensation. Sensations, or acts of sensing, are momentary; only series of sensations are temporally extended (A167/B209). We can have self-conscious experience of any object or event only insofar as we integrate a plurality of sensations when perceiving that object (or event), and only insofar as we judgmentally identify and integrate several of *its* sensed features.²⁷ Only this integration and judgmental articulation enables us either to experience or to know any particular object or event, by

26. "Das Denken ist die Handlung, gegebene Anschauung auf einen Gegenstand zu beziehen". Summing up his key result on the previous page Kant states: "Hieraus fließt nun unwidersprechlich: daß die reinen Verstandesbegriffe niemals von transscendentalem, sondern jederzeit nur von empirischem Gebrauche sein können, und daß die Grundsätze des reinen Verstandes nur in Beziehung auf die allgemeinen Bedingungen einer möglichen Erfahrung auf Gegenstände der Sinne, niemals aber auf Dinge überhaupt (ohne Rücksicht auf die Art zu nehmen, wie wir sie anschauen mögen) bezogen werden können" (A246/B303).

27. George (1981) notes that in contemporaneous philosophical usage, Kant's related term "*Erkenntnis*" (in the distributive singular) designates cognitive reference to a particular object or event; *cf.* Kant's taxonomy of representations (A319–20/B376–7).

enabling us to exploit (with sufficient accuracy and reliability) information about it provided through sensation (including its approximate location within our surroundings). The synthesis which effects the referential and representational role of sensations is a function of the kinds of judgments we as human beings can make.²⁸ Only the categories, which derive their functions of unity from our 12 basic formal aspects of judging, can guide our judgmental integration of sensations in our experience or knowledge of any particulars (as charted above, §§30, 43).²⁹

Kant's doctrines of perceptual and judgmental 'synthesis' clearly identify what is now called 'the binding problem' in neurophysiology of perception. This set of problems concern proper coördination of sensory, perceptual or cognitive information within our neuro-psychological processes of cognition.³⁰ Proper coördination of sensations into percepts of particular objects or events Kant ascribed to the transcendental power of imagination (*per* above, §43). Proper coördination of our recognition of individual features, aspects or characteristics into the recognition (localisation and identification) of any one particular object or event Kant ascribed to cognitive judgments of the understanding (A79/B105–6, 152, 162*n.*). If contemporary neurophysiology ascribes more integrative functions to our sensory apparatus than Kant may have allowed, this does not detract from Kant's keen recognition of a genuine problem, widely neglected by advocates of the 'new way of ideas', of sense data or of strong internalism, and detracts nothing from Kant's identification of a crucial problem involved in our explicit cognitive recognition that any one object or event displays any specific set of characteristics.³¹

Because we cannot perceive either space or time as such (above, §52), we cannot group apparent sensory qualities into properties or features of particulars (objects or events) simply by their apparent spatio-temporal coördinates. We can only identify the spatio-temporal region occupied by any particular by recognising (discriminating so as to differentiate

28. Regarding 'synthesis', see Baum (1986), Guyer (1989), Kitcher (1990), Howell (1992), Brook (1994), Rosenberg (2005).

29. See, *e.g.*, Allison (1983), 115–22, 173–94; Paton (1936), 1:245–8, 260–2, 304–5, 2:21–4, 31–2, 42–65, 68–9; Hanna (2001), 76–83; Wolff (1995), 58–73; Greenberg (2001), 137–57; Young (1992), 112–3.

30. Roskies (1999). This set of problems received attention from contemporary epistemologists thanks to Cleremanns (2003).

31. Kant's 'transcendental power of imagination' belongs to human sensibility; Kant deliberately uses the common German term "*Gemüt*" for our human mindedness, or more specifically, to render into German Aristotle's *animus* (soul), in order *not* to take even a terminological stand on mind-body substance dualism. It is a serious error to ascribe 'transcendental power of imagination' to the human intellect; this, in Kant's terminology, concerns understanding or reason (*Verstand* or *Vernunft*).

and identify) the spatio-temporal array of objects and events before us here and now. So doing requires identifying those objects as causally interacting substances which determine one another's locations, motions and transformations (*per* §§54–56). In this way, Kant's analysis justifies Evans's (1975) conclusion, that predication *qua* ascription of features and spatio-temporal localisation of particulars to which ascribe those features are mutually interdependent. To this Kant adds: Both coördinated forms of identification are parasitic upon the causal order of physical events within space and time, on the basis of which alone we can distinguish our subjective order of experience from the objective order of things and events (above, §§54–56). Only by distinguishing these can we identify particulars at all, and only by identifying them can we identify ourselves both as distinct to them and as perceptually aware of *them*. Our empirically determined self-consciousness (B275; above, §46) is our awareness of ourselves *as* being aware of some events (so much as) appearing to us to occur before, during or after others apparently occur. For reasons summarised herein, Kant is right that this form of self-consciousness (apperception) is only possible for us human beings on the basis of our perceptual consciousness of particulars outside us within surrounding space. Consequently, anyone sufficiently self-conscious to follow this line of reasoning, or even simply to raise sceptical questions, can know *a priori* that we have at least some knowledge of physical objects in our environs by understanding Kant's proof.

Kant's proof of the 'reality' of human perception is a transcendental proof of Critical commonsense realism about molar objects in our physical environs. It is not a proof of some transcendentially qualified, merely 'empirical' realism. In part this is because Kant's main arguments for transcendental idealism assume rather than prove that the transcendental conditions for self-conscious human experience can only be satisfied, *i.e.*, they can only be *fulfilled*, if transcendental idealism is true. This assumption is refuted by Kant's own transcendental proofs of mental content externalism (§§51–55), because these arguments show both that transcendental conditions for the possibility of self-conscious human experience can be satisfied by mind-independent environmental factors, and that the transcendental affinity of the sensory manifold can *only* be satisfied by a mind-independent factor, namely, the degree of detectable orderliness amongst the sensory manifold occasioned in us by some plurality of spatio-temporal particulars. This proof thus provides a sound version of the 'neglected alternative' objection to Kant's arguments for transcendental idealism, and thus provides a model for constructing such objections regarding the satisfaction of the other transcendental conditions Kant identifies. (Such objections are detailed and defended in *KTPR* §§15–29.)

57. Kant, Critical Commonsense Realism and Sensory Re-Afference

57.1. Sensory Re-Afference

Kant's account of the discriminatory character of causal-perceptual judgment and experience is much more subtle and insightful than has been recognised. One great merit of Kant's account is that, in examining the *a priori* formal conditions necessary for possible apperceptive perception of our spatio-temporal surroundings, Kant identified, examined, explicated and assessed a very basic, important perceptual phenomenon, constitutive of any organism's capacity to perceive its surrounding environs, in contrast to merely registering sensory stimulations occasioned by impinging externalities (of whatever sorts). In contemporary neurophysiology of perception, this phenomenon is known as sensory re-afference. Sensory re-afference is a sensory feedback loop required for any organism to differentiate between those changes within its sensory intake due to its own corporeal movements and those due to objects or events sensed within its surroundings. Sensory re-afference is physiologically necessary for any organism to *perceive* its surroundings, *as* surrounding particular(s) of whatever sorts (in contrast to mere environmental stimuli). Sensory re-afference is thus required for any organism to *refer* any aspects of its sensory intake *to* surrounding particulars, so as to perceive sensed features *of those* particulars. This is a neurologically sophisticated capacity, yet it is entirely typical of biological perception, down to such orders as *Drosophila* (Brembs 2011). An organism's perception of its environs is active, sensory-*motor* perception.

Kant of course cannot have known such neurophysiological findings, nor can he appeal to such empirical findings in his transcendental examination of human experience and its *a priori* formal (conceptual and sensory) and also material conditions. Yet Kant was a much more sensitive and accomplished Critical commonsense realist than has been recognised. Here, too, Cartesian *cum* empiricist presuppositions, including infallibilist presumptions about rational justification, have hindered appreciating Kant's insights. One chronic oversight is that Kant *did* indicate the significance of human embodiment and our bodily comportment (behaviour) within human perception and experience. Seeing that, and how, this is so and why it matters (both to Kant, and to our understanding of human perception) requires thinking through yet again both the problems and phenomena Kant examines, and important details of his explication and assessment of those problems and phenomena. I shall review Kant's own analyses selectively and as concisely as possible, to highlight what has been neglected, yet is most relevant here.³² One

32. Those who may rejoin, either that what I highlight is 'not in Kant's text', or that Kant's interests or key points are other than these, I invite first to work through carefully my

important point is that Kant's account of the modal categories in the 'Postulates of Empirical Thinking' (the fourth, final set in Kant's 'System of Principles', A218–35/B265–74, 279–87) concerns exactly what he indicates: the *transcendental* status and import of various empirical judgments we can (in principle) be entitled to make, that something be possible, actual or necessary,³³ whereas the 'Analogies of Experience' (the third set of 'Principles') concern *causal* modalities pertaining to the material, causal structure of physical particulars, events or states of affairs, and of our bodily comportment within our physical surroundings. Pervasive empiricist 'modal scepticism', stemming from Hume, and misplaced stress upon propositions, rather than judgments and possible forms of actual use of concepts and principles, have misled many to restrict (their view of) Kant's account of modality to the Postulates, thus neglecting the causal modalities by which alone perceptual discriminations are humanly, perceptually possible, including those discriminations required to distinguish between sensed features of surrounding particulars and mere sensory stimulations not otherwise attributable to anything one can identify or recognise. Setting aside specifically transcendental modalities, Kant notes that Hume fallaciously inferred from the fallibility and contingency of any knowledge of (or beliefs about) causal relations we may have, to the equal contingency of any such causal relations or causal laws themselves (A766–7/B794–5, *GS* 3:500.2–25). Kant thus distinguished expressly and in principle between cognitive (or 'epistemic') modalities pertaining to cognitive justification of our judgments about causal laws or causal relations and those causal modalities pertaining to causal laws or to causal relations themselves holding amongst physical particulars (*cf.* ch. 10).

Kant himself encourages stressing transcendental modalities, insofar as his Critical attention is primarily upon the *a priori* formal, transcendental conditions necessary for possible human experience, by which stress he often neglects or fails to highlight the equally important *material*,

prior account in *KTPR*. Here I set aside, by design, Kant's transcendental idealism and his purported proof that anything we can experience necessarily affords precise mathematical quantification (A160, 163–6/B199, 204–7). Readers unwilling to set aside Kant's idealism may consider the ensuing discussion as pertaining to Kant's empirical realism. I agree with Greenberg (2001, 2008) that according to Kant, 'the only knowledge the explanation of whose possibility requires transcendental idealism is our *a priori* knowledge of objects; the possibility of empirical knowledge, or experience, certainly does not require it. For Kant, if the only knowledge we were trying to account for were empirical knowledge, there would be no reason to embrace transcendental idealism: One can be quite realistic about experience' (Greenberg 2008, 9–10). However, my nod here to Kant's contrast between empirical realism and transcendental idealism does not require embracing Greenberg's interpretation.

33. *Viz.*, insofar as a particular is consistent with the formal *a priori* conditions of human experience (*i.e.*, the categories, space and time), insofar as additionally there is credible sensory evidence that it exists, or finally, insofar as it is required any- or everywhere at any or every time.

constitutive features of those particulars which we can successfully discriminate and identify perceptually. This main theme of *KTPR* I merely note here, in part to suggest how and why I am, as it were, reading Kant's *Critique* somewhat against his own transcendental idealist grain, whilst highlighting resources and insights of his Critical commonsense perceptual realism. In those regards highlighted here, Kant did significantly better than he aimed or claimed. If he may not have fully appreciated his philosophical achievements, we do both him and ourselves great disservice by neglecting them ourselves. Please note, finally, that the present considerations concern Kant's examination and identification of necessary formal conditions for the human *possibility* of apperceptively perceiving particulars (objects, events, structures, processes) in our surroundings; these considerations do not, as such, aim to show that these conditions are satisfied. (Those considerations are discussed above, §§51–56).

57.2. Some Key Aspects of Sensory Perception, Integration and Behaviour

At the very beginning of the 'Analogies of Experience', Kant expressly distinguishes, within any experiential episode, between sensations, sensory intuitions, perceptions and any perceived particular (object or event). This sequence is mine, but these distinctions are Kant's:

Experience is an empirical cognition, *i.e.*, a cognition which specifies an object (*Object*) through perceptions. It [such an experience] is thus a synthesis of perceptions, which itself is not contained in that perception; instead, the synthetic unity of its manifold is contained in a consciousness which constitutes what is essential in a cognition of sensible objects, *i.e.* of experience (not merely of intuition or sensation). (B218–9)

Not only does Kant expressly mark these four distinct aspects within any perceptual episode, he expressly underscores the distinction between the merely contingent order in which sensations of any manifoldly qualified extant particular happen to occur during any period of time to any percipient organism in any particular context (occasion), and any objective order of the manifold sensible features of any particular within the percipient organism's surroundings (B219, 3:158.25–159.5).³⁴ Any such

34. That perceptible particulars are and must be manifoldly constituted, so that they cannot be logical simples, is best demonstrated by internal critique of Hume's (failed) concept empiricist attempt to reduce perceptual simplicity to logical (or numerical) simplicity (Westphal 2013a). The distinction 'thing/property' is a distinction of reason, not a real distinction between numerically distinct individual parts or components; the distinction 'thing/property' can neither be reduced to, nor replaced by, such

objective order cannot, however, be specified by reference to ‘time itself’, because time itself cannot be perceived (B159, 3:159.6–7). Consequently, it is only possible to perceive any perceptible, spatio-temporal particular if *it* can be recognised *as* a particular causally responsible for there being any determinate, specifiable, identifiable temporal relations amongst those of its features which one senses, by which one *can* identify their order or sequence as causally due to *it* as that particular, distinct to any perceptual episode regarding it or regarding anything else. Kant stresses that such discriminations and identifications require using *a priori* concepts (B219, 3:159.8–11), on the basis of which alone any empirical concepts can be learnt, acquired or defined. However fundamental are those concepts and our sufficiently accurate (and justified) use of them, they cannot and do not themselves *constitute* the relevant material relations amongst the features of any spatio-temporal particular. That these relations are *causal* and *constitutive* (material) structures and relations of perceptible spatio-temporal particulars is directly implied by Kant’s conjoint set of three principles governing causal-perceptual judgment in the three ‘Analogies of Experience’.

To anticipate, and to be forthright: We can distinguish between sensations and perceived features of particulars in and through any perceptual episode only if what Someone perceives is quite literally more substantial than momentary, fleeting sensations. Only when and where(ever) such sensory perceiving can be so ascribed *to* some recognisably persisting particular can any sensations *be* integrated into sensory *intuitions* referred to *that* particular *as* the perceptible, perceived source of those sensory-experiential contents which contribute to anyone’s perceiving *its* sensed feature(s). (This is not a recipe to follow; it is a list of distinct conditions which must be satisfied.)

Kant claims that sensations are momentary, hence transient and vanishing (A167/B209). Perhaps so, yet it suffices for Kant’s examination that sensations may be no more than momentary, and that any particular(s) we can perceive and identify *as* that (or those) particular(s) must be more stable than our sensations of it. This contrast between the (comparative) variability of sensations to the (relative) stability of any perceptible particular is required to distinguish *that* particular from our varying sensory perceptions *of* it, *as* we control our perceiving of it, distinguishing whatever sensory contents within our experience (in the present perceptual episode) are due to perceived particular(s) and whatever contents are due to our corporeal behaviour. The relevant ‘contents’ concern changes and continuities *within* our perceiving, *as* we continue perceiving our

quantitative or logical distinctions as ‘whole/part’, ‘set/member’ or ‘product/ingredient’ (Westphal 1998a). Hume’s ‘separability principle’ is false, and shown to be false by his own examination and arguments.

surroundings. This distinction is physiologically possible through sensory re-ference. Yet Kant recognised that this distinction can be drawn by us, whether implicitly or explicitly (self-consciously), by how we can and do control our perceptual attitude, our literal bodily orientation, towards perceived particular(s), or likewise control our attention to the various aspects of any perceived particular(s).

Kant recognises that sensory perception of particulars is not, and cannot be, so to speak, pointillistic, neither temporally momentary nor delimited to mere locations within space (to points rather than to regions). However fine-grained may be our sensations, they afford perceptions of *particulars* only if pluralities of sensations are integrated into percepts of particulars perceived to be there and then, or here and now, within one's spatio-temporal surroundings, *and* insofar as some plurality of successive percepts are integrated into a continuing perceptual episode (however brief). To identify any particular *as* a perceived particular requires being *aware* that this particular occupies a specific region of space during a period of time *within* one's surroundings, that it is *one* particular occupying its distinct and distinguishable region and period, and that it has some plurality of perceptible features, at least some of which we perceive. This single, unitary awareness of the plurality of any single particular's features, and of whatever distinguishes that particular from its and from our surroundings, Kant designates as the unity of apperception necessary to perceive any particular (A177/B220, 3:159.17–21). This unitary apperception is a unitary episode of self-conscious awareness *that* one is continuing to perceive this (or these) particular(s) in one's surroundings.

The 'necessary unity of apperception' concerns the unity of anyone's self-consciously perceiving any one particular through any one perceptual episode at *any time* (Kant stresses the distributive singular; A177/B220, 3:159.19) one may succeed in perceiving a perceptible particular. That experience (of particulars in one's surroundings) is 'only possible through a representation of the necessary connection of perceptions' (A177/B219–20, 3:159.10–11, .17–21), indicates that experiencing any particular, as distinct to our sensations, to our sensory intuitions, or likewise to our percepts or sensory appearances of it, requires recognising by representing that *it* is (at least in part) responsible (causally) for the sequence of our perceptions of its sensed features. Kant stresses this point by noting:

These Principles [of the Analogies of Experience] have this peculiarity, that they consider, not [sensory] appearances and the synthesis of their empirical intuition, but rather merely whatever exists and the relations amongst them in regard of this, their existence. (A178/B220, 3:159.34–37)

Discriminating in this way between our perceptual experience and whatever particular(s) we experience, *as* we experience it (or them) and

through our sensory-perceptual experience of it (or them), requires that we can and do discriminate between those aspects of our sensory experience which are due to our own perceptual-motor behaviour and those aspects of one and the same sensory experience which are due to the particular(s) we perceive. We cannot, *a priori*, infer or otherwise justify any judgment or claim regarding the existence of any specific particular(s); yet we can anticipate, *a priori*, the kinds of identifiable relations holding amongst any extant particular(s) we can sense, perceive or judge to exist (A178/B220–1, 3:159.37–160.3). Here too Kant is express about the *distributive* validity of the principles he aims to explicate and justify (in the ‘Analogies of Experience’, and indeed throughout the ‘Analytic of Principles’), that they hold of any, even partially successful sensory-perceptual discrimination and apperceptive identification of any extant perceptible particular. This is why the three principles of the ‘Analogies of Experience’ are *regulative* principles (A180/B222–3), guiding our causal-discriminatory judgments and inquiries regarding any extant particular(s) we encounter, investigate, or catch for lunch.

These regulative principles also have constitutive significance insofar as using them with sufficient accuracy and justifiedness at least occasionally is required for any of us finite human beings to achieve apperception. They have a distinct constitutive significance insofar as we use them in any instance to correctly (if approximately) identify any causally integral perceptible particular and any of its causal interactions.

Kant is explicit about our perceptual-motor behaviour, and about its fundamental role in discriminating between whatever we perceive and our sensory-perceiving of it. The first obvious instance is how he contrasts perceiving a ship sailing downstream to perceiving the sides, roof and foundation of a building (A192–3/B237–8). If one perceives a (relatively) stable, persisting object, such as a building, it is entirely one’s own choice whether first to look to one side or the other, or to the roof first or instead to the foundation. Although these aspects of the house have determinate, persisting inter-relations, the sequence in which one senses, perceives or recognises any aspect or any relation between any pair or plurality of its aspects, is *equally* due to one’s choice of viewing angle, even if this be no more than the angle of one’s gaze (eyes). Kant’s example of watching a ship sail downstream is expressly a *contrasting* case (3:169.31–170.4). Note that identifying either the ship or the river within its banks (not to mention landmarks on either shore, natural or artificial) requires our sensing, perceiving and identifying the concurrent existence of, and relations between, the features of the ship and (respectively) the contours of the river. About each of these objects of perception, the same points hold as those noted about perceptual experience of a house and its features. The ship’s *sailing downstream*, however, is a changing relation between the river (and its banks) and the ship; the ship is said to be *sailing*, not drifting. Regarding their relation we are not at liberty to

alter the sequence of sensory perceptions so as to alter the perceived relation between the ship and the river (or its shore). Not only are we not at any such liberty in this regard, we also quite commonly are *aware* of not being at any such liberty: We notice that the sequence of our sensory perceptions of the sailing ship to the river and its banks is parasitic upon *those* sensed, perceived, discriminated, identified, sufficiently stable physical particulars and *their* changing spatial relations. Whether we observe the ship continuously, or whether we view it, look away and look back again, the ship's sailing determines where the ship is within the river, and only thus where we see it within the river, any time we look towards it. *This* is part of what Kant means by saying that in (sufficiently) veridical perception, we must derive the subjective order of perceptions from the objective order of spatio-temporal events (A193/B238).

If our capacity and altogether typical commonsense activity of looking at two or more particulars concurrently is only implicit in Kant's example of the ship sailing on a river, and only implicit in Kant's example of perceiving any one object, such as house, which is and must be perceived to be (in some relevant region) here or there before one's eyes, it is explicit in Kant's Third Analogy, which first and expressly addresses interactions between any plurality of physical particulars (*KTPR* §36.3). Here his commonsense example is watching the moon rise above the horizon. In such a case, Kant notes, 'I can thus first direct (*antstellen*) my perception to the Moon and afterwards to the Earth, or also conversely, first to the Earth and then to the Moon' (B257). Because this pair of particulars can be viewed in either order, shifting our gaze or attention between them *ad libitum*, they are (rightly) judged to exist concurrently. Mere sensory intake occurring in any period of time, however integrated merely as sensory intake (apprehension),³⁵ only suffices to discriminate the alternating glimpses of each (comparatively) episodic viewing of one or the other particular. It does not suffice to specify these sensory sub-episodes as alternating views of any *one pair* of concurrently existing, persisting particulars (B257; *cf.* Harper's (2007) explication of how these points hold even of perceiving a pendulum's recurring periodic swing). Neither can their concurrent existence be identified by comparing those sensory sub-episodes (glimpses) with 'time itself', because time as such is not (literally) sensible or perceptible. Kant's term "*zugleich*" is properly rendered as 'concurrent', insofar as his examples expressly concern *periods* of time (those embracing the relevant sub-episodes of viewing either the Earth or the Moon) within one period (episode) during which one shifts one's

35. Kant glosses the verb in passing: ". . . apprehendirt, d.i. ins empirische Bewußtsein aufgenommen werden . . ." (A244/B302, 3:148.24–149.1): '. . . apprehended, *i.e.* taken up into empirical consciousness . . .', where empirical consciousness = sensation, not appreciative (self-conscious) awareness (A321/B376–7).

gaze back and forth between these two perceptible particulars. (Nothing in Kant's issues, analyses, examples, proofs or text involves, requires or justifies anything so precise as exact simultaneity, first made physically problematic by the Special Theory of Relativity; these are Analogies of *Experience*.) Mere sensory intake (apprehension) is always successive; it affords no more than repeating a *kind* of sequence of sensory intake, but provides no recourse to any past sequence of sensory intake; that sequence is numerically unique, transient and vanishing. Memory and relevant recollection are required to exploit past sensory perceptions to ascertain what one *now* perceives, for any relevant 'now' (of current, on-going sensory perception) whatever. Neither can we, as it were, date any sequence(s) of sensory intake by appeal to 'time itself'. Consequently, to specify these alternating instances of any pair of kinds of sensory sequences (*e.g.*, viewing the Earth; viewing the Moon), *as* alternating perceptions of *concurrently* extant perceptible particulars, requires a concept, specifically, the concept of reciprocal consequence holding between the features (*Bestimmungen*) of these two things (*Dinge*) which exist separately, 'apart from and outside each other', yet during the same period of time in which they are both perceptible („außer einander zugleich existirenden"), and which of them we perceive when is *also* a matter of which we choose to view when. That this reciprocal succession within our perceptions is, as Kant says, 'grounded in the object', means that our elective choice of which to view when (including for how long), together with their alternating viewability, is parasitic upon *those* two persisting, concurrently existing, concurrently perceptible particulars. Kant does not say that viewing the Earth causes viewing the Moon, nor *vice versa*; such a gross mis-reading presumes a Humean view of alternating sensory impressions and the consequent presumption that any relevant causal relation must be a relation between those vanishing impressions (which can have no dispositional characteristics whatsoever, and so can have no causal characteristics). Our arbitrary choice to shift our gaze back and forth does involve mutual causal interaction, but the relevant causal interactions may be indirect, as Kant expressly notes: Light playing between our eyes and celestial bodies constitutes a 'mediated community' between us and any plurality of celestial (or also terrestrial) bodies we happen concurrently to perceive. Only because this 'mediated' causal community of light radiation is (in part) parasitic upon actual celestial bodies and anyone's actual eyes and their actual viewing angles during any period of time, can our sensory perception afford sufficient basis for our judging (rightly) any pair of celestial bodies (including Earth) to exist concurrently because they can be perceived concurrently, insofar as they may be perceived alternately *ad libitum*.

Kant's 'Analogies of Experience' expressly concern temporal relations, those of persistence, sequence and concurrence (A177/B219). His first edition (A) includes some considerations of space, though the

second edition (B) is more emphatic and explicit about relevant spatial parallels. Kant's 'Axioms of (sensory) Intuition' expressly concern both spatial and temporal extent, and their respective delimitation, when sensing, perceiving or judging any perceptible, perceived particular(s) (B262, A162–4/B201–5). This includes temporal period and both spatial extent and shape (figure, *Gestalt*) as extensive quantities. Identifying these extents or configuration(s) in any instance requires using (if implicitly) the category of quantity (B162), in order to delimit the relevant boundaries within which one perceives any one particular within the indefinitely extended space and time within which one lives, acts, senses, perceives and experiences. Such delimitation is in the first instance sub-personal, and is required to afford percepts of any spatio-temporal particular(s). This sub-personal function and functioning Kant assigns to 'productive imagination' or 'transcendental power of imagination' (A163, 164–5, 170/B162*n.*, 204, 205, 211, 233; *cf.* above, §43).

The important point for which Kant argues is that delimiting the spatio-temporal region occupied by any perceived particular requires identifying some of *that* particular's manifest, sensed, perceived features, and *vice versa*. These are conjoint, mutually interdependent proto-cognitive achievements. (I say 'proto-cognitive' to set aside for now issues about accuracy and justification. It is very important that Kant's account of cognitive judgment affords ranges of adequacy in all these regards.) Furthermore, these conjoint, mutually interdependent proto-cognitive achievements of (approximate, presumptive) spatio-temporal delimitation of, and ascription of characteristics to, any perceived particular is never momentary, however quick and flawless it may be (depending upon one's sensory acuity and perceptual skills); it always takes some period of time within some region of space within which one acts, which is required to distinguish perceived particular(s) from our perceptual activity *as* one perceives it or them. Finally, such (presumptive) conjoint spatio-temporal delimitation of, and ascription of manifest features to, any perceived particular(s) is necessary for us to *refer* any concepts or principles used in judging what we perceive *to* that (or to those) particular(s) so that any proto-cognitive judgment about it (or them) *has* any truth-value, or any value as an approximation, and so that our judgment *can* have any cognitive-justificatory status whatsoever. Kant is especially plain about these crucial epistemological points in his criticism of Leibniz in the Amphiboly of the Concepts of Reflection, regarding two spatially distinct though qualitatively identical drops of rain (A272/B328). Yet these points are central to his entire Transcendental Analytic, which aims to demonstrate that our *a priori* categories 'have no other use for cognition of things than their application to objects of experience', as Kant states in the title to §22 of the B Deduction. Indeed, Kant stresses in the Second Analogy his concern with those conditions which alone enable us to identify features and ascribe them to some particular *within* any

perceptual episode, *as* we are perceiving *it* (A197/B241–2). There he also stresses the importance of using *examples* of our (possibly human forms) of perceptual discrimination.

In this connection, recall a passage from the concluding section of the B edition Deduction (§26) which expressly highlights the importance of spatial delimitation within perception of physical particulars. There Kant considers the example of perceiving successively the concurrently existing features of a building, a house. There Kant expressly notes, ‘I draw, as it were, its figure’ (B162), thus noting, *i.e.*: drawing, identifying, discriminating, circumscribing its (approximate) spatial boundary. These points about causal-perceptual discrimination of particulars hold *generally*, not merely of the case of a porter climbing the stairs in the staircase up to our flat, which we, now comfortably at home, seated before the fire, do not perceive out in the stairwell (*T* 1.4.2.20). We can only distinguish appearances of particulars by discriminating particulars, by discriminating which sensed features belong to any one particular, which sensed features belong to any other, and how the subjective order of our perceiving derives in fundamental part from the objective order of surrounding states of affairs.³⁶ Kant states:

If for example I make the empirical intuition of a house through apprehension of its manifold into a perception, the necessary unity of space and of outer sensory intuition as such provide my basis for so doing, and I as it were draw its figure in accord with this synthetic unity of the manifold within space. Even this same synthetic unity, however, if I abstract from the form of space, is rooted in the understanding and is the category of synthesis of the uniform (*Gleichartigen*) in an intuition as such, *i.e.* the category of quantity, with which that synthesis of apprehension, *i.e.* this perception, thus must be entirely in accord. (§26, B162)

The category of quantity is used within the perception of any particular to specify (however approximately) its size, shape (figure, *Gestalt*) and its numerical unity as some one perceptible particular with its various features. Any such boundary can *be* drawn (however approximately) only if we succeed (at least in part) in identifying some sensed feature(s) of that particular which indicate its perimeter. This concurrent spatial delimitation of, and ascription of features to, any one perceived particular are *conjoint*, mutually interdependent proto-cognitive achievements. The conjoint delimitation of the (approximate) boundary of any particular

36. Kant expressly notes that any explicitly self-conscious, determinate subjective order of apprehension must derive from the objective order of events (A193, 195, 349–50/B238, A240; 3:170.11–22, 171.19–24, 4:220.28–221.15).

and ascription of features to that particular which suffice to delimit its extent and shape (boundary) is also temporal; this kind of predication as ascription of features to any individual(s) is only possible within some on-going perceptual episode, an episode within which we can and do alter our own (literal) point of view or (also) our attention, whether only slightly or by changing our perspective on a particular by changing our location with respect to it. This temporal expanse of perceiving is required to differentiate what in our experience is due to our surroundings and what is due to our own perceptual-motor activity. This spells out Kant's examples and reflections more carefully than he, perhaps, but so doing is required to understand why Kant expressly and rightly stresses the following point, crucial to the corporeal, behavioural aspect of sensory-motor perception:

... we cannot alter any position empirically (*i.e.*, perceive this alteration) unless omnipresent matter makes possible for us the perception of our position, and through their mutual interaction presents their concurrent existence and so extending to the most distant objects presents their co-existence (if only mediately). (A213/B260)

Kant's appeal to 'omnipresent matter' is an important clue to his account of material, causal forces and their transmissions and interactions (Edwards 2000). Yet only a much more modest point is germane here. 'Omnipresence' may be interpreted distributively and restricted to perceptible particulars. In this regard, Kant's point pertains to how our material *surroundings* are constitutive of the possibility of our perceptually discriminating any particulars, by distinguishing them from one another *and* from our corporeal selves and our perceptual-motor behaviour. Where- and whenever we perceive or sense any one particular, we can only do so in context, a context containing other particulars surrounding the particular we single out, and surrounding ourselves, so that we can locate *it*, relative to ourselves and our surroundings. "*Allerwärts*" expressly stresses spatial distribution, and may (minimally) concern material particulars distributively (rather than collectively). Not only can we not perceive 'time itself', neither can we perceive 'space itself' (A172–3, 214, 487/B214, 261, 515). Specifying any spatial location – our own location within our surroundings, present or previous – requires that we can and do locate various physical particulars and their relative positions, and our position(s) relative to them. In all these regards, temporal as well as spatial, Kant's early concerns about how we can orient ourselves within space persist, centrally, into the *Critique of Pure Reason*.³⁷

37. "Von dem ersten Grunde des Unterchiedes der Gegenden im Raume" (1768, *GS* 2:377–383), 'On the first ground of the distinction of regions [or: directions] in space'.

The relevant temporal complement may be provided by a claim Kant makes in the A Deduction which has long puzzled me. There Kant claims that

Each [sensory] intuition contains within it a manifold, which of course would not be represented as such [*as manifold*], if the mind did not distinguish the time in that series of successive impressions: since as contained in one moment any representation can never be other than an absolute unity. (A99)³⁸

The point relevant here is Kant's suggestion that, at any moment, our sensory field *qua* sensory field is unitary and comprehensive: our sensory field is always 'full', not 'gappy' or incomplete, it is continuous edge to edge (whatever may be one's sensory modalities, their acuity and the extent of our sensory periphery, as it were).³⁹ In this regard, Kant aims to understand how we can discriminate particulars within our comprehensive sensory field, rather than how we can add together bits of (putative) sensory content to form any percept purportedly of any particular. Kant's analysis is remarkably independent of issues about sensory atomism or the rates at which continuing sensations may change. This is one key advantage of his sensationism, by which he regards 'sensations' not as objects of our self-conscious awareness, but typically as aspects or components of our sensory awareness of our surroundings (or of our internal corporeal conditions; kinaesthesia, pains or pleasures).

My present point, which I believe also to be Kant's point, is that sensory plurality, as such, is no indicator of either plurality or unity of (or within) any sensed particular(s). Which sense contents (to attempt for the moment a neutral, non-committal usage, not to be reified into sense data) are attributable to which particulars requires further considerations, literally by further considering one's perceptual experience *as* one continues perceiving whatever may be perceptible within one's current surroundings. One continuous expanse of pink or of coolth may be due to two contiguous pink or cool particulars (*e.g.*, ice cubes; Sellars IKTE,

38. "Jede Anschauung enthält ein Mannigfaltiges in sich, welches doch nicht als ein solches vorgestellt werden würde, wenn das Gemüth nicht die Zeit in der Folge der Eindrücke auf einander unterschiede: denn als in einem Augenblick enthalten kann jede Vorstellung niemals etwas anderes als absolute Einheit sein". This passage is in the first section of Kant's doctrine of three-fold sensory synthesis. Though omitted from the B edition, Kant maintains this core doctrine (*KTPR* §§22.1, 22.5, 23.2).

39. Such phenomena as 'blind sight' are not relevant here; that phenomenon pertains to sensory awareness; our self-conscious perception of our surroundings is, in such cases, gappy. Here the relevant points pertain first to our sensory intake, and then to whatever we can self-consciously make of our sensory intake, at any time in any region of space, and over some period of time within that region of space.

20, 21, 23; *FMPP* 112); or conversely, one colourful region may be occupied by only one delectable sweet or well-seasoned sauce. Our perception of our surroundings is neither moment-by-moment, nor additive. Our perception of our surroundings is discriminatory, temporally and spatially extended and requires our perceptual-motor activity, as well as our attention. We *can* only perceive particulars which *have* sufficient stability and perceptibility, and which can be *perceived* to have sufficient stability and perceptibility, so that we *can* at all discriminate and identify *them* as particulars (whether objects, events, structures or processes, of whatever kind or scale) distinct to ourselves, and distinct to our perceiving of them, *whilst* we are perceiving them. This is accomplished neurophysiologically (in part) by sensory re-afference. Yet Kant noted and explicated its significance on entirely philosophical grounds, showing by analysis and example (through transcendental reflection) that we can only distinguish our perceiving and any particulars we may perceive if, when and insofar as those particulars are, quite literally, more substantial and so more persisting than our sensory intake from, or our percepts of, those particulars. Furthermore, our perceptual discrimination is modal (counterfactual) and involves *causal* discrimination. Hence causal modalities are distinct to cognitive (epistemic) modalities (pertaining to cognitive justification), just as Kant's 'Analogies of Experience' are distinct to his 'Postulates of Empirical Thought'. (This corroborates and augments the findings in ch. 2 above.)

Sense-data, like Hume's impressions of sense, are 'infallible' only insofar as they are momentary, because any sensory content may alter at any moment, or may occur only for a moment. Logical relations are timeless, and so neither do nor can pertain to any (logical) implications of any merely momentary sensory occurrence. This momentary infallibility is bought, however, at the cost of having *no* justificatory relevance to any preceding or succeeding moment, nor to any concurrently occurrent sensory bit. This is because putative 'sense data' or Hume's 'impressions of sense' illicitly assimilate the putative sensory object to whatever one *takes* that putative sensory object to be, just as Descartes defined (stipulatively) 'sensing strictly speaking' (Med. 2, AT 7:19). Admitting any complex sensory object or admitting any justificatory relevance of some present, sensory bit to any further, hence future perception, likewise affords the possibility of present error or ignorance; either case obviates infallible perception of that putative (alleged) sensory object. Thus the 'infallibility' of such sense data is purchased at the price failing to make any significant claim about, and failing to provide any *evidence* regarding, any perception-independent *object*, with *any* causal integrity, or (also) about any causal disposition, or also about any other sensory bit. This is because dispositional properties generate differing occurrent qualities (including perceptible qualities) in different circumstances; hence no dispositional quality affords *momentary* infallible perceptual grasp; only

occurrent qualities are so much as candidates for infallible apprehension. Precisely because they are momentary and vanishing, sense data can have *no* implications for other sense-data, and so cannot possibly afford any cognitively useful sensory re-afference. Neither can they afford any cognitively useful counter-factual discrimination of any one perceived particular from ourselves or from its surroundings. We can only discriminate perceived particulars within causally structured, perceptible surroundings, due (in part, also) to the sufficiently reliable causal structure of our bodily comportment and our sensory physiology. This is how and why Harper (1984a) is correct that Kant considers perception of particulars in terms tantamount to J.J. Gibson's perceptual affordances, and why Kant is correct that affirming what anything *is* has a status quite distinct to mere psychological associations or habits, and that making any such assertoric attribution *to* any spatio-temporal particular requires use of the categories of cause and substance/attribute (at least). Hence Kant is quite right to contrast the *de re* modalities pertaining to the causal integrity, structure and interactions of spatio-temporal particulars which we do (often enough) perceive and identify, to the highly contingent sensory basis of our perceptual judgments, and the meagre empiricist evidence they can provide for our elementary, commonsense claims (B123–4, 141–2, 161). The apparently meagre justificatory resources of classical empiricism are due to its Cartesian internalism (*sans* God); Kant's Critical realism already indicates that perceptual knowledge is possible only by perceptual discrimination (B221), and perceptual discrimination is only possible (for beings like us) by our perceptual-motor *skills*, guided by the Categories and Principles of cognitive judgment Kant identified.

The empiricist assumption that there is some basic, non-modal, purely sensory-perceptual observation vocabulary, still shared by Brandom (2008, 2015) and by Spohn (2018), is a Humean hang-over, ultimately tracing back through Descartes' 'sensing strictly speaking' (Med. 2, AT 7:19) to Étienne Tempier's assertion of justificatory infallibilism (1277). Only because human perception is sensory-*motor* perception by embodied agents within causally structured material environs can we at all discriminate and identify (however approximately) particulars in our surroundings. Thus does Kant defend Critical commonsense realism about human perception. P.F. Strawson (above, §14) drew upon these sources in his later essays; C.I. Lewis (*MWO*) had preceded him (above, §13; Westphal 2017c). Wilfrid Sellars learnt from all three (above, §15).⁴⁰

40. Their important insights have been obscured by recent discussions of 'non-conceptual content' in perception; a deeply confused debate. (What colours are your colour concepts? Most concepts are classifications; particulars and their features are classifiable, but are not themselves classifications.) Allais (2009) nicely disentangles the important features of Kant's view from current (non)conceptualist confusions. The 'myth of the given' requires conflating sensory consciousness and self-consciousness in good

Recall, however, that this phase of Kant's examination of perception is explicatory; it aims to identify necessary formal and material conditions for the possibility of apperceptive human perception. His proof that these conditions are both necessary, and that they are satisfied in the case of any human being sufficiently apperceptive to raise questions about sensory appearances or about any objectivity of perception, are more extensive and sophisticated. One point is that these kinds of perceptual discrimination of *material objects in our surroundings* are necessary to make exactly the kinds of distinctions between one's perceptions and objective states of affairs (and events) which Hume correctly and unhesitatingly made when the porter delivered his letter, though Hume's empiricism cannot at all account for Hume's discriminatory capacities and achievements.

Second, those who may rejoin, 'But couldn't it be that?', persist in maintaining that merely logically possible alternatives are cognitively relevant, as justification defeaters. That was declared by Tempier (1277), but Kant recognised that logical proof is only required for justification within strictly formal domains (pure axiomatics); he expressly developed a fallibilist account of justification regarding any empirical judgments we may make. His proof that we, any of us who can wonder about such issues, *do* perceive something of our surroundings turns on demonstrating that we are only able to sort apparent sequences of some appearances appearing to us to occur before, during or after other apparent sequences, *if* in fact we perceive at least some particulars in our surroundings. Which ones and how accurately he leaves entirely open, by design. Kant's anti-sceptical strategy is instead to block the sceptic's generalisation from the universal possibility of perceptual error or insufficient

Cartesian fashion, as Hume did. Kant knew and taught much better, capitalising upon Leibniz's distinction between perception and apperception in his cogent analysis of perceptual judgments in contrast to merely sensing our surroundings. Kant's distinction parallels (exactly) Dretske's (1969) distinction between simple seeing and epistemic seeing *that* such and so is the case. Kant's distinction also parallels (exactly) Travis's (2004) analysis of the silence of the senses and the epistemological relevance of 'occasion sensitivity'. Simply sensing one's surroundings is not yet cognitive; cognition requires identification, identification requires classification. These explicitly cognitive achievements do not (at all) restrict the content of sensory experience to only what we (can or do) expressly identify. The status of whatever we sense which we do not identify (whether implicitly or explicitly) is not any explicitly *cognitive* status. The 'myth of the given' requires that it is explicitly cognitive. That mistake is an inevitable consequence of disregarding cognitive *judgment* or of assimilating alleged objects of perception to what one *takes* those objects to be, or both. Kant provides far more cogent grounds for identifying and rejecting both mistakes than does McDowell. (On Brandom's 'modal expressivism' see Westphal 2018a, §§136–7.) Spohn (2018) depends entirely and expressly upon Hume and Quine; my criticisms of Hume's and of Quine's (Westphal 2013a, 2015a) views directly undermine Spohn's attempt to re-inject modalities into the world banished only by his unCritical empiricist presumptions.)

cognitive justification in any instance to the purported possibility of universal perceptual error or lack of cognitive justification, posed as the purported problem of global perceptual scepticism.

58. Kant's Justificatory Fallibilism Concedes Nothing to Scepticism

Sceptics and *advocati diaboli* may retort that this is a nice story, not proof. The issue thus raised requires appreciating what Kant's proof achieves, and what can properly be expected of philosophical proof. One of the deepest errors of 'analytic transcendental arguments' has been to assimilate Kant's analyses to the Cartesian predicament Kant decidedly rejected. Kant is the first great non-Cartesian epistemologist. Kant rejects the Cartesian assumption, shared by Hume, that runs through the entire sense-data tradition, that states of sensory consciousness (sensations) are automatically also states of our self-consciousness awareness. This assumption, when conjoined with infallibilist assumptions about cognitive justification, inevitably lead to the ego-centric predicament of Cartesian scepticism.

Kant also rejected Cartesianism by developing moderate forms of externalism, not only about mental content (above, §51) and causal judgment (above, §§52, 53, 56, 57), but also about cognitive justification. Kant's transcendental conditions for the possibility of apperceptive human perception need only *be* satisfied for any human to be apperceptive; no one needs to *know* that they are satisfied in order to be apperceptive, nor does anyone need to know that they are satisfied in order to understand or to use Kant's proof. To the contrary, transcendental proofs work due to the converse relation between their *ratio essendi* and *ratio cognoscendi*: The satisfaction of the transcendental conditions of the possibility of apperceptive human experience is the *ratio essendi* of self-conscious human experience. Once Kant's proof establishes this, then anyone's actual self-conscious experience is, and if one understands Kant's proof, it is also known to be, the *ratio cognoscendi* of there being perceptible, causally active physical particulars in one's surroundings.

Kant's non-Cartesianism is clear also in his recognition that any tenable epistemology requires some substantive premises that cannot be proven solely by deduction, nor by purely formal techniques, and so do not pass muster with Descartes' evil deceiver. This is why Kant's method of transcendental reflection involves our reflecting on carefully chosen, wildly counterfactual circumstances, to identify some of *our* key cognitive capacities and their attendant incapacities (above, §51). Through these we can then appreciate how apperceptively dependent we are upon our perceptible physical surroundings and upon our own perceptual-motor behaviour. This is how Kant makes good on Descartes' all too general claim about how we are dependent beings (above, §2.4), by arguing

transcendentally *for* mental content externalism. Sceptics and *advocati diaboli* dismiss premises that do not meet infallibilist standards. Kant recognised infallibilist models of epistemic justification as the sceptical trap and philosophical pipe-dream they are. He understood very well the failure of Descartes' effort to refute scepticism *moro geometrico*. To this I add: Descartes' argument is infected, not by one, but by five distinct vicious circularities (Westphal 1987–88). Kant was right to develop a radically non-Cartesian approach to scepticism and to the philosophical analysis of our empirical knowledge. Not only does Kant advocate a fallibilist account of empirical knowledge (A766–7/B794–5), he advocates a fallibilist account of transcendental knowledge as well: Establishing the basic inventory of our human cognitive capacities and incapacities (charted above, §30) is a collective undertaking, requiring constructive mutual assessment (O'Neill 1992; Westphal 2018a, §§2, 3). Any form of justification based on constructive mutual assessment is inherently fallibilist, because we human beings are inherently fallible. (Fortunately, most of us are also corrigible, though not if we cling to infallibilist predilections.)

Kant's non-Cartesian insights did not prevent him from also trying to prove his anti-sceptical conclusions 'apodictically' (A737; Bxxii, 765). Kant's model for this was the traditional model of a rational science that deduces every conclusion from rational, self-evident first principles (*scientia*), legislated by Tempier (1277) and followed (at least in aspiration) by Christian Wolff (B:xxvi). To fulfill this deductivist model, Kant proposed to establish his transcendental account of human knowledge in the *Critique of Pure Reason*, which Kant understood to require transcendental idealism. Kant proposed that transcendental philosophy would establish both the legitimacy of and the parameters for properly scientific (*wissenschaftliche*) metaphysics, which he duly published as *The Metaphysical Foundations of Natural Science* ('MAdN') and *The Metaphysics of Morals*. In turn, the MAdN were to establish the *a priori* principles required to ground and justify empirical physics. This is a grand philosophical vision. Having examined it very closely, I submit that no one could better carry out this vision than Kant did (*KTPR*, chs. 4–6). However, this aspect of Kant's epistemology ultimately serves to undermine its own deductivist model of 'scientific' justification, and thus to reinforce the fallibilist model of justification embedded in Kant's method of transcendental reflection.

Very briefly, Kant's transcendental idealism and his foundational ('top down') sequence of transcendental, metaphysical and empirical principles, fail to prove the key causal principle said to be central to the *Critique of Pure Reason*, that every event has a cause (A188–9, 206/B231–2, 251; *cf.* §47 above). The problem is that Kant's analysis in the *Critique of Pure Reason* expressly addresses only the general causal principle, that every event has a cause. However, the causal principle actually required

(and justified) by the ‘Analogies of Experience’ is the specific causal thesis, that every physical event has an external physical cause (transeunt causality). Kant only distinguished these two principles in the *Foundations* (and *KdU*, 5:181.15–31), where he also recognised that this specific causal thesis cannot be proven on transcendental grounds alone, it also requires metaphysics (he claimed). With this, Kant’s foundational order of philosophical priority is jeopardised. However, careful examination of Kant’s proof of the specific causal principle in the *MAdN* reveals that his key premiss rests, not on metaphysical analysis, but on our empirical ignorance of any instances of hylozoism. With this, Kant’s foundational order of philosophical priority is destroyed, as are the deductivist aspirations to (post-1277) *scientia* embodied in Kant’s grand vision of ‘scientific’ philosophy. Neither Kant’s transcendental idealism, nor his deductivist model of rational, scientific knowledge, can prove apodictically the causal principle we need and use, that every physical event has an external physical cause (or causes). Transcendental idealism provides no answer to Hume’s causal scepticism. Kant does not prove that any uncaused event would undermine all conditions of time determination (specification) (*KTPR* §61.2, *cf.* Harper 2007).

To the contrary, the three *principles* of causal judgment stated and justified in the ‘Analogies of Experience’ must be used successfully (if approximately) in any case in which we do perceive and identify any particular(s) in our surroundings. Kant’s anti-sceptical transcendental proof demonstrates that any human being who is apperceptive, insofar as *S/he* is aware of some appearances appearing to occur before, during or after others, must actually perceive at least some particulars in her or his surroundings, in order to identify even a presumptive, approximate temporal sequence amongst appearances. To this internalists (Cartesians) may reply that they are unaware of using concepts or principles when perceiving their surroundings. This alleged ‘transparency of consciousness’ is inconsistent with any and all enabling conditions of human perception, thought or experience, all of which must be sub-personal and so count as ‘externalist’ factors in human cognition.

59. Corroboration by Critical Comparisons: Melnick, Sellars, McDowell

The interpretive and philosophical significance of these findings can be clarified and corroborated by considering, briefly, the views of Arthur Melnick, Wilfrid Sellars and John McDowell.

59.1. *Melnick*

In his unjustly neglected masterpiece, *Space, Time and Thought in Kant*, Melnick (1989, 6–11, 17–8, 22–5, 29–30, 34–50, 189–204, 466–81,

489) highlights Kant's view that what we sense or intuit is a function both of what surrounds us and of our own corporeal behaviour, but only characterises momentary response sequences (with or without deliberate delay); he does not recognise Kant's conjoint use of the three principles of causal judgment to discriminate persisting substances, which must persist (comparatively, change more slowly) than typically our sensations do (or could do). However, Melnick (1989, 485) misses Kant's clear statements that only third Analogy addresses causal interaction between any two or more substances (B111, *KdU* 5:181; above, §53). The discriminatory use of all three causal principles conjointly to differentiate and identify any one persisting (if also moving or altering) spatio-temporal substance *through* some perceptual-behavioural episode *as* distinct to ourselves, to our perceptual experiencing of it *and* to other particulars in our surroundings (by which alone we can specify our relative locations within our surroundings) suffices to justify causal-modal ascriptions to what we perceive; *i.e.*, that we perceive at least some causally structured, causally interacting spatio-temporal material particulars. These causal modalities do involve counter-factuals, *causal* counter-factuals. Our recognising any particular, however approximately or precisely, requires our corrigible, anticipatory classification of it and its (most salient) features. Our classifications, too, involve counter-factuals, counter-factual which aim to track those causal modalities which structure material particulars and their behaviour, and also to track our perceptual-motor interactions with those particulars. These two sets of modalities are distinct; Kant (A766–7/B794–5, 3:500.2–25) quite rightly faults Hume for assimilating causal modality to our very incomplete, merely probable beliefs about causal modalities (above, §57.1). Kant's proof (justification) of causal modalities is more specific, subtle and much more successful than Melnick (1989, 489, 490; 2006, 175–6) recognises.

59.2. Sellars

In rejoinder to McDowell's (HWV) quite generic model perception, of Someone seeing in the immediate vicinity a red triangular object, Rosenberg (2007b, 272–5) notes that Sellars (IKTE 5) stresses the perspectival character of the exemplary red triangle now perceived by Sam. That is correct and important, but Sellars (IKTE 28, 31, 34, 36) further stresses the episodic, temporally extended character of Sam's perceiving (*e.g.*) something red and triangular to be *there*, both red and triangular as it is; and he also notes that perceiving, such as it is possible for us human beings, is perceptual-*motor* behaviour. Sellars thus improves upon both McDowell and Rosenberg, both in interpreting Kant's theory of experience and in understanding human perception and perceptual judgment.

However, Sellars too does not notice the integral use of the three causal principles of Kant's Analogies in discriminating and identifying any

perceived particular in one's surroundings or any of its manifest features. Sellars thus overlooks Kant's account of the causal modalities which structure any particulars we can at all discriminate, identify and perceive (here used as a success term), and that at least some of these causal modalities pertain to our own perceptual-motor physiology. Recounting his preceding discussion, Sellars states:

Now I emphasized that we do not perceive of the object its *causal properties*. What we see of it are its occurrent sensible features. (IKTE 39)

Previously he observed:

We do not see *of* objects their causal properties, though we see them as having them. (IKTE 22)

This is too empiricist a description and distinction: That we perceive any particular which is sufficiently stable to *be* perceptually discriminated *is* to perceive a relatively, sufficiently stable, *persisting* particular. This persistence is due to its material structure, which is its *causal* structure. We perceive it to be a spatio-temporal, material particular, such as Sellars's model form of a perceptual belief:

This brick with a red and rectangular facing surface. (IKTE 10)

Such a perceptual belief can ground a perceptual judgment such as:

This brick with a red and rectangular facing side is too large for the job at hand. (IKTE 10)

However, like the cool, juicy, nearly white interior of the apple one sees, which one perceives of that apple whilst perceiving its red, shiny ripe surface (IKTE 16, 17), perceiving spatio-temporal particulars to be sufficiently stable material beings is to perceive *of* them their having a material consistency, an integrity, which *is* the causal constitution of each (however inarticulately understood or conceived such causal constitution may be). Any such perceptual discrimination of any perceptible particular is in part *causal* discrimination, Kant has shown. Any implicit or explicit causal judgments one may make about a perceived particular may be very abstract, incomplete and approximate, but we readily enough learn to take greater care not to stub our toes on a random brick lying on our path, in contrast to a random apple having the same kind of proximal location; or again, a dry leaf – whereas wet leaves may be slippery! Any occurrent features or properties we can (and do) perceive of material particulars *are* dispositional; they all manifest features of causal structures of

whatever (material) kinds. The purported distinction between occurrent and dispositional properties, *taken* as dividing two kinds of properties, is a Cartesian-empiricist relic of distinguishing between what one *now* takes oneself to sense and whatever actually is there to be sensed, which one now senses. On the basis of mere sensory inspection we cannot, in any case whatsoever, ascertain what causal conditions may affect, nor which may effect, whatever we sensorily inspect *now*, at any moment. This is one breaking point of Carnap's empiricist semantics (Westphal 1989a, 60–2). Sellars notes the following:

. . . the schema for causality is the concept of uniform sequence throughout all space and time. (IKTE 41)

The full-blooded categories with which Kant is concerned in the *Critique* are the pure categories, specialized in their turn to thought about spatio-temporal objects. (IKTE 45)

Although he notes that the schema of causality must be made to serve all sorts of ground-consequent relations amongst event occurrences (IKTE 43), Sellars neglects the implication that the *schema* for causality must be specified to pertain to specific, perceived sequences, perceptual as well as worldly (thingly), of relative, perceptible stability, rotation or re-location, both our own of our bodily point of view and of particulars surrounding us. We cannot by mere sensory inspection ascertain the causal structure of any material particular, nor of any of its manifest features. Yet this does not entail that its manifest features are merely occurrent rather than dispositional (causal) characteristics. Only because they are manifested by sufficiently stable, causally structured material particulars can we at all sense, perceive, discriminate, judge and come to know any of them and their manifold features, however casual or causally precise we may ultimately ascertain. In this important regard, Kant's is a more robust, more acute and more well-justified Critical commonsense realism than is Wilfrid Sellars's. In this regard, too, I agree with Haag (2007) that Kant's account of perceptual intentionality is superior to Sellars's. I believe my re-examination of Kant's 'Analogies of Experience' (also in *KTPR*) corroborate Haag's findings on independent grounds, insofar as I have devoted more attention to Kant's 'Analogies'.

59.3. McDowell

McDowell (2016) now contends that the view he advocates is occluded by Sellars's account of perception, perceptual beliefs and perceptual judgment. McDowell's (2016) view is in all essentials unchanged from HWV (1998); *cf.* Rosenberg (2007b). McDowell (HWV: 1998, 454n.2/2009, 27n.7) notes that Sellars's account of intentionality in *SM* is tied to his (contemporaneous) account of productive imagination (IKTE), yet, as

Rosenberg (2007b, 270) notes, McDowell begs off, stating ‘I cannot go into this [account] here’. If McDowell could not enter into the details of Sellars’s IKTE in 1998, he had ample time to do so before his (2016). Yet McDowell’s treatment of veridical perceptual episodes remains as generic in his (2016; *cf.* above, §16) as in his (1998), (2009), (2010), (2013) and all else he published on these topics in between. I here conjecture about McDowell’s attempts to diagnose these issues at the very abstract level to which he cleaves.

McDowell once told me that Evans’s (1975) account of identity and predication is ‘not [his] favourite Evans’s because it is ‘so obvious that these claims must have such a structure’. Perhaps ordinary commonsense claims are obviously structured as predicative claims about commonsense particulars in our surroundings, but the common subject-predicate structure of claims is not at issue between Evans and Quine. Evans’s point expressly concerns the mastery of predicate terms (classifications of features of (purported) spatio-temporal particulars) required to *use* these terms in actual, occurrent perceptual contexts to identify by discriminating any such feature designated by a predicate *as* a feature of *that perceived particular*, filling *that* (discriminated, delineated, identified) region of *that* particular. This is why and how Evans’s account of predication as accurate *ascription* holds against Quine’s philosophy of language (in particular, Quine’s dismissal of singular referring expressions).

In contrast, he claims, to Sellars’s view, McDowell contends:

In the conception I have recommended, presence to subjects is provided for by experiential *thinking*. The categorial status with which something is present to a subject in an experience is determined by the form of the thinking that the experience is or involves. Consider a visual thinking whose content its subject can partly express with the words “There is something red and triangular in front of me”. If an experience partly constituted by that thinking is non-defective, then by virtue of the form of the thinking—its having content expressible by a “that” clause—the experience makes something present to the subject with the categorial status *state of affairs*. (McDowell 2016, 114)

What McDowell means by ‘experiential thinking’ is not further specified. McDowell’s characterisation is significantly less specific than Evans’s account of perceptually discriminating and identifying any region occupied by any one particular, or any one of that particular’s manifest features. His characterisation is far less specific than Sellars’s (IKTE, esp. 4–23). McDowell’s characterisation is no more specific or informative than Dretske’s (SK) deliberately modest, yet judicious distinction between simple non-epistemic seeing (of, *e.g.*, some vehicle parked on the street as one now views this scene) and the specifically cognitive achievement involved in seeing of a tire on this vehicle *that* it is flat.

McDowell contends that Sellars's account of intentionality cannot and does not account for anyone actually sensing, perceiving, recognising, judging or knowing any actual object there before her or him. McDowell states:

Sellars holds that if an actual item—for instance a state of affairs or an object—has intentional in-existence in a cognitive act, the cognitive act does not put its subject in a relation to that item. In the Preface to *Science and Metaphysics* (*SM*), he says the chapter on intentionality discharges “a long standing promissory note concerning the *non-relational* character of ‘meaning’ and ‘aboutness’, a thesis I have long felt to be the key to a correct understanding of the place of mind in nature” (ix, my emphasis). This would exclude the conception I have recommended. In my conception, a perceiving is a cognitive act in which a state of affairs or an object has intentional in-existence; that is just a way of saying the act comes within the scope of psychological nominalism. But a perceiving makes a state of affairs or an object present to its subject in a non-Pickwickian sense, and so puts the subject in a regular relation (not just an “intentional relation”) to the state of affairs or object, a relation that can hold only between actual relata. (McDowell 2016, 109)

Sellars's ‘non-relational’ account of meaning or aboutness requires separate treatment (deVries 2005, 171–202; O’Shea 2007, 49–56), but Sellars's view is not what McDowell presumes. Sellars (IKTE 12–21, 24) is emphatic that one sees, believes of, judges about and knows *that apple right there*, including not only *its* surface characteristics, but also *its* juicy, cool, nearly white interior constitution: its interior is within *its* skin; the occluded (‘back’) side is on the opposite of its facing surface; not these constituents of the apple themselves, only their *recognised* ‘actuality’ is intended yet has only ‘intentional in-existence’. McDowell mistakenly contrasts a ‘regular relation (not just an “intentional relation”)’ between a perceiving human Subject and whatever particular(s) Sam perceives (used as a success term). Here McDowell, *not* Sellars, treats intentional relations as non-actual relations. Unlike McDowell, though like those attending his Dotterer Lecture (IKTE), Sellars understands phenomenological approaches to intentionality, including especially their (perceptually) realist varieties (Twardowski 1894, Chisholm 1960, *cf.* Moran 2014). To say that perceiving or that perceptual judgments are intentional relations, in this tradition, is to say that they are genuine percipient and sapient relations to *those* actual particulars one confronts and to which one attends in one's surroundings. Any one of us actual human subjects also stand, quite literally, in real genuine relations to any and all of our surroundings which happen, at any time, to be beyond our perceptual field or out of our thoughts, ‘out of sight, out of mind’ does

not obviate our actual standing within our surroundings. (In the passage quoted above, McDowell mistakes Sellars's account of meaning for his account of perception.)

In this passage McDowell confuses these issues about intentionality and intentional relations by stating:

In my conception, a perceiving is a cognitive act in which a state of affairs or an object has intentional in-existence; that is just a way of saying the act comes within the scope of psychological nominalism. (McDowell 2016, 109)

If it is tenable for McDowell to claim this, it is no less tenable for Sellars to use the language of 'intentional in-existence' (IKTE 13–23, 36–37) in this same Critical commonsense realist connotation, in which case McDowell's earlier objection (quoted just above) falls. The fallibility of our capacities of perceptual judgment does not rule out the infallibility of particular perceptual episodes and judgments made in favourable circumstances. Infallibility about particular perceptual-judgmental episodes is ruled out by the open texture of all our empirical concepts (above, §5); the *episodic* character of perception and our perceptual judgments, anticipating what is next to be perceived; *and* the fact that human perception occupies an entirely *non*-formal domain of perceptible spatio-temporal objects and events. 'Infallibility' can only pertain to momentary takings-to-be, but such takings-to-be are not themselves perceptions of physical phenomena. All our empirical use of these concepts in cognitive judgments is both fallible and also corrigible, *if* we but pay attention to what the unexpected may reveal about the world or our knowledge of it. This corrigibility and fallibility only generate anxieties if one is beguiled by Tempier's infallibilism into fallaciously supposing that unless one knows *everything* about *x*, one *knows* nothing about it. This mistake is ruled out by Kant's theory of cognitive judgment, and by how our concepts and principles guide judgment, but do not univocally specify it.

McDowell presumes to address fundamental epistemological issues without considering such details as what sensory experience is actually like for us human beings. What appears to him to be a 'natural way to understand the idea of fallibility in capacities' (2013, 268) neglects Alston's (1971 [1989, 264]) concise explications of 'infallibility', 'incorrigibility' and 'indubitability' within epistemology. Fallibility concerns possibilities of error; *pace* McDowell, these are not limited to cases of deception. In rejoinder to Burge, McDowell (2013, 262) states an entirely Cartesian-internalist view of the sciences of perception, according to which such science only studies resultant perceptual states, though not the environmental conditions of their generation or their accuracy or veracity. Such a natural science we lack presently, and for the foreseeable future: Sciences of human perception rely upon experimental subjects'

reports of their experiences or their responses to sensory cues, *in* responding to controlled perceptual circumstances. Hence these sciences can, and often do, study perceptual circumstances in which subjects' responses are highly reliable, and those marginal conditions in which reliability declines or vanishes. The 'science' of perception to which McDowell appeals is entirely imaginary. McDowell neglects the details of Sellars's subtle and sophisticated accounts of human perceptual experience and our perceptual knowledge. McDowell thus has in view neither the world nor our perceptual experience of it. His language has gone on holiday (*PI* I §38), expressing little of epistemological significance. McDowell has attended to his broad anxieties about perceptual knowledge, rather than to the extensive and intensive details of either the issues or his chosen texts. Thus he overlooks how the very anxieties he purports to diagnose are creatures of the excessive generality of his chosen, broad level of reflection. All he has to say about that broad level and its apparent oscillations are said in McDowell (2000); the rest is to no avail because his infallibilist proclamations (2010, 2013, 2016) demonstrate he still rides that mythical see-saw. Like Quine, the later Putnam or Richard Rorty, McDowell is welcome to whatever views he espouses. The philosophical problem is instead why such flaccid philosophical thought and writing gain such prominence. That is the work of readers who don't adequately scrutinise an author's views. 'Influence' is no measure of philosophical calibre; Frege's concern about psychologism permutes here, too, by distinguishing in principle between whatever gains influence, and what deserves or merits credibility.⁴¹

60. Conclusions

Does the failure of Kant's deductivist model of a proper science provide aid or comfort for sceptics? No. Extending Kant's new method of transcendental reflection, along the lines developed herein, provides sufficient justification of the legitimate use of the specific causal principle. In part, this is due to Kant's semantics (above, §§26, 55): We can use the general causal principle in connection with (*in Beziehung auf*) particulars only in those cases where we can refer the specific causal principle to spatio-temporal particulars. Once the distinction between these two causal principles is recognised, Kant's Transcendental Deduction and Analogies of Experience can be revised accordingly (yet only slightly), in part by highlighting the fallibilist aspects of Kant's methods, to provide a genuinely transcendental proof of the conclusion of Kant's Refutation of Idealism. This proof is strongly reinforced by Kant's two transcendental proofs of

41. On Putnam's 'internal realism' see Westphal (1997), *xxiii–xxvii*. I examine McDowell's (2010) re-assertion of perceptual infallibilism further in Westphal (2018a), §107.

mental content externalism (above, §§51–54, 56, 58). Kant's fallibilism, together with the failure of both Descartes' and Kant's own deductivist efforts, help show that the infallibilist assumptions involved in global perceptual scepticism are far from innocent or inevitable assumptions. They are instead a key obstacle to understanding our empirical knowledge and our perceptual experience.

Global perceptual scepticism challenges the 'whole of our perceptual experience'. In the Transcendental Dialectic, Kant points out that this putative 'whole of perceptual experience' is itself no object of perceptual experience (A483–4/B511–2). So of course it cannot be justified by recourse to perception! Furthermore, as a 'whole', this alleged 'whole of perceptual experience' is at best an Idea, in Kant's technical sense: a (putatively) comprehensive concept of a totality. Because it is stipulated to comprehend *all* perceptual experience *in toto*, it is itself inherently a *transcendent* Idea, to which we can give no objective validity, because we cannot realise it by referring it in any specifiable way to any localised particular(s). Indeed, the sceptical 'hypotheses' used to generate this alleged 'whole of perceptual experience' are all designed *in principle* to be cognitively transcendent; in principle they cannot be verified or refuted by any empirical evidence or inquiry, because in principle they cannot be *realised* by referring them in any specifiable way to an specific, localised particulars. Consequently, they are 'hypotheses' in name only, and radically distinct in kind from genuine, empirically usable hypotheses; the former are no more than logically consistent thoughts, the latter can serve in ascriptions to localised particulars. This is the cognitive-semantic point undergirding Bouwsma's brilliant exposure of Cartesian scepticism.

Kant's criticisms of these sceptical strategies are underscored by his semantics of singular cognitive reference (§§20.1, 26, 50, 55), which entail that none of these sceptical hypotheses, nor the alleged 'whole of perceptual experience', admit of any determinate reference to any particulars we can identify by localising them. Global sceptical hypotheses achieve no more than the first of the five requirements specified by Kant's Thesis of Singular Cognitive Reference. As no more than a logically consistent thought, they altogether *lack* cognitive standing, and so do not serve to 'defeat' or undermine cognitive justification *at all*.

Finally, Kant's fallibilism and his transcendental proof that we can only be self-conscious of our existence as determined in time (we can achieve apperception) if in fact we are aware, and have some perceptual experience and knowledge, of spatio-temporal, causally active substances in our surroundings, block the sceptical generalisation from occasional perceptual error to the possibility of universal perceptual error (or, *mutatis mutandis*, insufficient cognitive justification). It does so by demonstrating that any world in which we are altogether perceptually deluded is a world in which no human being can be apperceptive. In any such world, no human being can raise sceptical doubts. So if we're alert enough to

raise sceptical doubts, close study of Kant's transcendental proof of realism suffices to allay those doubts ever after. Global perceptual sceptics simply *assume* that we can be self-conscious without being conscious of anything outside our minds. Kant's transcendental proof of realism shows just how portentous is this assumption. If Kant is right, global perceptual scepticism rests on profound, even willful self-ignorance: The question 'What can I know?' (A805/B833) is indeed closely connected to the question, 'What is it to be human?' (A805/B833, *Logik*, GS 9:25). That the predicament envisaged by global perceptual scepticism is logically possible does not remotely suffice to show that it is *humanly* possible.

61. PS: *Scientia* and 'the' Analytic/Synthetic Distinction

Bolzano (*WL* II, §148:87/61) credits Kant with expressly distinguishing between analytic and synthetic propositions, yet faults Kant's explication (*Erklärung*) of their distinction (in terms of whether predicates are contained in a subject term) for 'not entirely corresponding to logical precision' (strictness, *Strenge*). As most commentators, Bolzano reads Kant's introductory glosses on the analytic/synthetic distinction without considering Kant's express methodological discussion of the point when distinguishing between philosophical and mathematical knowledge, and why mathematics disposes over definitions, axioms and demonstrations, none of which *in principle* are available within any substantive philosophical domain (A727–30/B755–8). In contrast to such formal domains of inquiry, philosophy can do no more than explicate (not strictly to analyse) its key concepts. Kant regrets the lack in German of a term for 'explication', but uses the Latinate form (*explizieren*) anyway.

Rejecting the mathematical model for philosophy and also Tempier's deductivist-infallibilist reconfiguration of Aristotle's expressly flexible, Euclidean model for the structure of a scientific discipline (body of knowledge), is not at all to reject the Euclidean or 'axiomatic' model for organising scientific bodies of knowledge; it is to caution about its character, status and use. Beyond the set of most basic logical constants specified by Aristotle's Square of Opposition plus conversion, constants required to specify any species/genus or any class-inclusion relations, specifying any specific domain of inquiry or body of knowledge requires specifying the basic objects or elements within that domain, in part by specifying their concepts. These specifications, however 'formal' they may be made, are synthetic insofar as they are richer than the basic logical constants and so admit of *logically* possible alternatives. The successor function required to specify '+1' and so to specify the most elementary arithmetic is not a formal-logical relation (function); it is a substantive concept or postulate. The dimensionality of space required to specify any domain of geometry, whether Euclidean or non-Euclidean, is a substantive concept or postulate. The enormous power of Frege's mathematical logic stems from

its basic semantic postulates, which correlatively restrict his logic to the domain of mathematics, and ultimately serve to show that mathematics is not reducible to formal logic (because set theory is required and because the successor function is mathematical, not logical).

Kant's incisive remarks about definitions, postulates, conceptual analysis and conceptual explication (A727–30/B755–8) stress a basic epistemological point: Once we use the basic logical constants, together with any substantive specifications or assumptions, to designate any branch of inquiry, we cannot justify any claim to *complete* knowledge of the content of any concept, unless we have *stipulated* that content. This we may do. Kant states outright that such stipulations are fundamental to establishing any mathematics; his point holds generally for pure axiomatic systems. Kant's *philosophical* advocacy of conceptual explication and his rejection of aspirations to conceptual analysis (providing complete, necessary, sufficient specification of intension) expressly caution against over-estimating our comprehension of class-inclusion or species/genus relations (again, outside the domain of the most basic logical constants, or stipulated definitions), so that we cannot univocally and justifiedly distinguish between 'analytic' and 'synthetic' truths. Furthermore, analytic 'truths' only pertain to intension, to class inclusion or exclusion relations which structure conceptual content (specified by sub-concepts which are 'marks' or specifications). Any claim (judgment) regarding any extant particular is synthetic, insofar as no actual instantiation (no extension, with the second 't') of any concept *is* an intension (classification), nor does it belong to any intension (B10–1, 23–4, 40–1, 278n.2, 279–80, 288–94, 627–9).

These are two key reasons why infallibilism is quite literally an inhuman (and irrelevant) 'ideal' of cognitive justification outside the most rudimentary logical domain. Formalise whatever axiomatic systems you wish, the strictly deductive justification of consequences within that system hold only under the substantive specifications made to establish the very domain of that system. These cautions are even more important when any real use of any axiomatic system is made in connection with actual concrete individuals (any actual instances, extensions). This is why the Euclidean model of a science can be very useful, *provided* it is used as the explicative device it is, and not severed from the evaluative assessment of whether or in what regards its basic definitions, postulates, inference principles and principles of application continue to generate precise, informative results of inquiry, or conversely: Whether or in what regards discrepancies within the results of inquiry may instead suggest that revisions of the axiomatic system itself (or some of its constituents) may be required. Productive uses of Aristotle's Euclidean model of a proper science are examined in Betti & al (2010–11), without mention of Tempier (1277), and without mistaking that model for any infallibilist deductivism.

Rather too much of analytic philosophical practice today faithfully follows Tempier's injunction to cavil about mere logical possibilities as justification defeaters, ignoring Kant's and Carnap's (1950a, 1950b) point that the adequacy of any conceptual explication can only be assessed within possible contexts of its actual use, not in merely imaginary contexts of its logically possible use. The latter tendency drives dialectic to degenerate into mere eristic (*cf.* Kisiel 1980), a degeneration fostered by excessive 'specialisation', or rather splintering fragmentation, within the field. The entirely piecemeal approach to philosophical puzzle-solving died in principle in 1950 when Carnap adopted a moderately holistic semantics (Wick 1951), thus corroborating C.I. Lewis (1930 [1970, 10]), that 'inference is analytic of systems, not of propositions in isolation' (*per* above, §13). The semantic interdependence of key philosophical terms, and the substantive interconnections amongst the facets of any significant philosophical puzzle or problem, must and can be turned to philosophical advantage by using them to focus the very point of a philosophical inquiry (*cf.* Toulmin 1949) and to identify key desiderata for successful resolution of the initial problem, whether by solution or dissolution. Only systematic philosophy can exploit our multiple finitudes and fallibilities, provided we bear in mind justificatory fallibilism and Kant's caution about the *imprecision* of the analytic/synthetic distinction outside strictly formal domains. Otherwise, 'analytic' philosophy will share the scornful fate ascribed to Mediaeval philosophers of pointless logic- or locution-chopping, which inevitably results from following (wittingly or unwittingly) Tempier's deeply mistaken infallibilist edict. Everything must be made as simple as possible, yet not any simpler (Einstein 2000, 314). These features of philosophical reflection and assessment undergird my Introductory comments on the shortcomings of the logical orthodoxy central to Williamson's 'knowledge first' approach, which chronically neglects the judgments and assessments required to *use* any formalised syntax and semantics appropriately in explicating our experience and knowledge of the very *res* itself: nature. If we are to understand human knowledge, and *if* we are to understand epistemology and its perennial issues, epistemology must consider judgment first.

9 Kant, Causal Judgment and Locating the Purloined Letter

62. Introduction

Kant's account of cognitive judgment is sophisticated, sound and philosophically illuminating. Yet Kant stressed that gaining, appreciating and assessing illuminating insights and understanding requires a 'changed method of thinking' ("*veränderte Methode der Denkungsart*", Bxvii, 704). New ways of thinking involving fundamentally changed methodology and orientation are not drawn up to order and then adopted. They require changes in philosophical expectations as well as strategies, techniques and *ways* of understanding and assessing philosophical inquiries and their findings. If the inquiries, examinations and findings presented in the previous chapters are sound, there is a serious philosophical question about why Kant's achievements in these regards have been widely neglected or misunderstood for so long. Only part of the answer is that key features of Kant's account of cognitive judgment are widely dispersed amongst various sections of the *Critique of Pure Reason*; common philosophical proclivities have confounded these interpretive difficulties. This chapter clarifies and consolidates the findings of the previous chapters to illuminate Kant's changed method of thinking, its virtues and its achievements.

To begin, recall one central philosophical finding: Kant demonstrates that, to understand and to investigate empirical knowledge we must distinguish between predication as a grammatical form of sentences, statements or (candidate) judgments, and predication as a (proto-)cognitive act of *ascribing* some characteristic(s) or feature(s) to some localised particular(s). With Kant's result in hand, I then elucidate how we have occluded his insight. My results are not merely interpretive, but philosophical, because they show that Kant's account of perceptual judgment accords with, and indeed justifies, a central and sound point regarding language, thought and reference advocated by apparently unlikely philosophical comrades: Stoic logicians, Kant, Hegel, Frege, Austin, Donnellan, Evans, Kaplan, Travis, Wettstein and İlhan İnan, in contrast to 'descriptions theories' of reference, to Quine's notion of 'ontological

commitment', to much of recently regenerated 'analytic metaphysics' and to Williamson's 'knowledge first' approach. These findings underscore some methodological precautions which require re-emphasis today.

One obstacle to appreciating Kant's achievement regarding cognitive judgment is his claim to justify some synthetic propositions *a priori*, by 'transcendental' analysis or proof, which itself requires, Kant held, transcendental idealism (*KdrV* Bxvi–xix, A369–70). About this requirement, I have argued (*KTPR*), Kant was mistaken.¹ Here we may be brief about Kant's aim to justify some synthetic principles *a priori*, because only one synthetic principle is central to this study: Kant's thesis that any *homo sapiens* who achieves apperception at all (and so becomes *sapientes*), only does so on the basis of perceiving some causally structured, causally interacting spatio-temporal particular(s) in her or his environs. Accordingly, we may focus on Kant's recognition that Hume's scepticism about causality and about substance ('body' or physical objects) only addressed two central cases of a host of related conceptual, cognitive and judgmental issues (*KdrV* B19–20, 127–9, A745–6, 760/B773–4, 788; *Prolog.* 4:260; Caird 1889, 1:202). Prompted in part by empiricist scepticism, Kant adopted Tetens's (1777) use of the term "*realisieren*" (*KdrV* A146–7/B185–7) to underscore how demonstrating that we can use any concept (especially any *a priori* concept) *legitimately* in any cognitive judgment requires demonstrating (deictically) that we can locate actual particulars to which we can correctly apply that concept, or which properly instantiate that concept.² Kant also calls this demonstrating the 'objective reality' of a concept or principle (B288, 300–3, 314), or likewise its 'real possibility' (Bxxvi n., 302–3). Kant advocates the converse as well: Showing that some concept is such that we cannot provide it any objective reality, or that we cannot 'realise' it by localising and designating any of its specific instances (extensions), shows that the concept in question is cognitively *transcendent*: we are incapable of using that concept in any legitimate, justifiable cognitive judgment. Kant's *Critique of Pure Reason* develops a profoundly simple, specifically *cognitive* semantics of singular reference, which achieves one central aim of verification empiricism,

1. I stake my case on a strictly internal critique of Kant's transcendental idealism, and argue *en detail* that it is refuted by some of Kant's most important and successful analyses in the Transcendental Analytic. It is disappointing to find critics and reviewers repeatedly rejecting my account by mere appeal to Kant's quadruple distinction between empirical and transcendental senses of 'real' and 'ideal'. Unlike these loyalists, Kant clearly recognised that he is entitled to that set of distinctions only by his positive arguments for his transcendental idealism. What my critics assume as a premiss, Kant recognised could only be justified as a result. My critique of Kant's transcendental idealism directly addresses Kant's attempt to justify that result.

2. Tetens (1777), 38, 44–6, 48–9/(1913), 29, 34, 36, 37–8.

without invoking verification empiricism, meaning empiricism or concept empiricism.³

Kant's cognitive semantics does not rule out second-hand 'knowledge by description' based upon reliable testimony or written reports. Instead it establishes basic cognitive conditions upon acquiring empirical knowledge (including that which can be reported to others reliably), by identifying basic conditions under which alone synthetic statements have specifically cognitive status within any non-formal domain. Kant's cognitive semantics founds an important quintuple distinction between description (intension, classification), *ascription*, *i.e.*, attribution of the predicates contained in *S*'s description to some particular(s) localised by *S*, sufficiently *accurate* or true ascription, (cognitively) *justified accurate* or true description and *sufficiently* (cognitively) *justified accurate* or true description. Only the latter counts as empirical knowledge (*per* above, §26). Kant's analysis of specifically cognitive reference thus shows that philosophy of language, philosophy of mind or formal syntax and semantics may augment epistemology, but cannot supplant it, insofar as neither cognitive justification nor singular cognitive reference can be reduced to, nor substituted by, analysis of linguistic meaning, of mental content or of formal syntax and semantics.

63. The Irrelevance of Infallibilism to Non-Formal Domains

Kant's cognitive semantics also shows that justificatory infallibilism is in principle *irrelevant* to the non-formal domain of empirical knowledge. Strictly speaking, formal domains are those which involve no existence postulates. Strictly speaking, the one purely formal domain is a careful reconstruction of Aristotle's Square of Opposition, including conversion (Wolff 2009a, 2017). All further logical or mathematical domains involve various existence postulates, including semantic postulates. We may define 'formal domains' more broadly to include all formally specified logistic systems (Lewis 1930 [1970, 10]). Whether we construe formal domains narrowly or broadly, deduction suffices for justification within any formal domain because deduction *constitutes* justification within any formal domain. Indeed, a domain *is* a formal domain only insofar as deduction constitutes justification within it. Only within formal domains is justification constituted by provability.

3. Kant's semantics is much more sophisticated than Coffa (1991) recognised; see Melnick (1989), Hanna (2001), *KTPR*, Bird (2006a), Haag (2007). Melnick's unjustly neglected (1989) first made Kant's semantics evident to me, including Kant's understanding of the defects of both causal and descriptions theories of reference.

The relevance of any such logistic system to any non-formal, substantive domain rests, however, not upon formal considerations alone, but also upon substantive considerations of how useful a specific logistic system may be within a non-formal, substantive domain (Lewis *MWO* 298; *cf.* Carnap 1950b). The use of any specified logistic system within any non-formal domain does not *suffice* for justification within that domain; justification within that domain also requires assessment of the adequacy, accuracy and specific use of, *inter alia*, the semantic and existence postulates which partially constitute and delimit that domain. Consequently, within any substantive domain, fallibilism is no sceptical capitulation, not because infallibilist standards of justification are too stringent, but because *in principle* they are inappropriate, they are *irrelevant* to any and all substantive domains. Conversely, within any substantive domain, a mere logical possibility as such has no cognitive status and so cannot serve to 'defeat' or to undermine (refute) an otherwise well-grounded line of justificatory reasoning within that domain. The domain of (putative) empirical knowledge includes spatio-temporal objects and events; accordingly, empirical knowledge is a non-formal domain. Consequently, Kant's analysis of singular cognitive reference rules out the ideal of infallible justification (post-1277 *scientia*) within the entire non-formal domain of empirical knowledge. Recognising that only fallibilist accounts of justification are tenable within the non-formal domain of empirical knowledge concedes nothing to scepticism (*cf. per* chs. 1, 2, 8, 10).

In view of Kant's Critique of cognitive judgment, including his cognitive semantics of singular reference, we must distinguish between the literal and full meaning of his causal principles as formulated in the 'Analogies of Experience' (their intension), and the legitimate, justifiable *cognitive* significance of any judgments we can make *using* those principles. This accords with Kant's calling his analyses and justification of these principles 'Analogies', insofar as these causal principles regulate our causal judgments by guiding our identifying efficient causes of observed spatio-temporal events. How fully or precisely we may identify causes and effects is a matter for empirical inquiry, whether commonsense, diagnostic, forensic or natural-scientific (*cf.* Harper 1984a). Because our causal judgments are discriminatory (in the ways indicated in ch. 8), we are only able to discriminate apparent from real changes of states, locations or motions of particulars insofar as we identify, sufficiently to recognise them at all, some other physical events which cause those changes, so as to distinguish those objective, physical changes from merely apparent changes which result from our contingent observations, including our bodily comportment.

Making such discriminatory, perceptual-causal judgments to identify particulars within our surroundings requires anticipation and imagination to consider, not any and all logically possible alternatives to an apparently perceived causal scenario, but to consider relevant *causally*

possible alternatives to an apparently perceived causal scenario. (The ‘imagination’ required is not imaging, but empirically informed counterfactual reasoning about causal possibilities.) Yes, already in 1787 Kant developed a very sophisticated, profoundly anti-Cartesian, ‘relevant alternatives’ epistemology (*per above*, §§22–33, 55–59; Milmed 1969; Strawson 1974, 1979; Sellars 1975; *KTPR*).

64. Critical Philosophy and Philosophical Self-Criticism

The points made above about the necessarily conjoint, discriminatory use of all three of Kant’s causal principles, expounded and justified in the ‘Analogies of Experience’, were established by Guyer (1987),⁴ and have been restated, augmented and highlighted in my subsequent research several times. Yet Kant’s commentators continue to disregard the integrity of Kant’s ‘Analogies of Experience’.⁵ I surmise this results from several habits of thought, all over-due for Critical reconsideration.

64.1. *Kant’s Analytic Commentators*

The infallibilist presumption that nothing short of provability suffices for justification has two fatal consequences: conceptual analysis is the sole legitimate method of philosophy, and mere conceivability of a logically possible alternative suffices for refutation. This infallibilist orthodoxy is demonstrably Mediaeval, proclaimed by Étienne Tempier in 1277 (Piché 1999, Boulter 2011).

Frege was highly critical of ‘psychologism’, of mistaking psychological considerations of how we think or judge for philosophically central, indeed for much more fundamental issues of how we *ought* to think or judge: issues concerning *validity*. Recently I had occasion to read widely in latter 19th-century (C.E.) theory of knowledge, including neo-Kantianism, and found the target of Frege’s critique strewn across the range of European and North American philosophical writings. Carnap (1950a, §11) and the logical empiricists radicalised Frege’s rejection of psychologism, eschewing even logical analysis of judgment to focus upon propositions, their proper formulation and use, and their evidence bases. According to this policy, only that which we can state explicitly, clearly and accurately can we rationally assess and, when warranted, accept; and only that which we can state explicitly, clearly and accurately can we analyse using the resources of modern logical techniques. This focus

4. Guyer (1987), 168, 212–14, 224–25, 228, 239, 246, 274–75.

5. Allison’s (2004, 260–74) second edition adds discussion of Kant’s Third Analogy, and considers Guyer’s views of the Third Analogy, yet Allison neglects Guyer’s finding about the integrity of the Three Analogies, as do Melnick (2004, 2006), Bird (2006a).

upon the use of logical techniques, so far as possible, within philosophy was further promoted by Quine, Davidson and Fodor, very much at the expense of ordinary language philosophy (*cf.* Tanney 2013), *and* at the expense of neglecting Carnap's (1932–33, 1932–33, 177–80; 1942, §5; 1963, 923, 925–7) repeated insistence that his formalised syntax and semantics are *not* self-sufficient, but require for any *actual* or *real* use their proper complement: 'descriptive semantics', which identifies observation statements made by natural scientists 'of our cultural circle'. Their observation reports require satisfying, directly or indirectly (*via* instrumentation), Kant's semantics of singular cognitive reference (*cf.* below, §§65–73). Carnap's 'descriptive semantics' belongs to the third domain of language studies identified by Morris: pragmatics, which concerns actual language use in actual contexts by actual people actually to say something significant about some actual particular(s), of whatever sorts they indicate (deictically), whether directly or indirectly.

In accord with analytical focus upon propositions, and in view of Hume's formulation of issues about causality, Kant's commentators strongly tend to focus upon Kant's three principles of causal judgment in the 'Analogies of Experience' as no more than three mutually independent propositions, and on 'causality' only as 'event causation', where 'event causation' is conceived only as a sequence of one happening and then another happening; these may be of repeatedly paired instances of kinds, but no consideration is given to how they come about, nor to how we can localise and identify either the (purported) cause or the (purported) effect; *i.e.*: they have presumed a mere regularity 'theory' of causality. By focussing too much upon mere principles and not enough upon their use in (putative) cognitive judgments within putative perceptual contexts, such commentators thus neglect the importance of Kant's point, prefigured by Hume's encounter with the porter, that the always successive order in which we merely take in sensory appearances *in principle* cannot distinguish between objective succession and objective co-existence (successively perceived). Accordingly, such commentators continue to misread Kant's 'Second Analogy' as concerning Humean, merely statistical correlations of distinct events; whereas (Beck noted) Kant's 'Second Analogy' only concerns successive states of any *one* substance. Nevertheless, Beck neglected three important consequences of this fact: (1) Kant only defends transeunt causality between distinct substances in the 'Third Analogy'; (2) therefore, competent, sufficiently accurate use of *all three* causal principles *together* is required to identify any *one* causal sequence or process we identify, by distinguishing it from its causally possible alternatives (which would instantiate either of the other two principles of causal judgment); (3) we can only make such discriminatory causal judgments in regard to *spatio-temporal*, causally interacting perceptible substances. In Kant's view, this is not a general truth about knowledge as such, nor about causal concepts or principles

as such, nor about causality as such. It is general truth about human perception and empirical knowledge using our actual cognitive capacities within our actual environment. As Kant noted, ‘that something occurs, *i.e.*, that something or a state begins to exist, which was not heretofore, cannot be empirically perceived where there is no prior appearance which does not contain this state’ (A291–2/B236–7). The initial event beloved of Humean causal theorists must itself first be identified *as occurring*, which requires us to have identified prior circumstances, which requires that we have already differentiated those concurrent and persisting circumstances from our always-successive experiential intake from them. Kant’s key point about causal judgment turns on the causal discriminations involved in distinguishing those aspects of sequences within our experiences which *are* produced by particulars surrounding us, from those aspects of the same sequences which instead only reflect our changing perceptual activity as we experience perduring, perceptible circumstances surrounding us (A292/B237). We don’t first perceive an event, and then, knowing nothing other than that, inquire into the cause of its occurrence; identifying any new appearance *as* an event in the world, and not merely an apparent change induced by our changing our viewpoint, already involves, if implicitly, sub-personally, discriminating that new event within our surroundings, which involves *causal* discrimination and localisation (however approximate) of relevant particulars and some of their apparent features. Humean causal scepticism is a direct consequence of Cartesian internalism and sensory atomism (*per* above, §57).

These oversights by recent analytic commentators are highlighted by the general neglect of P.F. Strawson’s later, highly Kantian essays and his later essays on Kant. Strawson recognised deficiencies in *The Bounds of Sense* (1966) regarding both Kant’s *Critique* and the core philosophical issues, upon which he improved significantly in ‘Kant’s New Foundations of Metaphysics’ (1997b), ‘The Problem of Realism and the *A Priori*’ (1997c), ‘Imagination and Perception’ (1974) and ‘Perception and its Objects’ (1979). These latter two concern central issues of perceptual judgment; their Kantian credentials are apparent when compared to Milmed (1969) and to Sellars (IKTE).⁶

Long-standing rejection of issues about cognitive judgment within analytic epistemology resulted not only from seeking to avoid ‘psychologism’; it also resulted from the implicitly though fundamentally Cartesian aspiration to refute the epistemological nightmare of global perceptual scepticism. It is significant that all of Gettier’s (1963) infamous counterexamples centrally involve what soon became known as ‘externalist’ factors bearing upon the justificatory status of Someone’s beliefs, factors such that *S/he* neither was, nor could easily become, aware by simple

6. Also worth studying in this connection is Wolff (1960).

reflection. These may be environmental, or they may concern features of *S*'s neurophysiology of perception, or *S*'s inference patterns. Gettier's analysis echoed Carnap's distinction, made explicit in 1950, though central to his philosophy from at least 1928, between the methods of conceptual analysis (strictly speaking) and conceptual explication. Less familiar still is that Carnap's (1950a, 1–18) distinction between these two methods marks the same distinction, in the same terms, and for very much the same reasons as had Kant (*KdrV* A727–30/B755–8; above §61).

Sceptics remain impressed by the fact that all of our experiences and beliefs could be as they are, even though as a simple matter of logic they could all be false (Stroud 1994b, 241–2, 245) or (also) unjustified, a telling oversight in Stroud's altogether standard formulation of the alleged problem. What this logical point instead demonstrates is that cognitive justification (regarding empirical knowledge) is not reducible to logical deduction! Kant recognised this in his distinction between general logic and a specifically 'transcendental logic' (A131/B170), which considers the various possible and necessary roles of *a priori* concepts and principles within human experience and knowledge, their respective domains, and the conditions under which their use can be legitimate (or not). Kant understood that understanding human knowledge requires understanding how knowledge is possible for beings constituted as *we* are. So doing requires a basic inventory of our characteristically human cognitive capacities; Kant deserves credit for having provided the necessary minimum inventory (above, §30).

To inventory our most basic cognitive capacities Kant pursued this insight:

Now it is indeed very illuminating: that whatever I must presuppose in order at all to know an object, cannot itself be known as [an] object (A402)

Pace Nietzsche,⁷ Kant did not neglect the question, 'How is Immanuel Kant possible?', *i.e.*, how can any philosopher investigate, assay, assess and compose a credible, cogent *Critique of Pure Reason*? Kant recognised that no critique of pure reason can be conducted by Cartesian reflection, nor within the constraints of Hume's fork (only logically necessary truths or falsehoods can be known *a priori* as mere relations of ideas, whilst any synthetic proposition can be known, if at all, only on the basis of empirical evidence regarding matters of fact), *nor* by mere conceptual analysis. Against Leibniz, Kant noted, *e.g.*, that no causal relation can be established by mere conceptual analysis, nor can any other synthetic propositions be justified *a priori* merely by conceptual analysis (B13,

7. Cf. *Morgenröte*, pr. §3.

A216–8/B263–5, *cf.* A716, 717–8/B744, 745–6). The entire effort to identify in (or through) Kant's texts a purely analytical refutation of scepticism by valid 'analytic transcendental argument' (*cf.* Strawson *BoS*, Bieri *et al* 1979, Stern 1999a) was ill-conceived and ill-fated from the outset; nor is weakening the aspirations of (alleged) transcendental analysis to mere belief (Stern 2000) any avail. The key shortcomings with that approach was its focus upon concept possession and its reliance upon conceptual analysis, whereas Kant had learnt from Tetens that the key issues concern justifiable *use* of concepts (their deictic referability to relevant instances), the necessary *a priori* conditions of such use, which require conceptual explication informed by transcendental reflection upon what is possible for beings with our logically contingent cognitive capacities (12 basic forms of judgment; 2 forms of sensory intake, 2 key concepts of 'space' and of 'time'). Neither doxography nor doxology can serve as, nor substitute for, sound epistemology.

Kant is right that we need a fundamentally 'altered method of thinking' (Bxviii, *cf.* A270, 676/B326, 704). Kant's method of transcendental reflection is subtle, sophisticated and defies brief summary.⁸ Some of its key constructive strategies were outlined, examined and defended above (§§19–30, 48–60).

Devotés of empiricism, internalism or infallibilism generally concurred with Strawson's (*BoS* 32) castigation of Kant's account of sub-personal cognitive functions and processes as an entirely 'imaginary subject' of 'transcendental psychology'. Guyer (1989) showed that Kant's analysis of the sub-personal cognitive processing effected by transcendental power of imagination is necessary for any cognisant being who synthesises sensory information over time, in response to stimulation by spatio-temporal objects and events (*cf.* A139/B178, 298). In reply, Strawson (1989, 77) graciously retracted his 'somewhat rude' castigation of Kant's transcendental psychology. As noted above, in subsequent articles Strawson had greatly improved both the philosophical and the exegetical calibre of his Kantian account of perception. Brook (1994, 2016) has shown how very prescient is Kant's cognitive psychology, by showing how very well it serves functionalist cognitive psychology and allied efforts in the cognitive sciences.

None of these epistemological advances or insights can result from conceptual analysis pure and simple. Instead, as both Kant and Carnap recognised, within non-formal domains we can at best aspire to cogent conceptual explication, where our conceptual explications (*explicandae*) must not only clarify their *explicatae*; they must also *improve* upon their *explicatae* within their original contexts of use. Ineluctably this invokes important elements of semantic as well as justificatory externalism.

8. See Wolff (2009b, 2017), Longuenesse (1998), *KTPR*.

Because *explicandae* cannot be provided necessary and sufficient conditions for their correct use, they are in principle incomplete (or cannot be known to be complete), and they are corrigible and revisable. Consequently, *explicandae* must be assessed in possible contexts of their actual use, *not* within merely imaginary contexts of their logically possible use! This, too, is part of *realising* our concepts and principles, to demonstrate that they have a legitimate use and meaning in deictic connection to actual extentions (instances). Talk is cheap; cogent philosophical explication and justification must be earned. Mere logically possible worlds are to no epistemological avail, because such ‘worlds’ are merely sets of expostulated intensions.

The ever-ready question from audiences or readers today, ‘But couldn’t s/he say . . .?’, *in principle* cannot count as a cogent critical question, unless and until so saying is shown to have a significant role within a cogent philosophical account of the topic at issue. Yes, careful scrutiny of what is stated, and what is not, is crucial; as is scrutiny of valid and sound inference. However, these skills and strategies cannot suffice for cogent philosophising, which also requires probing and thinking through philosophical issues and problems systematically, in detail and within their relevant contexts. Logical inferences alone do not constitute justificatory relations; we must also know which statements are to serve as premises for which others, why so, and how credible they are (not). It should not be necessary to state so basic a point, but for the fact that it is ever more commonly ignored by ‘scholars’, ‘commentators’ and (inevitably) by their students.

Needless controversy about whether Kant aimed to respond to Hume’s problem of induction persists today (*cf.* De Pierris & Friedman 2013, §2). Yes, Kant argues (soundly, I argue in *KTPR*) that any world in which we can be so much as aware that some appearances to us seem to occur before, during or after others, is a world exhibiting a sufficient minimum of perceptibly identifiable causal interaction amongst individuals so that we can identify some of them and distinguish them from ourselves. Kant further argues that causal relations hold amongst individuals belonging to types. Those demonstrations, however, by design entail nothing about whether, how often nor for how long any type of causal relation recurs within nature, nor within our experience(s). They also entail nothing about our knowledge, justified belief or reasonable surmise about any specific types of causal relations or causal laws. As for ‘knowledge of the future’, this is a misnomer: expectations we have aplenty, but there is nothing to be known, neither is there anything about which to err, unless and until it occurs. This basic constraint on any empirical knowledge is justified by Kant’s semantics of singular cognitive reference. That Kant claims to have solved ‘the Humean problem’ regarding our ‘entire capacity of pure reason’ (*Prol.*, *GS* 4:260) neither states nor requires that this domain include the problem of induction; indeed, in principle it cannot be included because it is no issue of *pure* reason.

The following three principles concern causality and causal relations:

‘Each event has a (sufficient, total) cause’.

‘Each specific kind of event has its specific kind of (sufficient, total) cause’.

‘Some specific kinds of (sufficient) causal relations are instantiated repeatedly’.

None of those causal principles, individually or conjointly, can or does address the following epistemological or empirical (*i.e.*, *cognitive*) claims:

‘We can (or do) know that each event has a (sufficient, total) cause’.

‘We can (or do) know that some specific kinds of event each has its specific kind of (sufficient, total) cause’.

‘Some specific kinds of (sufficient) causal relations are instantiated repeatedly within human experience’.

‘We can (or do) know that some specific kinds of causal relations are instantiated repeatedly’.

‘We can (or do) know that some specific kinds of causal relations which evidently have been instantiated repeatedly shall continue to be so instantiated indefinitely into the future’.

Hume’s ‘problem of induction’ is epistemological, not causal; ‘causal’ relations may be (causally) necessary, exceptionless causal laws, but their existence, instantiation or occurrence does not underwrite our beliefs about them in any way which justifies our claiming to know, demonstratively or justifiedly, that they *are* exceptionless causal necessities or causal laws (in whatever (im)precise form they are formulated by us) which *shall* continue to be exhibited within nature. (This is one key reason why Peirce spoke of ‘generals’ rather than ‘universals’ in nature, especially regarding laws of nature and natural kinds.)

For sound Critical reasons Kant was a fallibilist about cognitive justification across the empirical domain, regarding instances, classifications (kinds) and natural laws. More directly: causal and classificatory *principles* are used to formulate (candidate) cognitive claims, but the *cognitive* significance of such principles so used pertains to those instances or classes of individuals so judged. The *intension* of the principles we use may be unrestrictedly universal, but their intension alone cannot and does not determine (specify) the scope of any *knowledge* we may acquire by using those principles in cognitive judgments. These latter issues concern actual extentions (instances) of those principles, and whatever knowledge we may obtain of those extentions. These are direct corollaries to

Kant's semantics of singular cognitive reference (above, §26). Perhaps the nature of nature, or (*e.g.*) the natures of chemicals, may not change over time; nothing we can *know* suffices to justify the judgment (nor the surmise) that the nature of nature, or the natures of chemicals, *cannot* change over time. This is no sceptical conclusion; it is merely sceptical about mistaking the scope of mere conceptual intension for the scope of cognitive reference, and so of empirical knowledge, which concerns (localised, identified) extensions. Understanding empirical knowledge requires distinguishing the unrestricted scope of mere conceptual intension (classificatory content) from the actual scope of knowledge of those particulars or kinds (including processes and causal relations) known to humankind. In principle, epistemology requires richer resources than are provided by the analysis of propositions, mental content or philosophy of language. These latter studies may augment, but cannot supplant epistemology (*per* above, §§1–18, 62; *cf.* below, §§84–89).

64.2. *Kant's Phenomenological Commentators*

Kant's phenomenological commentators recognise more readily Kant's points about how our experiences and cognitive judgments are context- and occasion-specific. However, they tend to lose the specificity and the justificatory achievements of Kant's analysis by engaging in purely descriptive, hence non-explanatory, non-justificatory, phenomenology; or by uncovering further (putative) necessary structures and conditions of our capacity to judge. Buchdahl (1992) realised that Kant meant something significant by using the term "*realisieren*" (to realise), but mistakenly assimilated it to a broadly Husserlian framework of ontological reduction and realisation (Westphal 1998c), missing Kant's adoption of the term from Tetens.

Though Husserl comments at length both on Hume's and on Kant's theories of perceptual knowledge, he is antecedently so convinced he already commands profound new insights into human experience and its *a priori* transcendental principles and basis, that his purported "*Phänomenologische Studie über Hume's Abstractionstheorie*", as he titles chapter 5 of his second logical investigation (Husserl 1901, §§32–39, + Anhang: 205–13), is no phenomenological study of Hume's views at all, but rather recites Husserl's disagreements based upon his presumed greater insight into the relevant cognitive-experiential phenomena and their structure and character. Rather than phenomenological re-examination, Husserl offers a lengthy rejection by *petitio principii*. The same approach is taken in Husserl's *Formale und transzendente Logik* (1929), which concludes its sixth chapter (§§62, 99–100) by returning 'from this historical-critical excursus to our main theme' (1929, 235). His approach and attitude towards Hume, Kant and other predecessors is typified by his article 'Phenomenology' for the *Encyclopaedia Britannica* (14th ed.; Husserl

1927–28); and also by the same approach and attitude of his doctoral student, C.V. Salmon (1929), who wrote his dissertation on Book I of Hume's *Treatise*, purporting to disclose *The Central Problem of David Hume's Philosophy*.⁹

Husserl's expositors continue to cite Husserl's discussions of, e.g., Hume or Kant, referring to the master's extended "*Auseinandersetzung*" with them in countless volumes of *Husserliana*, but take as little note as he of the cardinal distinction between a philosophical *Auseinandersetzung* and mere *petitio principii*. Husserl's so-called 'criticism' of Kant's or Hume's views document Husserl's dissatisfactions with them, his rejection of them and his disagreements with them. Yet all his 'critical' remarks remain entirely external and as supremely self-confident as anything Quine wrote from his lofty extensionalist point of view (Westphal 2015a). This is evident throughout the most detailed examination of Husserl's relations to Kant, Kern's (1964) *Husserl und Kant* (esp. §§10–11). Even so sensitive and sensible a commentator as Dan Zahavi (2003, 108) neglects Kant's rooting our discriminatory causal judgments (in part) in our bodily comportment, as does Smith (2003), though Smith's *Husserl and the Cartesian Meditations* is exoteric and critical as well as expository, and pays rather better attention to Hume.

In sharp contrast to such discussions stand Meinong's (1877, 1882) studies of Hume's nominalism and theory of relations (*T* bk 1). Meinong's massive articles, together, they are tantamount to a detailed monograph, belong to the very best scholarship on Hume's theories of ideas and of relations. Regrettably, he neglects Hume's porter (*T* 1.4.2), and devoted no comparable study to Kant's theory of perceptual experience and knowledge.¹⁰

Gurwitsch (2009–10, 1:107–30; 2:140–7, 175–7) devotes significant attention to Hume's theory of perception and of the identity of perceptible things, and notes some genuine difficulties with Hume's account. Gurwitsch focusses on Hume's model of the mind as a bundle of continually successive perceptions, but focusses on how those perceptions model the human mind and our experience of temporality, thus neglecting the problems they raise for Hume's official empiricism (the Copy Theory, Concept Empiricism and the three 'laws' of psychological association). Consequently, Gurwitsch's criticisms are less penetrating than Meinong's, and likewise fail to capitalise upon Hume's perplexing porter, and upon Kant's Critical re-examination of those problems. Gurwitsch (2009–10, 2:172, 315–6) mistakenly ascribes to Kant a Humean view of sensory

9. The much briefer doctoral dissertation by Sauer (1926) is no different in this regard, but merits no further attention here. Husserl's (1902–03) lectures on epistemology do not improve on the situation here documented from his published writings.

10. I have found none, and none is mentioned or suggested by Chrudzinski (2007).

data, thus disregarding Kant's sensationist account of sensations.¹¹ He also neglects Kant's discriminatory analysis of perceptual-causal judgments. These points are not improved in Gurwitsch (1957) or (1959), although in both he discusses the example of a house, his own study within it, and its location within its surrounding neighbourhood, yet he neglects Hume's discoveries within his study about his surroundings and the porter's arrival, and also neglects Kant's example of perceiving a house, in contrast to a ship sailing in a river.¹² Gurwitsch (1990, 128–32) focuses solely upon Kant's 'Second Analogy', and contends that Kant's analysis fails to address the problems involved in any plurality of persons identifying one and the same spatio-temporal causal sequence or process, because Kant lacks an account of intentionality.

To the contrary, Gurwitsch too failed to identify the integrity of the sole use of Kant's three causal principles in the 'Analogies of Experience' (*per Guyer*), and that only in connection with the 'Third Analogy' do Kant's principles of causal judgment refer, *solely*, to *spatio-temporal* objects, events, processes and phenomena. (Kant's account of intentionality is examined above, ch. 8.) In part this appears to result from Gurwitsch's focus upon the Leibnizian backdrop to Kant's account of transcendental unity of apperception, and a consequent, if perhaps inadvertent, emphasis upon Kant's transcendental idealism to the neglect of Kant's empirical realism. Perhaps Kant identified necessary, though insufficient *a priori* transcendental conditions of perceptual experience, judgment and knowledge (in particular, by not examining their transcendental, formal though material conditions), yet it is remarkable how Husserl, Gurwitsch and other phenomenological expositors neglect Hume's and Kant's insights and achievements, however incomplete they may have been.¹³

Heidegger's engagement with Hume is early and indirect, mostly cast in terms of Hume's later-day philosophical representatives (characteristic is Heidegger 1912). His interests are already differently focussed, towards what becomes his observation that the scandal of philosophy consists, not in the lack of proof of the external world (*KdrV Bxxxixn.*), but in the continuing search for one (*S&Z, §43a./205*). In these years

11. According to sensationism (about sensations), sensations typically are components of acts of perceptual awareness of something in one's surroundings, and only rarely are themselves *objects* of one's self-conscious awareness. (Chisholm's adverbial account of appearing is similar.)
12. Gurwitsch's example of perceiving a house: (1957 [2009–10, vol. 3]), 495, 499; (1959), 421, 423–4, 431, 435. His editors, too, neglect Kant's and Hume's perceptive precedents.
13. Sherover (1971) is centrally concerned with Kant's central concern with temporality, but mentions Kant's 'Analogies of Experience' and 'Refutation of Idealism' only in passing, and so neglects Kant's detailed account of the causal judgments by which alone we are able to be aware of our own existence as determined in time.

prior to *Sein und Zeit* (1927), Heidegger's central concern is with standard philosophical language, and its tendency to lull us into assuming that once we have the right concepts and theories, and the methods for using and justifying them, we can disregard the experiential circumstances out of which these philosophical resources grow and on which they continue tacitly to depend (cf. Scharff 2019). Husserl's constant concern with properly posing 'the' fundamental question of philosophy by discovering and devising 'the' best concepts, principles and domain of (allegedly transcendental) phenomena surely prompted Heidegger to ponder and probe the underpinnings of whatever problematic philosophers explicitly formulate and address. Early on, Heidegger characterised philosophical hermeneutics as not itself a philosophy, but rather as solely concerned with this question: 'In welche führende Hinsicht ist das Gegenstandsfeld der Philosophie gestellt?' (1923, 40)¹⁴; 'In what leading regard is the domain and objective of philosophy posed and characterised?'. In this regard, Hume's psychological treatment of 'cause' is more interesting to Heidegger for how Hume struggles to do justice to how this idea is used, as if relations between strictly (1:1) correlated impressions really were connections, within the dictates of Cartesian preconceptions about our human form of mindedness, our experience and the world we inhabit.¹⁵ Hume's struggles are reiterated though not remedied by the turn-of-the-century Humeans Heidegger (1912) lists. Heidegger's lectures on Kant's *Kritik der reinen Vernunft* don't examine Kant's Principles of causal judgment closely (e.g.: 1935–36, §27), and so overlook what Guyer noted.

Analytical, phenomenological and historical-scholarly commentators chronically miss, and continue to miss, what Kant takes over from Tetens about 'realising' our concepts or principles by demonstrating that we can and do locate relevant instantiations of them; nor do they understand why Kant took over this concern.¹⁶ Consequently, they also typically err about what Kant means by the 'real possibility' of a concept, which is *not* that there might be such a thing as (e.g.) a purple guitar, though there was none when F.L. Will (1969 [1997, 12–3]) used this example. Kant expressly warns against inferring from the logical possibility of a concept (its logical consistency) that this concept is also really possible (A596, 602, cf. 720/B624n., 30, cf. 748). Real possibility, transcendently speaking (as in Kant's Postulates; A218–35/B264–74, 279–87), requires consistency with all the *a priori* conditions of possible apperceptive experience, *i.e.*, the categories plus locatability within space and

14. Cf. Heidegger (1923), 19–20, 49, 58–60; (1998), 15–16, 39, 46–8.

15. These remarks on Heidegger result from correspondence with Bob Scharff, and some formulations come directly from him. Thanks yet again, Bob!

16. My sole point here concerns an important oversight; I do not dismiss these authors' positive contributions (cf., e.g., Zahavi 2009).

time, using the concepts ‘space’ and ‘time’ specified to circumscribe the relevant region and period within which to locate the particular(s) so conceived. *This* is the transcendental sense of ‘real possibility’. However, that transcendental sense does not exhaust Kant’s issues of ‘real possibility’ in using concepts to make judgments. So far as this writer knows, only when the performer known as Prince ordered and purchased a flamboyantly purple guitar did the concept ‘purple guitar’ come to have ‘real possibility’ in *Kant’s* full, referable-in-practice, empirical sense of this designation. Kant’s sense of ‘real possibility’ accords entirely with his use of Tetens’s sense of *realisiren* and with his own sense of ‘objective validity’; each requires that we can in fact localise at least one relevant instance of the concept or principle in question (A137–8, A581–2/*Bxxvi n.*, 176–7, 301–2, 302–3, 609–10).

65. Philosophical Specialisation and Philosophical Oversight

This pervasive neglect (§64) of core issues and features of Kant’s account of discriminatory causal-perceptual judgment, and of Guyer’s (1987) landmark examination and defence of Kant’s account in those regards, apparently results from scholars thinking about what is stated in a text, without thinking through the *problems* addressed by that text, in part by attending only to one formulation of them. If it is not stated explicitly and directly, it’s not part of the text. This simplistic principle of interpretation is misguided. Crucial to understanding and to assessing any worth-while text is to ascertain whether the text, or the view(s) developed in it, provide or suggest resources to respond to questions readers may ask, which may not be directly answered explicitly by that text. It is also necessary to scrutinise carefully an author’s reasons and reasoning, and how these relate to the author’s express claims or theses. Otherwise we miss those rich occasions on which an author may achieve more or better than *S/he* expressly claims or aims to achieve. Kant’s writings reward such attention, as does (*e.g.*) Evans (1975). Only by reading in this way have we any means or occasion by which to re-examine *our own* predilections and to re-evaluate our own favoured philosophical formulations. In this important methodological and substantive regard, Nietzsche was right both about perception and about philosophical thinking:

There is *only a* perspective seeing, *only a* perspective ‘knowing’; and *the more* affects we allow to speak about one thing, *the more* eyes, various eyes, we know how to use observe the same thing, the more complete will our ‘concept’ of this thing, our ‘objectivity’, be. (GM 3:12; *cf.* FW §295; EH 1:9)

Accordingly Nietzsche recommends training oneself to adopt a variety of perspectives:

. . . to see differently in the [vedantic or Kantian] way for once, to *want* to see differently, is no small training and preparation of the intellect for its eventual ‘objectivity’ – the latter understood not as ‘disinterested contemplation’ (which is absurd nonsense), but as the capacity *to control* one’s *pro* and *contra* and to shift them in and out, so that one knows how to make the *diversity* of perspectives and affective interpretations useful for knowing. (*GM* 3:12; *cf.* *EH* 1:1)¹⁷

No one philosopher, no one period, no one style or tradition of philosophy has a monopoly on any core philosophical issue. Serious study of contrasting or opposing analyses, approaches, methods or formulations is invaluable, as invaluable as it is ever more rare in a field that has fragmented itself into a myriad of (supposedly) mutually independent sub-specialties, schools, movements, problem-domains, their ever more specialised journals and their increasing mutual irrelevance. The consequences of these developments are ever more apparent in the growing cleft, in both quality and quantity, between the best philosophical research and that which is most topical, *i.e.*, most discussed. For example, J.L. Austin, now widely regarded as a narrow philosopher of language, thought and wrote so cogently about philosophy of language because he advocated and himself pursued comprehensive study of philosophy and allied fields. (This I have learnt from one of his very accomplished tutees, Graham Bird.)

The slogan that ‘sense determines reference’ has echoed down analytical folklore with undue consequences. Once detached from Frege’s own view of *Sinne*, and having rescinded a conceptual ‘knowledge by acquaintance’, the notion that ‘sense determines reference’ has lived on, explicitly or (much more often) implicitly as a descriptions theory of reference, a crucial enthymeme in Kuhn’s (1996, 101–2) best argument for paradigm incommensurability, and the target of Kripke’s (1980) withering criticism. It is fine to use an explicit, fully articulated description to explicate the content of a sentence, statement, proposition or perhaps even an attitude. However, no such fully articulated description alone is sufficient, or necessary, to specify what any specific person said or thought on any particular occasion. Specifying his or her statement or thought requires specifying the particulars about which *S/he* thought or spoke on *that* occasion in *those* circumstances. As Donnellan (1966) noted, an inaccurate, hence false, definite description can nevertheless be used successfully to refer to one or another particular (or feature(s) of one), such

17. Nietzsche’s perspectivist cognitivism is examined in Westphal (1984a, 1984b).

as the teetotaler standing in the corner drinking water from a martini glass, whom the speaker successfully though incorrectly designates as ‘the man in the corner drinking a martini’. Frege (1892a, b) distinguished not only between ‘concept’ and ‘object’, but also between them both and any *Sinn* as a ‘mode of presentation’ (*Art des Gegebenseins*). His famous example of ‘the morning star’ and ‘the evening star’, by their linguistic designations, indicate *perceptual* circumstances in which Earthlings can regularly and reliably see one and the same bright heavenly body: Venus. Throughout his career, Quine remained committed to naïve set theory, neglecting its paradoxes, to maintain his naïve confidence that intension and extension, as the classificatory content of predicates and their possible instances (respectively), suffice for any referential purposes required by his extensionalist point of view (delimited to purported ‘ontological commitment’). To the contrary, careful scrutiny of Quine’s semantics demonstrates that the one sentence the truth-value of which he refused to reconsider, the thesis of extensionalism itself, is false (Westphal 2015a). Kant’s point against Leibniz’s ‘individual concepts’ also holds against Quine: Whatever particular instances our predicates may possibly classify, and in *this* restricted, modal sense alone, which they may possibly designate (extensions), does not suffice for any *actual* reference to any *actual* individuals (nor to their actual features), *i.e.* extensions, much less does it suffice for our *localising* any individuals (extensions) which happen to instantiate the predicate(s) used in our claims, propositions or attitudes so as to be able to judge or to know anything about *them*. Localising particulars requires specifying in context the determinable concepts ‘space’, ‘time’ and ‘individual’, so as to delimit (sufficiently, if approximately) the region(s) occupied by those particulars (or by that particular). Exactly in this regard Kaplan argued that it belongs to the ‘character’ of our use of demonstrative expressions to map a designated region or individual into the context and content of what Someone says or thinks. In just these semantic and cognitive regards Kant’s Thesis of Singular Cognitive Reference joins philosophical forces with J.L. Austin (1950), Donnellan, Evans, Kripke, Travis (2000, 2006, 2008, 2013), Wettstein (2004) – and Hegel (1807), who argued *for* Kant’s Thesis of Singular Cognitive Reference by strictly internal *reductio ad absurdum* of both a conceptual ‘knowledge by acquaintance’ *and* of reference to particulars merely by description (intension) in the first chapter of his *Phenomenology of Spirit*, *without* appeal to Kant’s transcendental idealism, nor to any comparable view (Westphal 2010). By working out the cognitive-semantic conditions we must satisfy in order to ‘realise’ any of our concepts (in Tetens’s sense), Kant established that mere conceivability, *i.e.*, mere logical consistency, establishes no more than a conceptual possibility, though not even a candidate cognition. In this way, Kant achieved the key aim of verificationism, on cognitive-semantic (referential) grounds, *without* invoking meaning- or concept-verificationism. Significantly, this decisive, incisive way of determining (specifying) which of our thoughts or ideas

are candidate cognitions, or instead are cognitively empty, is neglected both by Unger (2014) and by Williamson (2015) in their debate about the vacuity of contemporary analytic metaphysics. Clarity of conception may suffice for meaningfulness (intension), but it does not suffice for any real use in connection with any actual particulars (extentions). Carnap is quite right that formalised syntax and semantics are quite literally empty of empirical use without their proper complement, the pragmatics of language in use in actual contexts by actual people (§64).

In re-thinking Hume's problem about understanding his own beliefs about the porter who delivered him a letter in his upper-storey apartment (*T* 1.2.4.2), Kant recognised the *transcendental* significance, the transcendental presuppositions, of making the kinds of commonsense causal discriminations Hume obviously made *in situ*, in fact, in truth, and justifiedly so, which he reported accurately, but could not understand on the basis of his own empiricist principles (*cf.* Wolff 1960).¹⁸ Understanding Kant's *Kritik der reinen Vernunft* requires carefully distinguishing what we can experience, think, judge and say *within* our ordinary self-conscious experience of the world, from what we can think, judge and determine in transcendental reflection about the *a priori* necessary conceptual and sensory conditions which alone enable us to experience any of the world apperceptively (self-consciously). Nevertheless, Kant's guides to transcendental reflection *are* the structures of our worldly experience; he expressly links the empirical and the transcendental levels of analysis in the 'Second Analogy' (B253–6).¹⁹

We can understand, appreciate and assess Kant's analysis, and especially his analysis and arguments in the 'Analogies of Experience', by taking very seriously Beck's (1978, 24) observation that 'the necessary conditions for what Hume knows are the sufficient conditions for what Kant knows', centrally: What Hume knows about sorting out sequences within his experiences from the sequences of the events and objects he experienced, and his *de facto* capacity to identify the latter when prompted by the former, as when the porter delivered his letter (*T* 1.4.2), is sufficient to show that Hume's official empiricist principles

18. I do not claim Kant read this section of Hume's *Treatise*; rather, Kant recognised that in principle any strictly empiricist account of sense impressions can provide no basis for distinguishing between the always-successive order of sensory, experiential intake and any (putatively) objective order of (relatively) stable states of affairs and changes in locations or features of (relatively) stable perceptible objects.
19. In this passage, he also links the transcendental level of his analysis to transcendental idealism; this, I have argued in detail in *KTPR*, he did not need to do. Husserl contends that Kant was mired in psychologism. I submit that Husserl failed to understand Kant's very sophisticated, parallel analyses of our transcendental power of judgment and the *a priori* transcendental conditions which must be satisfied for us to use our fundamental concepts and principles in actual (if putative) cognitive judgments about spatio-temporal particulars. (I submit that my *KTPR* understands Kant's *Kritik der reinen Vernunft* better than did Husserl, or Heidegger.)

are insufficient to account for our commonsense capacity to judge what we experience accurately and justifiedly, and to show that Kant's analysis of our discriminatory causal judgments is correct at least to this extent, which includes his Thesis of Singular Cognitive Reference. To understand and to assess Kant's analysis requires integrating both his principled analysis *and* his realisation of his analysis *in concreto* in our typical and typically reliable capacities to distinguish and to identify, *i.e.*: to *discriminate*, various kinds of causal sequences and processes amongst the perceptible, causally structured and interacting particulars surrounding us. This is central to understanding the dual status of Kant's integrated principles of causal judgment in the 'Analogies of Experience', that they *regulate* our causal judgments, *and* that, were we *unable* to make any such causal discriminations and identifications accurately and justifiedly, we would altogether lack apperception of our own existence 'as determined in time', *i.e.*, as it merely appearing to us that some events appear to occur before, during or after others. That is the constitutive point in Kant's Analogies of Experience (*cf.* above §§48–59). These cognitive-semantic points have far-reaching implications, not only for philosophy of language and epistemology, but also for history and philosophy of science, theory of action and philosophy of mind (PART 3). Outside pure axiomatics, conceptual clarity is necessary, though not at all sufficient for any real cognitive use, nor for substantive philosophical results. In precisely this regard, much of contemporary analytic metaphysics rejoins pre-Critical rationalist metaphysics, as no more than 'mere groping, and worst of all, amongst mere concepts' (Bxv). The interpretive, evaluative and philosophical shortcomings identified herein all stem from failure to think through the fundamental phenomena, issues and the best philosophical attempts to address them, both historically and currently, as announced and illustrated in the Introduction.

Part III

Further Ramifications



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

10 Kant's Cognitive Semantics, Newton's Rule 4 of Experimental Philosophy and Scientific Realism Today

66. Introduction

Kant's semantics of singular cognitive reference directly and strongly supports Newton's Rule 4 of Natural Philosophy in ways which support Newton's realism about gravitational force. I begin with Newton's methodological Rule 4 and its role in Newton's justification of realism about gravitational force (§67), and then briefly summarise Kant's semantics of singular cognitive reference (§68). Next I argue that the key point of Kant's cognitive semantics is embedded in and strongly supports Newton's Rule 4, and that it rules out not only Cartesian physics (*per* Harper) but also Cartesian, infallibilist presumptions about empirical justification generally (§69). I then show that Kant's cognitive semantics reveals a key defect, an *infallibilist* presupposition, in Bas van Fraassen's anti-realist 'Constructive Empiricism', even in its recent (2008) version, and also in many common objections to realism (§70). These problems reveal yet a further important regard in which Constructive Empiricism is *inadequate* to its intended domain, not even to Classical Newtonian Mechanics (§71). This (as it were) 'empirical' inadequacy of Constructive Empiricism highlights a chronic empiricist misunderstanding of Newton's mechanics (§72). Finally, Kant's cognitive semantics improves upon the semantic interpretation of scientific theories, and rectifies the presumption that the laws of physics literally 'lie' (§73). Thus Kant and Newton still have invaluable lessons for contemporary philosophy and history of science (§74).

67. Newton's Rule 4 and His Causal Realism

Newton's Rule 4 of Natural Philosophy states:

In experimental philosophy, propositions gathered from phenomena by induction should be considered either exactly or very nearly true notwithstanding any contrary hypotheses, until yet other phenomena

make such propositions either more exact or liable to exceptions. (Newton 1999, 796; 1871, 387)

Newton directly adds,

This rule should be followed so that arguments based on induction may not be nullified by hypotheses. (*Ibid.*)

Newton's Rule 4 requires any competing scientific hypothesis to have, not merely empirical evidence in its favour, but sufficient evidence with sufficient precision either to make an accepted scientific theory or law 'more exact' or to restrict it by demonstrating actual 'exceptions' to it. Rule 4 is central to Newton's methodology, in ways I now indicate.¹

Recent scholarship, spear-headed by Howard Stein (1967) and culminated by Harper (2011), shows that Newton was significantly more sophisticated about scientific method and explanatory success than most contemporary philosophers of science,² that his standards of theoretical adequacy justified his realism about gravitational force and that (when provided the relevant data and theoretical analysis) they also justify the shift from Newtonian mechanics to General Relativity, as Einstein himself realised. Furthermore, Newton's methodology vastly reduces the problem of the 'underdetermination' of theory by observation (Harper 2011, 194–219, 238–56, 372–8) and is used today in cosmology (Harper 2011, 394–6). Here I focus on one key issue and one central instance of it, which show that Newton's Rule 4 centrally embeds two key epistemological insights of Kant's cognitive semantics, and how these insights support his causal realism about gravitational force.

When rejecting mere hypotheses, Newton famously states that

. . . whatever is not deduced from the phenomena must be called a hypothesis; and hypotheses, whether metaphysical or physical, or based on occult qualities, or mechanical, have no place in experimental philosophy. In this experimental philosophy, propositions are deduced from the phenomena and are made general by induction. The impenetrability, mobility, and impetus of bodies, and the laws of motion and of the law of gravity have been found by this method. And it is enough that gravity really exists and acts according to the laws that we have set forth and is sufficient to explain all the motions of the heavenly bodies and of our sea. (Newton 1999, 943; 1871, 530; *cf. Opticks*, 401–2)

1. Here I follow Harper (1989–2011), who kindly allowed me to study his (2011) prior to its publication.
2. *E.g.*, Newton's criteria of theoretical adequacy are not subject to Christensen's objections to Glymore's boot-strap account (Harper 2011, 133–6).

This passage has been persistently misread by generations of philosophers, starting at least with Berkeley and Hume, for two main reasons. First, it has been widely assumed that by ‘deduction’ from the phenomena Newton must mean logical deduction, though this makes his view hopeless because statements can only be deduced logically from other statements, not from experiences nor from natural phenomena (nor from anything non-propositional). Second, it has been widely assumed that by ‘induction’ Newton must mean simple numerical induction, so that his theory is challenged by Hume’s problem of induction. Both assumptions are incorrect.³

Newton uses the term ‘deduction’ in a broader sense roughly equivalent to ‘justify’ by evaluating empirical evidence; recall the forensic use of the term ‘deduction’ from evidence. The question then is, what sort of ‘justification’ Newton proposes to derive from natural phenomena. An especially important example of Newton’s ‘deduction from the phenomena’ is provided by Harper’s reply to the concern that Newton appears to assume as an hypothesis, rather than to prove on the basis of phenomena, that the inverse-square law of mutual gravitational attraction holds generally, and not merely for those few spaces in the cosmos occupied by bodies we have observed in our solar system (Harper 2011, 28–31, 137–42).

Three aspects of Harper’s response to this concern suffice for present purposes:

- 1) Newton’s method seeks converging measurements by various precise, independent means of causal parameters, where:
 - i) Systematic dependencies identified by a theory make the phenomenon to be explained measure the value of the theoretical parameter which explains it.
 - ii) Alternatives to the phenomenon would carry information about alternative values of that same parameter.

3. Both mistaken assumptions result from the deductivist view of scientific explanation, which is presupposed by both Hume’s and Goodman’s Problems of Induction, and was central to Logical Positivism and Logical Empiricism up to *circa* 1980; see Suppe (1977), Grünbaum and Salmon (1988), Kyburg (1988), Salmon (1989). That observation statements do not follow logically from observations (experiences) was stressed by Hempel (1935) and Schlick (1935); it recurs in Davidson’s (1983/2001) view that only a belief can justify another belief: ‘The relation between a sensation and a belief cannot be logical, since sensations are not beliefs or other propositional attitudes. What then is the relation? The answer is, I think, obvious: the relation is causal. Sensations cause some beliefs and in *this* sense are the basis or ground of those beliefs. But a causal explanation of a belief does not show how or why the belief is justified’ (Davidson, 2001, 143); ‘. . . nothing can count as a reason for holding a belief except another belief’ (Davidson 2001, 141; *cf.* 153, 155). Davidson’s easy appeal to causality is scrutinised below, ch. 13.

- 2) This feature of Newton's method highlights the importance of the links between Newton's three distinct ways of measuring centripetal force and acceleration fields.
- 3) Newton's Rules of Philosophising, centrally Rule 4, support generalising the causal parameters thus measured. (Harper 2011, 257–64, 361–64)

Newton's analyses and proofs are, as Harper shows, very rich, subtle and thorough; here some of their rudiments suffice.⁴ One important example of the kind of 'systematic dependencies' mentioned in (1) is Newton's recognition of the further significance of Kepler's Second or 'Areal' Law (law of areas). Kepler determined that the (roughly triangular) area swept by a planet orbiting the Sun is constant, although the planet follows an elliptical orbit in which it accelerates when approaching the Sun and decelerates when receding from the Sun. This is Kepler's Second or Areal Law:

The line joining the planet to the Sun sweeps out equal areas in equal times as the planet travels around the ellipse.

Newton realised that this constancy indicates precisely an orbit about the centre of motion of the Sun and the planet, because an increasing areal rate would place the focal point of the planet's orbit outside and 'ahead' of the Sun, whilst a decreasing areal rate would place the focal point outside and 'behind' the Sun. The former would result in an expanding, the latter in a contracting orbit; either case represents orbital degeneration rather than stability. Newton's observational data (which included Kepler's and Brahé's) clearly indicated orbital stability. The stability with which planetary orbits satisfy Kepler's areal law indicates that their orbits measure precisely an inverse-square acceleration field directed towards the Sun (Harper 2011, 109–20).

This same result, precisely an inverse-square acceleration field, is measured independently by determining whether there is orbital precession, that is, whether planets follow the same orbit repeatedly, or whether the location of an orbit's aphelion and perihelion (its most distant and closest points to the Sun; called 'apsides') shift by rotating about the Sun, either 'forwards' or 'backwards' with respect to the direction of orbital rotation, upon subsequent orbits. (By Kepler's Areal Law and Newton's Book 1, Propositions 1 and 2 and their Corollaries, this force is directed to the focus of an elliptical orbit occupied by the sun; Harper 2011, 76–83, 156–9.) Absence of such rotation or precession measures precisely an

4. For detailed summary, though these too are only summary, see Huggett *et al* (2013).

inverse square force of acceleration; a different rate of diminution of field strength would produce either positive or negative orbital precession (Newton 1999, 802; 1871, 395; Harper 2011, 120–6).

These two crucial steps, undertaken by Newton for the independent cases of six planets and two distinct aspects of their motions, *are* Newton's (initial) deduction from planetary orbital phenomena of the existence of an inverse-square acceleration field of force radiating from the Sun, in contrast to any other rate of diminution. Extrapolating from these sets of orbital phenomena and their univocal, precisely agreeing measures of an inverse-square attractive force to a field of such force radiating from the Sun *is* Newton's initial 'generalisation by induction' of the consequences he has deduced from the orbital phenomena (Harper 2011, 44–5, 128–9, 135–46, 257–84).

As Harper notes, Newton has additional data on the motions of bodies which provide further precise measures of the inverse-square attraction of gravitational force: Comets, the four moons of Jupiter, the Earth's moon, the rotation of Jupiter and the Sun about their common centre of motion and a vast range of terrestrial phenomena, including pendula, free-fall and (quaintly) floating magnets. Indeed, the entirety of *Principia*, Book III, Newton's 'System of the World', *is* his proof of universal gravitation, all based upon multiple, precise, independent agreeing measures of the inverse-square gravitational field provided by many diverse phenomena of motion. All of these were further bolstered in 1759 by Clairaut's successful, precise prediction of the return of Halley's comet.

Harper (2011, 355–68) explains very nicely how Newton's appeal to his First Law can be used to extend his Third Law in order to show that Jupiter's tendency to move towards the Sun, *i.e.*, its tendency to orbit the Sun rather than to move away from the Sun on a tangent, counts as an attraction between Jupiter and the Sun. Newton's First and Third Laws state:

Law 1. Every body continues in its state of resting or of moving uniformly in a straight line, except insofar as it is driven by impressed forces to alter its state. (Newton 1999, 416; 1871, 13)

Law 3. To an action there is always a contrary and equal reaction; or, the mutual actions of two bodies upon each other are always equal and directed to contrary parts. (Newton 1999, 417; 1871, 13)⁵

Measuring an attractive force between, *e.g.*, Jupiter and the Sun, requires using Newton's definitions of the quantities of absolute, accelerative and

5. To recall, Newton's Second Law concerns the composition of distinct forces, often called the 'Parallelogram of Forces'.

motive centripetal force (Harper 2011, 86–94); these are his Definitions 6–8:

- Def. 6. The *absolute* quantity of centripetal force is the measure of the same, greater or less in proportion to the efficacy of the cause propagating it from the centre through the encircling regions. (Newton 1999, 406; 1871, 4)
- Def. 7. The *accelerative* quantity of centripetal force is the measure of the same, proportional to the velocity which it generates in a given time. (Newton 1999, 407; 1871, 4)
- Def. 8. The *motive* quantity of centripetal force is the measure of the same proportional to the motion which it generates in a given time. (Newton 1999, 407; 1871, 5)

Note that Newton expressly defines *measures of quantities* of force. His definitions have been widely misread as defining *forces*, a misreading central to effacing Newton's realism about gravitational force and to reducing his concerns merely to those of empirical adequacy (see below, §71).

Harper (2011, 375–8) shows how Newton identifies systematic dependencies which enable orbital phenomena to provide measurements of the Sun's gravitational field. Each of these measures is supported by Newton's method of successive approximations (*cf.* Smith 2002a, 2002b). Each of Newton's measures begins with an approximation of the physical situation which is used to calculate an approximate measure of the target value. At each stage of calculation and recalculation, divergences between the initial approximation and the actually observed phenomenon count as *theory-mediated* secondary phenomena, which are to be explained by reiterated use of the very same explanatory resources. With an approximate result in hand, Newton progressively eliminates approximations by reiterated use of the same explanatory resources to achieve ever more accurate, ever less idealised measures of the target value. Reiterated deployment of the same theoretical apparatus produces ever more precise *and* converging measures of the target value, thus supporting very robustly Newton's claim thereby to measure a real value. The progressive elimination of approximations can and often did lead, not only to much greater precision, but in several central cases, Newton's results stand in formal contradiction to his initial approximations. This important feature of Newton's method cannot be explicated by hypothetico-deductive (H-D) methods (*cf.* Harper 2011, 126–42).

More important yet is that the success of these successive approximations *in each case* of Newton's vast array of *independent* measures of the inverse-square rate of gravitational attraction greatly bolsters the strength of his conclusions based on the agreement *amongst* all these measures of the inverse-square field of gravitational attraction. The wide variety of

agreeing measures of the inverse-square attraction of gravitational force provides very robust measurement of that force. Harper stresses that this is one of Newton's key ideals of theoretical success, to provide 'convergent accurate measurement of causal parameters by the phenomena they are taken to explain' (Harper 2011, 104–7, 194–200). This is a vastly stronger ideal of theoretical success than empiricist descriptive, predictive and retrodictive accuracy (across the data set), for three main reasons. (A fourth is discussed below, §72).

First, Law 3, the equality of action and reaction, or the mutual equality of attractions (or repulsions) between two bodies, is required to disentangle the weights and masses of any two bodies. Disentangling these two characteristics is required to use their motions to measure the force of their attraction, whatever it may be. Newton's Law 3 has vastly more empirical support than any alternative assumption that the strength of attractive forces varies pair-wise amongst bodies, primarily because it alone provides for convergent agreeing measures of relative masses of bodies within our solar system.

Second, Newton's gravitational theory famously integrated a vast range of celestial and terrestrial phenomena within a common, comprehensive explanatory theory. This explanatory integration provides more than just comprehensiveness: By using the same theory to explain this vast range of phenomena, Newton's *Principia* is able to use this vast range of phenomena to provide accurate, convergent agreeing measures of the strength of gravitational attraction and its inverse-square rate of diminution across our solar system, including some comets. For example, both the orbit of the Earth's moon and the length of a terrestrial seconds pendulum near sea level provide accurate agreeing measures of the force of the Earth's gravity (Harper 2011, 180–6, 195–203, 215–7).

Relying upon the empiricist criterion of empirical adequacy in terms of descriptive, predictive and retrodictive accuracy across the data set (*i.e.*, 'empirical adequacy') cannot rule out hypotheses that different material bodies have different powers of attractive force. Nor can it rule out the suggestion that the inverse-square law holds only for those distances and regions of space for which we have observational data. Nor can it disentangle the weights and masses of bodies in ways achieved by Newton's use of Law 3, which is crucial to Newton's entire set of astronomical measures of the inverse-square ratio of gravitational force to distance. Using Newton's Law 3 provides for converging, agreeing, precise measures of one and the same attractive force amongst celestial and terrestrial bodies, *and* provides grounds for seeking to explain deviations from their predicted motions by using the very same theoretical and observational resources to search for other bodies affecting their motions. This strategy is central to Newton's extremely successful method of progressive elimination of initial idealisations, which results in convergent agreeing measures of the inverse-square power of gravitational attraction. This strategy is equally central to the enormous further progress made by Newtonian

celestial mechanics through the end of the 19th Century (c.E.) (Airy 1834, 1884; Grant 1852).

Third, using Law 3 also enables Newton to measure the relative masses of bodies with satellites, including the Sun, the Earth, Jupiter and Saturn. Success in solving this very difficult problem provides further confirmation of Law 3 by showing that it is implied by the observed phenomena Law 3 is used to measure. Therefore, Newton's Third Law *is* 'deduced from the phenomena', though it is deduced from them indirectly rather than directly; it is not simply postulated (Harper 2011, 274–9, 355–64).

Understanding Newton's realism about gravitational force requires distinguishing it from causal agnosticism. According to causal agnosticism, causal structures generate observed events and regularities, though we cannot know what those causal structures are. This issue was hotly debated by Newton and his contemporaries, especially Leibniz (Janiak 2007). Newton is not a causal agnostic about gravitational force. Newton concludes that

. . . it is enough that gravity really exists and acts according to the laws that we have set forth and is sufficient to explain all the motions of the heavenly bodies and of our sea. (Newton 1999, 943; 1871, 530; *cf. Opticks*, 401–2)

Newton was a realist about gravitational force; he was agnostic only about *how* gravitational force operates as a physical cause, and he shrewdly recognised that his *Mechanics* only requires that matter *have* the power of gravitational attraction. This assertoric claim suffices, regardless of philosophical issues about whether gravity be 'essential' to matter.⁶

The progressive increase in accuracy required by Newton's method and ideal of explanatory success significantly exceeds the requirements of other accounts of theoretical adequacy current in philosophy of science. Newton's procedure may recall Glymour's 'boot-strap' arguments. However, Harper shows that Newton's method and explanatory ideal are both stronger and more adequate than Glymour's boot-strap account,

6. I neglect an important historical nicety here. Newton ardently defended natural theology on the basis that, if left alone, his 'System of the World' would run down, thus requiring God's occasional jiggle to keep it running (Carrier 1999). This feature of his physical theory vanishes when it is reformulated on the basis of mathematical analysis by Johann Bernoulli. Significant confusion has also resulted from misreading Newton's 'merely mathematical' treatment of forces in Book I of the *Principia*. In Book I Newton's treatment of forces must be 'merely mathematical' because there (and in Book II) he constructs the mathematical and analytical framework required to identify and to measure real gravitational forces in Book III, 'The System of the World'; see below, §72.

and that they overcome problems confronting that account.⁷ Indeed, Harper (2011, 378–85, 392) shows that Newton’s standards of theoretical adequacy apply to the shift from Newtonian mechanics to General Relativity: On the basis of the relevant evidence and theoretical analysis, *Newton’s* methodology and ideal of explanatory success favour General Relativity (*contra* Kuhn 1996, 94, 102, 107–8). In brief, Newton understood both the demands upon and the achievements of physical science better than have most philosophers and historians of science up to the present day. In these regards, Newton’s causal realism is empirically supported far more than is empiricist anti-realism, if one insists on treating these two views as ‘hypotheses’.

Bas van Fraassen (2002, 129; 2004a, 130–1), too, hails Newton’s Rule 4, sometimes; elsewhere he (2007, 365) dismisses Rule 4 in the same breath as the traditional empiricist principle of sensory evidence (*sola experientia*). It may be expected that the interpretation of Rule 4 shall prove controversial within history and philosophy of science, as empiricists respond to Harper’s (2011) findings. I argue (§69) that the semantic core of Newton’s Rule 4, as Harper understands it (rightly, I submit), is supported directly and decisively by Kant’s semantics of singular cognitive reference (§68), so that objections to Rule 4 based solely upon considerations drawn from history and philosophy of science cannot undermine either Newton’s or Harper’s interpretation and use of Rule 4.⁸

68. Kant’s Semantics of Singular Cognitive Reference

Avant la lettre, Kant’s semantics of singular cognitive reference incorporates Evans’s (1975) thesis about predication, which Kant embeds within a much richer epistemological analysis. Hence we may begin (again) with the conclusion of Evans’s analysis:

... the line tracing the area of [ascriptive] relevance delimits that area in relation to which one or the other, but not both, of a pair of contradictory predicates may be chosen. And that is what it is for a line to be a boundary, marking something off from other things. (Evans 1985, 36, *cf.* 34–7)

7. These problems are due to Christensen (1983, 1990); Harper (2011, 133–6) responds on Newton’s behalf.

8. Though Newton stated Rule 4 only in the third edition of the *Principia*, its use is evident in the earlier editions, and is implicit in Kepler’s labourious though ultimately successful and significantly more precise determination of planetary orbits and the three laws he discovered about them. It is also implicit in Galileo’s law of free fall, in particular, his discovery that acceleration varies directly with time (squared) rather than with distance.

It is clearly implicit, and very nearly explicit, in Evans's analysis, that specifying the relevant boundary for the use of either member of a pair (or set) of contrary (mutually exclusive, though not necessarily 'contradictory') predicates is only possible by specifying the region relevant to the manifest characteristic in question, and *vice versa*, and (for reasons Evans provides, concerning the mastery of the relevant predicates of a language) this region will be either co-extensive with or included within the spatio-temporal region occupied by some particular object or event. More generally, Evans demonstrated, even if he only implicitly argued, that predication requires conjointly specifying the relevant spatio-temporal region and some manifest characteristics of any particular we self-consciously experience or identify. These conjoint specifications may be approximate; the key point is that spatio-temporal designation and ascription of manifest characteristics are *conjoint, mutually interdependent* cognitive achievements which integrate sensation ('sensibility') and conception ('understanding'). Here I shall call this the 'Evans Thesis'.

This conjoint designation of any particular's region and at least some of its manifest characteristics requires thorough co-operation between and integration of sensibility and understanding: Sensibility is required (though not sufficient) for sensing the various manifest characteristics of the sensed particular, and directing us to its location; Understanding is required (though not sufficient) for explicitly identifying its region and its manifest characteristics, thus enabling us to be apperceptively aware of this particular. Arguments for this conclusion can be made on semantic grounds, as Evans does in criticising Quine's alleged inscrutability of reference. Sound arguments for this conclusion can also be made on epistemic, indeed on transcendental grounds, as Kant did.

Kant's arguments for the Evans Thesis are both semantic and epistemic, for it is justified by Kant's semantics of singular, specifically *cognitive* reference. 'Cognitive' reference concerns our reference to (putatively) known (actual) individuals, as instances of our (putatively cognitive) judgments or assertions. Kant's point is that knowledge, justified belief, error or indeed experience (whether veridical or not) of or about particulars require satisfying further conditions of reference (further 'constraints', if one will) than those implicit or explicit within conceptual content or linguistic meaning alone. The main points involved in Kant's cognitive semantics are these: Kant provides a two-stage account of conceptual significance. According to Kant, concepts have 'meaning' or content as predicates of possible judgments (as determinables), though no concept has fully determinate meaning *nor* specifically *cognitive* significance unless and until it is incorporated into a candidate cognitive judgment which is referred to some actual particular(s) localised within space and time (presumptively) by some cognisant Subject, Sam. The relevant particulars are located within space and time; I use the term 'localised' to stress that Sam identifies (at least approximately) where and when

(putatively) known or experienced particulars are located. Kant analyses the first stage of conceptual meaning in the derivation of the Table of Categories from the Table of Judgments and in the Schematism of the Categories. Kant analyses the second stage of cognitive significance in the Transcendental Aesthetic, the Amphiboly of the Concepts of Reflection and in the Analytic of Principles.⁹ Both of these points are made succinctly at the end of the *Critique of Judgment*:

And so it goes with all the categories, which can have no significance for theoretical cognition at all if they are not applied to objects of possible experience. (*KdU* 5:484)

‘Theoretical cognition’ (*Erkenntniß in theoretischer Rücksicht*) contrasts to ‘practical cognition’, which belongs to moral philosophy; ‘theoretical cognition’ concerns both commonsense and scientific knowledge. Kant makes this remark whilst explaining why we cannot have theoretical cognition of the Divinity; accordingly here he emphasises the contrast between ‘objects of possible experience’ and anything we cannot experience, such as the Divinity. Notice, however, that both stages of Kant’s semantics are implicated in this statement. To have any significance for theoretical cognition, the categories (and likewise for all of our concepts) require applicability to objects we can experience. (This is the task of the Schematism, augmented in the Analytic of Principles.) However, the quoted statement is not limited to applicability: Kant indicates that to have significance for theoretical cognition, the categories and our other concepts must be ‘applied to objects’ which we experience. The cognitive use or ‘application’ (*Anwendung*) of concepts, according to Kant, is indicative, not subjunctive; actual cognition involves actual use of concepts in actual cognitive reference to objects or events we actually experience and localise within space and time. If we could not so use our concepts (including the categories) at all, we would fail (*per* the Transcendental Deduction and Refutation of Idealism) to distinguish ourselves from any and all objects or events in our environs and so would fail to be aware of ourselves ‘as determined in time’, that is, as being aware of ourselves as being aware of some events (so much as merely) appearing to occur before, during or after others.¹⁰

Consider briefly Kant’s central case for his cognitive semantics, our identification of perceptible spatio-temporal particulars. Specifically, Kant argues that we can only refer our concept of transeunt cause in legitimate (justifiable) cognitive judgments to particular *spatio*-temporal

9. Above, PART 2; *KTPR*, esp. §§7–9, 33, 62–63.2.

10. This is the important qualifier which I have sought to mark using Kant’s term ‘apperception’, and its cognates.

objects or events.¹¹ Through his critique of Leibniz (in the Paralogisms) Kant recognised the cognitive insufficiency of the descriptions theory of reference. According to the descriptions theory of reference, our statements refer to whatever is described when we analyse the meanings of our terms or statement into explicit descriptions. The problem with this approach within epistemology is that, no matter how specific or extensive a description may be, no description by itself determines whether it is empty, determinate or ambiguous because it describes no, only one or instead several individuals. Which may be the case is not simply a function of the description (intension): it is equally and independently a function of what there is. The inclusion of definite pronouns (such as ‘the’ or ‘the one and only’) within an attributive phrase does not, because it cannot, settle this issue because no definite article (or other singular referring phrase) can insure that the locution in which it occurs be neither empty or ambiguous; this was, after all, Russell’s problem (*ca.* 1905) about ‘the present King of France’. To *know* any one spatio-temporal particular (even putatively) requires both correctly ascribing characteristics to it *and* locating it in space and time (however approximately). Integrating both is required for predication (ascription), and also for knowledge of (or even error about) that individual: ascription (even putative ascription) is a cognitive achievement; it is not merely a grammatical or judgmental form. Only through singular sensory presentation *and* competent use of conceptions of ‘time’, ‘times’, ‘space’, ‘spaces’, ‘individual’ and ‘individuation’, Kant further argues, can we localise any object or event within space and time (even putatively).¹² Only through ostensive designation can we *ascribe* the predicates used in our (perhaps implicit) description *to* any *one*, putatively known particular. Therefore, ascription is required for singular, specifically *cognitive* reference to any spatio-temporal particular. Only through ascription as this kind of cognitive achievement (ascription *to*) can

11. A ‘transeunt’ cause is a causal influence passing between one entity and another (*O.E.D.*).
12. Implicit here is Kant’s further claim that our conceptions of time, times, space, spaces, individual and individuation are *a priori*. This claim, too, is independent of Kant’s Transcendental idealism, for this claim is a key premiss in his main direct argument for Transcendental idealism. The *a priori* status of these conceptions follows from the fact that any empirical concept must be learnt, acquired or defined on the basis of our experience of relevant spatio-temporal particulars, the identification of which requires possession and competent use of these conceptions. To speak of particulars ‘causing’ our conceptions (or beliefs) cannot be given any legitimate (justifiable) constitutive interpretation (see below, §§87–89) and obscures rather than illuminates the central issues, in part because causal *description* (widely popular amongst causal theorists of mind, of reference and of action) does not suffice for causal *ascription*, much less for *justifiable* causal ascription. These requirements are widely neglected by those same causal theorists. These requirements involve, as Kant realised, specifically *cognitive* semantics, not only semantics of meaning and demonstrative reference.

anyone specify (even approximately) the relevant spatio-temporal region (putatively) containing the particular one purports to designate ostensively, by specifying its occupant, the (putatively) known particular. Only in this way can we note, specify or determine precisely *which* spatio-temporal region to designate, in order to grasp *this* (intended, ostended, presented) particular, and to ascribe to it any manifest characteristics, all of which is required to achieve any knowledge (whether presumptive or actual) of that particular.

Thus, in brief, does Kant show that determinate cognitive judgments are possible for us only through conjoint spatio-temporal designation of, and predicative ascription of characteristics to, any experienced particular(s). Recognising any particular object or event (even presumptively) requires conceptually identifying both the region it occupies and at least some of its manifest characteristics. Thus, in brief, does Kant justify the Evans Thesis.¹³ As important as predication is to philosophy of language, analysing the meanings of our terms or the contents of our concepts or descriptive phrases does not because it cannot suffice for epistemology. As Kant recognised, only by analysing the cognitive dimensions of predication as ascription can we understand how the terms or concepts we use in our judgments, claims or propositions can have specifically *cognitive* significance, in addition to their linguistic meaning or conceptual content. To summarise this point I state again Kant's

THESES OF SINGULAR COGNITIVE REFERENCE: Terms or phrases have 'meaning', and concepts have (classificatory) content (intension), as predicates of possible judgments (claims, statements or assertions), that is, as determinables, although (in non-formal, substantive domains) no concept, proposition or sentence has specifically *cognitive* significance unless and until it is incorporated into a candidate cognitive judgment (claim, statement or assertion) which is referred to some actual particular(s) localised (at least putatively) by the presumptive judge (a cognisant subject, *S*) within space and time. Cognitive significance, so defined, is required for cognitive status (even as merely putative knowledge) in any non-formal, substantive domain.

This Thesis has two important implications for epistemology, including history and philosophy of science.

One important consequence of Kant's cognitive semantics is that it shows that justificatory infallibilism is in principle *irrelevant* to the non-formal domain of empirical knowledge. Strictly speaking, formal domains

13. Kant's cognitive semantics of singular cognitive reference provides for scientific reference to indirectly observed entities or forces, e.g., the magnetism of the loadstone responsible for the stone's observed effects upon iron filings (B273). The details of this provision are, however, intricate and cannot be summarised here. On Kant's view various kinds of observational instruments can enable us to localise micro-level phenomena spatio-temporally.

are those which involve no existence postulates. Strictly speaking, the one purely formal domain is a careful reconstruction of Aristotle's Square of Opposition (Wolff 1995, 2009a, 2017). All further logical or mathematical domains involve various sorts of existence postulates, including semantic postulates. We may define 'formal domains' more broadly to include all formally defined logistic systems (Lewis 1930 [1970, 10]). Whether we construe formal domains narrowly or broadly in either way, deduction suffices for justification within any formal domain because deduction *constitutes* justification within any formal domain. Conversely, within any substantive domain, a mere logical possibility as such has no cognitive status and so cannot serve to 'defeat' or to undermine (refute) an otherwise well-grounded line of justificatory reasoning within that domain. The domain of (putative) empirical knowledge includes spatio-temporal objects and events; accordingly, empirical knowledge is a non-formal domain. Consequently, the Thesis of Singular Cognitive Reference rules out the deductivist ideal of infallible justification within the entire non-formal domain of empirical knowledge. Recognising that only fallibilist accounts of justification are tenable within the non-formal domain of empirical knowledge is no concession, and certainly no capitulation, to scepticism.

A second important implication of Kant's cognitive semantics is that it secures the key aim of meaning verificationism *without* invoking meaning verificationism! Kant's point holds independently of whether the concepts we use in cognitive judgments (in non-formal, substantive domains) are *a priori*, *a posteriori* or mixed. His cognitive-semantic point is that, whatever may be the conceptual content or linguistic meaning of our claims, judgments or propositions (intension), they have no cognitive status unless and until they are referred to particulars we have (presumptively) localised within space and time. This requirement is a necessary condition for the truth-evaluability of our claims (*etc.*), and a necessary condition for us to know enough about our claims and whatever about which we make those claims to discover and thereby to determine their truth value, their accuracy or their use as approximations. It is also necessary (though not sufficient) for our assessing the justification of our cognitive claims about those particulars. This is the nerve of Kant's critique of prior, cognitively transcendent metaphysics.¹⁴

14. In *KTPR* I argued in detail that Kant's epistemology is (in these regards) sound; cf. Hanna (2001), Rosenberg (2005), Bird (2006a, 2006c), Haag (2007). The present analysis contradicts several centuries of empiricism; I respectfully submit that Kant understood the implications of Hume's *Treatise* better than Hume's empiricist successors. Kant's epistemology itself, of course, is not an object of empirical knowledge. He has further views about the cognitive status and justification of his Critical epistemology, but these do not pertain to the present topic; on these further issues, see *KTPR*, Bird (2006a, 2006c), and above, PARTS 1, 2.

Kant's Thesis of Singular Cognitive Reference does not rule out second-hand 'knowledge by description' based upon reliable testimony or written reports; it only establishes some basic cognitive conditions upon the acquisition of empirical knowledge, by identifying basic conditions under which alone synthetic statements have specifically cognitive status within any non-formal domain. Much more can be said to support the Thesis of Singular Cognitive Reference (above, PARTS 1, 2; *KTPR*).¹⁵ I have said enough here, however, to distinguish specifically cognitive reference (*kognitive Gegenstandsbezogenheit*) from issues within philosophy of language or philosophy of mind about mental or propositional content, semantics or theory of reference. I now argue that the Thesis of Singular Cognitive Reference is embedded centrally within Newton's Rule 4 of (experimental) Philosophy, that it strongly supports Newton's Rule 4 (§69) and specifically that it supports the role of Rule 4 in justifying Newton's causal realism about gravity against van Fraassen's Constructive Empiricism (§§70–73).

69. Kant's Cognitive Semantics, Newton's Rule 4 and Anti-Cartesianism

Understanding the significance of Kant's cognitive semantics for scientific knowledge requires noting and revising an expository simplification in the preceding section. For ease of expression I have until now formulated Kant's thesis in terms of localised spatio-temporal perceptible 'particulars'. The term 'particulars' commonly connotes individual physical objects or events, though its use can be much broader. Kant's cognitive semantics pertains to spatio-temporal particulars construed very broadly, to include any kind of particular we may localise within space and time, whether these be individual physical objects such as planets, a solar system of orbiting bodies, fields of force (such as gravity or magnetism) or any distinct, identifiable natural phenomenon or process, *e.g.*, an aurora borealis, a plasma, a gas cloud or sub-atomic particles. This is important in connection with Newton's gravitational theory, because he sought to explain, not individual facts about various motions of any one celestial body, but the general phenomena of the regularity of orbital motions, of

15. This thesis neither requires nor supports Putnam's 'internal realism'. To the contrary, Putnam failed to make his case for 'internal realism' (Westphal 1997, *xxiii–xxvii*, 2003b), and Carnap's attempt to scuttle framework-independent issues about realism (to which Putnam's case for internal realism centrally appealed) fails for reasons strictly internal to Carnap's account (Westphal 1989, 47–67). (Putnam's original argument for 'internal realism' disregards the distinction between formal and non-formal domains, and disregards what may be called Kaplan's *Caveat*, that in any use of formal modelling, it is imperative to distinguish carefully between genuine features of the domain so modelled and mere artefacts of the model; see below, §72).

the rate of free fall near the Earth's surface, the periodicity of pendula and the uniformity of gravitational attraction throughout our solar system, and presumptively throughout the universe until proven otherwise, *per* Rule 4. All of these natural regularities can be and have been localised within space and time; most belong to kinematics, either celestial or terrestrial. Hence they satisfy a key requirement of Kant's semantics of singular cognitive reference, which allows sensory presentation *via* observational or experimental instruments.¹⁶ What bearing, then, does Kant's cognitive semantics have on Newton's Rule 4?

Newton's Rule 4 embeds the core point of Kant's semantics of singular cognitive reference. Newton's main point in Rule 4 is to distinguish between hypotheses which do and those which do not compete with, or provide an *alternative* to, an established theory or law. In making this distinction, however, Rule 4 also distinguishes between hypotheses with cognitive status and those lacking such status, which count instead as suggestions, proposals or as yet untested suppositions. I don't wish to be stipulative, but philosophers, especially those favouring H-D methodology, are prone to use the term 'hypothesis' promiscuously, so that almost any suggestion about how an event might occur counts as an 'hypothesis'. Such promiscuity was also common amongst 17th- and 18th-century (C.E.) scientists, many of whom unhesitatingly described both Newtonian gravitational theory and Cartesian vortex theory as scientific 'hypotheses'. The specific contrast Newton's Rule 4 draws between competing and non-competing scientific hypotheses is rooted in a more general contrast also implied by Rule 4. Because Rule 4 requires of any competing hypothesis that it *have* evidence (differentially) in its favour, it requires a competing hypotheses be referred to localised, identified physical particulars which alone can provide *evidence* supporting that hypothesis. *Per* above (§67), without such reference to localised particulars, no hypothesis is so much as a candidate for truth-evaluation, nor for evaluation of its accuracy, its merits as an approximation or its cognitive justification. Rule 4 thus requires competitor hypotheses, not

16. The underlying idea is that observational and experimental instruments are made to function as information channels, in Dretske's (*KFI*) sense. For good use of Dretske's account within history and philosophy of science, see Ladyman *et al* (2009). Appeal to Dretske's account of information channels does not require accepting further features of his information-theoretic epistemology, and in particular, not his recursive definition of knowledge. His account of information transmission and information decoding maps neatly onto Kant's distinction between sensibility and understanding. Also important is that information channels satisfy more stringent conditions than mere causal covariation (*KFI*, 27–39); assimilating Dretske's account to a generic causal-reliability account is a serious, yet frequent error. Regarding 'phenomena' as general natural regularities, see Woodward (2011) and Harper (2011), 23–4, 50, 53–65, 114, 116–7, 162, as also Newton, *Principia*, bk III, Phenomena 1–6.

only to be logically possible; it requires them to have cognitive status, insofar as they are supported by at least some favourable empirical evidence, and so must be referred in some definite (specifiable) manner to localised spatio-temporal particulars. Consequently, Newton's Rule 4 rules out Cartesian epistemology, which restricts rational justification to logical deduction from premises which survive scrutiny by the *malin génie*, i.e. infallibilism (*scientia, sub specie* Tempier). Precisely for this reason, Rule 4 and Harper's interpretation of it will be contested by philosophers of science who presume infallibilism about empirical justification; in the next section (§70) we shall see that this includes contemporary empiricists. Hence it is important to see that Newton's rejection of infallibilism about empirical justification, implicit in Rule 4, is sound.

It is shown to be sound by Kant's semantics of singular cognitive reference. Obviously, nothing about the extent or kind of evidence sufficient to justify a scientific hypothesis, nor to justify its status as a competitor to an established theory or law, is implied by Kant's semantics of singular cognitive reference. However, because Rule 4 requires that there *be* positive empirical evidence for any competitor hypothesis, it embeds the core point of Kant's cognitive semantics: To *be* a *cognitive* claim in any non-formal domain, including any natural science, requires referring that claim to localised spatio-temporal particulars, which alone can provide relevant evidence (*pro* or *contra*). This reference to spatio-temporally localised particulars which alone can provide empirical evidence is required by the central point of Rule 4, that this evidence must differentially favour the proposed competitor. (Otherwise the evidence cited in its support would equally well support the established hypothesis, and so would provide no evidence specifically favouring a proposed alternative; so far as such evidence would show, that proposal would be no (justified) *alternative*.) Hence Kant's cognitive semantics directly supports the requirement embedded centrally in Rule 4 that to *be* a competing scientific hypothesis requires that hypothesis to have at least some positive evidence in its favour. Without such evidence, the proposed alternative merely states a proposal with no cognitive status because it is not referred to identified, localised particulars; it would be merely a proposal, a suggestion, and not a scientific hypothesis with cognitive status.

To this sound point of cognitive semantics Newton's Rule 4 adds the altogether credible methodological requirement that a *competing* scientific hypothesis have sufficient and sufficiently precise evidence differentially supporting it either to render an established theory or law 'more exact' or to restrict its scope by demonstrating 'exceptions' to it. Newton's justification for his Rule 4 is methodological: the *Principia* shows that adopting this methodological rule makes possible unprecedented

advances in natural science.¹⁷ This is not trivial: Newton's *Principia* is *inter alia* a sustained treatise on measurement theory, and on actual measurements of gravitational forces of attraction pair-wise between bodies across our solar system, by at least two independent measures in each case (each pair of attracting bodies).

Kant's specifically cognitive semantics directly and strongly supports the cognitive-semantic requirement embedded in Newton's Rule 4. By anchoring one core point of Newton's Rule 4 in a sound semantics of singular cognitive reference, Kant's cognitive semantics shows that Newton's Rule 4 cannot be countered simply on grounds specific to history and philosophy of science. Instead, criticising or rejecting Newton's Rule 4 and his use of it requires the much more ambitious task of criticising and rejecting a central cognitive and semantic precondition of natural science (specifically, natural sciences which measure distance forces) and also of commonsense knowledge, and hence a central epistemological precondition of any sound philosophy of science, including any and all use of experimental or observational apparatus, and any scientist finding her or his way to the apparatus to use it!

Harper (2011, 212–4, 341–6, 361–4) rightly notes that Newton's Rule 4 directly opposes Cartesian physics, which (*per* Tempier's edict) restricted itself to logically possible explanations, *e.g.*, cosmic vortices, to account for planetary orbits. In its condemnation of Copernicus, the Roman Church decreed that natural scientists could only propose *possible* explanations of natural phenomena, not actual explanations. This condemnation re-asserted Tempier's deductivist-infallibilism about cognitive justification. Descartes complied and officially regarded his explanatory models as merely possible explanations of natural phenomena.¹⁸ Newton's Rule 4 rejects 'merely possible explanations' as scientifically irrelevant; this is one key point of his infamous *hypotheses non fingo*. Newton's examples of the mere 'hypotheses' he condemns and rejects make plain that he rejects mere proposals lacking specific, differentially favourable empirical evidence. Merely possible alternative scenarios defeat cognitive justification only if justification requires infallibility. Newton's Rule 4 rejects the infallibilist justificatory ideal of (post-1277) *scientia*, and thus also the sufficiency of a mere logical possibility to defeat

17. Harper (2011) explicates brilliantly Newton's use of Rule 4 in the *Principia*. I submit that Newton's use of Rule 4, as explicated by Harper, provides ample scientific, methodological justification for Rule 4. However, philosophers in the empiricist tradition will ask, not what follows from, nor what can be based upon, Rule 4, but rather, what if anything justifies Rule 4 antecedently? To this question I have not found an answer in Harper's research, which is why I propose the present justification of the cognitive-semantic core of Newton's Rule 4.

18. The notion that scientific hypotheses provide merely 'possible' explanations is central to so-called 'creation science', which thus betrays its Mediaeval anachronism.

or to undermine the cognitive justification of a scientific theory (or of one of its components). Kant's semantics of singular cognitive reference shows that Newton's rejection of infallibilism about scientific justification is a corollary to the general rejection, entailed by Kant's semantics of singular cognitive reference, of infallibilism about cognitive justification within the non-formal domain of empirical knowledge, both common-sense and scientific. Kant's cognitive semantics entails that any empirical judgment or proposition can *have* determinate, specifically *cognitive* status only when referred to spatio-temporally localised particulars (directly or indirectly, *via* instrumentation). *Voi là!* The direct implication is that the mere logical consistency of a presumed alternative to any empirical claim, including any natural-scientific theory or law, does not suffice for its cognitive status. To be specifically cognitive, to have cognitive status at all (within the non-formal domain of empirical knowledge), an alternative must also be referred (and not merely be 'referable in principle') to spatio-temporally localised particulars. Only when so referred is any empirical statement, judgment or claim so much as a candidate for truth-evaluation, or for evaluation of its accuracy, of its informativeness, or (above all) of its cognitive justification. Kant's cognitive semantics thus excludes the infallibilist justificatory model of *scientia* from the entire non-formal domain of empirical knowledge. It thus rules out mere logical possibilities as counter-examples to, or as justificatory defeaters of, empirical claims, including in the natural sciences. Newton's Rule 4 thus embeds a second sound insight in semantics of singular cognitive reference.¹⁹ (These results are further clarified and justified below, §§70–74.)

Neither Kant's semantics of singular cognitive reference nor Newton's Rule 4 rejects the H-D model of explanation. They do, however, set an important condition for the cognitive status of any specific use of H-D methods: Until positive evidence is provided to justify an hypothesis, at least partially, that hypothesis has no cognitive status, and cannot defeat the justification of any evidentially supported theory or law in its domain. Newton's Rule 4 further requires of any presumptive alternative hypothesis, whether derived in accord with his own ideal of multiple independent agreeing measures, or by using H-D methods, that to be an *alternative* hypothesis, a hypothesis must either improve upon the precision of the relevant established theory or law, or it must delimit the scope of that theory or law by demonstrating specified exceptions to it.²⁰

19. These points from Kant's semantics of singular cognitive reference strongly suggest elements of a 'relevant alternatives' account of empirical justification. Kant developed just such an account in his analysis of the discriminatory character of our causal judgments about spatio-temporal particulars; see *KTPR*, 131–71, 244–68, and above, §§55–59.

20. On hypothetico-deductive methodology, see Gemes (2005).

70. Kant's Cognitive Semantics *Versus* van Fraassen's Constructive Empiricism

In *The Empirical Stance* (2002) and more recently in *Representing Science: Paradoxes of Perspective* (2008), Bas van Fraassen renewed his efforts, inaugurated in *The Scientific Image* (1980), to expound and recommend his philosophy of science, designated 'Constructive Empiricism', an anti-realist position defined by two central theses:

- 1) Science aims to give us theories which are empirically adequate;
- 2) accepting a theory only involves believing that it is empirically adequate, not that it is true. (*SI* 12)

Constructive Empiricism emphasises the pragmatics of language and a key distinction between believing a scientific theory to be true, and merely accepting a theory in view solely of its empirical adequacy, insofar as it implies with sufficient accuracy all the observations, predictions and retrodictions within its domain.²¹ It is worth returning to van Fraassen's original (1980) exposition of Constructive Empiricism because it contains both his primary justification of the view, and two fundamental flaws, hitherto neglected, which scuttle Constructive Empiricism in all its versions (including his 2008). (The core principles of Constructive Empiricism remain essentially unchanged, *cf.* below, §§71–74.)

The Thesis of Singular Cognitive Reference refutes infallibilism (post-1277 *scientia*) about cognitive justification in non-formal domains (§26). This result may appear to have no bearing on Constructive Empiricism, because, *e.g.*, van Fraassen (2002, 1–30) so often stresses scientific caution about the truth of theories. However, van Fraassen's core distinction between merely accepting a scientific theory and believing it to be true is an instance of a common epistemological strategy of regarding a weaker belief as better justified than a stronger one, if they are based on the same evidence (*etc.*):

[T]he assertion of empirical adequacy is a great deal weaker than the assertion of truth . . . (*SI* 69)

Van Fraassen repeatedly appeals to this premiss to justify his rejection of scientific realism, both about any one scientific theory and within

21. I discuss van Fraassen (2002) in Westphal (2006), §4. (The quotation on 138–9 of my (2006) is cited incorrectly; I have been unable to relocate its source. Nevertheless, the passage formulates the attitudes, values and beliefs van Fraassen (2002, 37, 47; *cf.* 62, 152) ascribes to the empirical stance.)

philosophy of natural science generally.²² His core argument may be put thus:

- 1) Natural scientists accept scientific theories, laws, hypotheses or explanations only because they are empirically adequate.
 - 2) 'Empirical adequacy' is adequacy to describe, predict, retrodict (and systematise) the relevant empirical data.
 - 3) Empirical adequacy is much weaker than and does not involve the (putative) truth of any scientific theory, law, explanation or hypothesis.
 - 4) The LAW OF WEAKENING: If two beliefs are based upon and are equally adequate to the same evidence, the stronger of those two beliefs is *less* well justified by that evidence than is the weaker (less committal) belief.
 - 5) Scientific Realism and Constructive Empiricism are both based upon the same evidence: the empirical adequacy of scientific theories.
- ∴ 6) Constructive Empiricism is better justified than Scientific Realism, as an interpretation of any particular scientific theory, and as an interpretation of natural science in general.

In *The Scientific Image* (1980), Van Fraassen appealed to what he there called 'the Law of Weakening' (here Premiss 4), to justify his Constructive Empiricism. Indeed, he argued that this contrast in strength or weakness of beliefs is simply a matter of logic. In this connection Van Fraassen noted that

... the 'if . . . then' [in English] is not correctly identified with any of the sorts of implication traditionally discussed in logical theory, for those obey the Law of Weakening:

1. If A then B; hence: if A and C then B.

But our conditionals, in natural language, typically do not obey that law:

2. If the match is struck it will light; hence (?): if the match is dunked in coffee and struck, it will light;

the reader will think of many other examples. The explanation of why that 'law' does not hold is that our conditionals carry a tacit *ceteris paribus* clause:

22. This principle is presupposed by and evident in, e.g., van Fraassen's (SI 36) remark: 'As presented, however, Vaihinger's view differed from Rutherford's by being logically weaker – it only withheld assent to an existence assertion. It follows automatically that Vaihinger's view cannot be a priori less plausible than Rutherford's'.

3. If the plant had not been sprayed (*and all else had remained the same*) then it would not have died.

The logical effect of this tacit clause is to make the 'law' of Weakening inapplicable. (SI 114–5; underscoring added)

NB: *The ceteris paribus clause, tacit in any causal-explanatory conditional statement, entails that van Fraassen's 'Law' of Weakening is irrelevant to ALL explanatory domains!* As van Fraassen here notes, because the logical 'Law of Weakening' holds only of systems of strict conditionals, it is thus irrelevant to any domains which employ *ceteris paribus* clauses (whether explicitly or implicitly). His illustration is truth-functional for ease of presentation, but he correctly notes, as quoted, that none of 'the sorts of implication traditionally discussed in logical theory' correctly capture our ordinary language conditionals. Hence the logical law of weakening is *irrelevant* to issues about scientific explanation, because causal explanations employ, ineliminably if implicitly, *ceteris paribus* clauses (Goodman 1946, Hempel 1988). Thus van Fraassen's appeal to the logical Law of Weakening (Premiss 4), involved in his key distinction between accepting a scientific theory and believing it to be true, is based upon an infallibilist presumption about empirical justification, namely, that whatever is required for justification within a logical system holds as such also in non-formal domains. Such infallibilist presumptions are exposed as *irrelevant in principle* to the non-formal domain of empirical knowledge by the Thesis of Singular Cognitive Reference, by Newton's Rule 4 and by the *ceteris paribus* clauses implicit (if not explicit) in any causal explanation. Consequently, van Fraassen cannot use the 'logical' Law of Weakening to justify his Constructive Empiricist account of any particular scientific theory, nor to criticise any realist interpretation of a scientific theory. Nor can van Fraassen use his logical law of weakening to justify his Constructive Empiricism in general, nor to justify his rejection of scientific realism in general. This core problem with van Fraassen's analysis in *The Scientific Image* has been neglected by philosophers of science for forty years! This indicates, I submit, how pervasive are infallibilist assumptions about justification in, e.g., recent mainstream philosophy of science.²³ (It is built into the predominant 'logical orthodoxy'.)

Appreciating the character and scope of this result requires distinguishing van Fraassen's claim about conditional statements in explanatory contexts from what might be thought to be a similar result reached by Brandom (1981). As indicated in his title, Brandom demonstrates this semantic paradox of material implication: Determining the truth-values

23. It is worth noting, further, that van Fraassen's 'Law of Weakening', i.e., 'If A then B; hence: if A and C then B' is not a principle of *formal* logic because it holds only under the *semantic* constraint that C is consistent with both A and B; it does not hold for any arbitrary term or statement C.

of all conditional sentences within a truth-functional language *also* determines all the truth values of all of the simple (categorical) sentences of that language. This result is absurd: Merely conditional truths should not determine categorical truths. Consequently, material implication cannot render 'if . . . then' in ordinary usage. Brandom (1981, 130) notes that modal forms of conditional sentences, such as Lewis's strict implication, do not generate this paradox. Brandom's result about material implication and his observation about modal conditionals are correct. However, van Fraassen makes a further, broader, more important point, also about modal forms of conditional sentences (all of which are strict logical implications): that *no* logic of conditionals can capture 'if . . . then' in explanatory contexts (whether commonsense, scientific or forensic), because explanatory usage of 'if . . . then' presumes at least implicitly a *ceteris paribus* clause (*cf.* Goodman 1946, Hempel 1988), so that even modal forms of conditional statements (such as strict implication) cannot correctly render uses of 'if . . . then' within explanatory contexts.

Van Fraassen's 'Law of Weakening', as a *logical* principle (so he claims), as such pertains *only* to strictly formal domains. However, the 'beliefs' mentioned in Premiss 4, the 'Law of Weakening', concern scientific beliefs, either about the empirical adequacy or the truth of scientific claims. Van Fraassen uses Premiss 4 within the non-formal domain of philosophy of science. Accordingly, Premiss 4 is not, and cannot be, justified simply as a logical principle, nor by logical principles alone, within this domain. This is a key example of an infallibilist presupposition, of presuming that what is either required, or sufficient, for justification within strictly formal domains, holds as such also in non-formal domains. Infallibilist assumptions appear in all criticisms of, and all alternatives to, realism (both commonsense and scientific) which appeal to 'logical gaps' between evidence and any relevant realist claim or view, as if logical gaps automatically are cognitive gaps because they are justificatory gaps. To the contrary, logical gaps as such count as justificatory gaps only within strictly formal domains, domains which can be defined by the sufficiency of strict deduction for justification within those domains (above, §§2.1, 11, 26). However, empirical knowledge, both commonsense and scientific, is a non-formal domain. Consequently, logical gaps *per se* are not justificatory gaps within the domain of empirical knowledge.

There is, of course, an important rule of evidence, most familiar as Ockham's Razor, according to which, of two explanations equally adequate to the same phenomenon, the less ontologically committal is better justified than the more ontologically committal explanation. This is the principle of simplicity, or of explanatory parsimony. It is not, however, a principle of logic, nor can it be justified simply by principles of logic. How and when the principle of simplicity can be used to assess competing causal explanations is complex and delicate (Sober

1975), but one point is uncontroversial: The principle of explanatory parsimony becomes relevant only after determining that two alternative causal explanations are equally adequate to the relevant domain and evidence. This is a very rare circumstance! Whether or how the principle of parsimony may be used to assess competing philosophical views is quite another matter requiring more careful attention than has been devoted to it.

Van Fraassen cannot support his Constructive Empiricism by appeal to the principle of explanatory simplicity also because Harper's findings show that two of van Fraassen's other premises are false: Scientists do not accept scientific theories simply because they are empirically adequate (Premiss 1 above). Moreover, scientific realism and Constructive Empiricism do not appeal simply to the empirical adequacy of scientific theories (Premiss 5 above). Indeed, Constructive Empiricism is not 'empirically adequate' (so to speak) to Newton's *Principia*, because as Harper shows (above, §67), 'empirical adequacy' is insufficient for disentangling the weights from the masses of planets in the ways central to the achievements of Newton's mechanics.²⁴ These flaws in Constructive Empiricism are as serious as they are widely neglected. They are further corroborated by Kant's semantics of singular cognitive reference in ways I now elaborate (§§71–73).

71. To What Extent Is Constructive Empiricism 'empirically' Adequate?

Van Fraassen repeatedly claims that empirical adequacy, even for Newton, only concerns what in fact occurs in nature:

When Newton claims empirical adequacy for his theory, he is claiming that his theory has some model such that *all actual appearances are identifiable with (isomorphic to) motions* in that model. (This refers of course to all actual appearances throughout the history of the universe, and whether in fact observed or not.) (SI 45; cf. 46).

24. For more general critique of 'empirical adequacy' as the goal of physics, see Hüttemann (1997). Harper (2011, 389–94) shows that Laudan's confutation of convergent realism does not hold against Newton's methodology. Note further that Harper's reconstruction of Newton's methodology and ideal of explanatory success, and his explanatory theory of gravitational force based upon them, shows that his explanatory dynamics is no merely 'pragmatic', and hence non-cognitive or non-realist, 'explanation' (*pace* van Fraassen).

Remember that empirical adequacy concerns actual phenomena: what does happen, and not, what would happen under different circumstances. (SI 60; cf. 61)

. . . the precise definition of empirical adequacy . . . relates the theory to the *actual* phenomena (and not to anything which *would* happen if the world *were* different, assertions about which have, to my mind, no basis in fact but reflect only the background theories with which we operate) . . . (SI 64)²⁵

However, regarding, e.g., the stability of the apsides of each planetary orbit, where any rotation of the apsides (orbital precession) would indicate some rate of diminution of attractive force other than an inverse square ratio to distance, Newton stressed quite the opposite. That the gravitational force between any two primary planets varies by the inverse square of the distance between them is stated in Proposition 2, Theorem 2, of *Principia*, Book III, as follows:

The forces by which the primary planets are continually drawn away from rectilinear motions and are maintained in their respective orbits . . . are inversely as the squares of their distances from its centre. (Newton 1999, 802; 1871, 395)

Concerning his justification of this second part of the theorem, the inverse square law, Newton states:

. . . this second part of the proposition is proved with the greatest exactness from the fact that the aphelia are at rest. For the slightest departure from the ratio of the square would (by book 2, prop. 45, corol. 1) necessarily result in a noticeable motion of the apsides in a single revolution and an immense such motion in many revolutions. (Newton 1999, 802; 1871, 395; cf. Harper 2011, 116)

As Harper repeatedly and rightly stresses, Newton's causal-explanatory gravitational theory gives pride of place to quite specific subjunctive conditional statements. Such subjunctive conditionals are central to

25. Likewise van Fraassen states: 'My view is that physical theories do indeed describe much more than what is observable, but that what matters is empirical adequacy, and not the truth or falsity of how they go beyond observable phenomena' (SI 64); 'When the hypothesis is solely about what is observable . . . empirical adequacy coincides with truth' (SI 72); '. . . we must define empirical adequacy directly, without an empirical detour: all the actual observable phenomena fit the empirical substructures in a certain one of these models' (SI 84).

Newton's methodology of devising analyses of motions which enable those motions to measure the strength of an attractive distance force, which requires distinguishing the actual value measured from other (causally possible) values. Having noted van Fraassen's infallibilist fallacy (§70), it is important to stress that the systematic dependencies Newton formulates as subjunctive conditional statements, are formulated as mathematically and physically precise continuous functions. That Newton's functions are continuous is not the key point here, but rather that his subjunctive conditionals are mathematically and physically defined. They are not creatures of modal logic, and are not subject to the vagaries of ill-defined 'accessibility relations' between possible worlds, nor of philosophers' 'modal intuitions', including not infrequent 'modal scepticism'. This is one reason for my so stressing (above, §§28, 57) that Kant distinguished between the transcendental modalities of his Postulates, whatever epistemic modalities may pertain to cognitive justification of particular empirical judgments and whatever causal modalities pertain to the causal structure and actions of physical particulars, *all* of which are distinct to strictly logical modalities.²⁶

Van Fraassen's empiricist focus upon solely what does happen in nature, and his rejection of counterfactuals about what would happen *in nature* under identifiably different conditions, are flatly inconsistent with Newton's mechanics. In this crucial, elementary regard, van Fraassen's Constructive Empiricism is plainly *inadequate* to its purported domain, which includes, centrally, Newton's classical mechanics. N.B.: In *Representing Science* (2008, 317–9) van Fraassen reaffirms exactly the same Constructive Empiricism, and does so directly in connection with Newton's classical mechanics; in *Representing Science* he restricts and revises his Constructive Empiricism only to accommodate statistical theories.²⁷ This fundamental inadequacy of Constructive Empiricism should not have been neglected for forty years.

My surmise is that this basic error reflects fixation upon five views characteristic of the empiricist stance:

1. Observational evidence 'under-determines' physical theory.
2. Disregard (merely) 'theoretical' content of scientific theories; focus solely on a theory's 'empirical content'. (*E.g.*, *SI* 64; quoted just above).

26. This is also to say, the points made here are more basic than those debated by Ladyman (2004) and Dicken (2007), though the present considerations undermine the latter's empiricist rejoinder; natural science is not hostage to philosophical allegations about its metaphysical fortunes nor famines; if anything, metaphysics ought to be hostage to natural sciences; *cf.* Ladyman, *et al* (2009).

27. For further critical reflections on van Fraassen (2008), see Okruhlick (2009). Fortunately, much of van Fraassen's *Representing Science* is, by design (2008, 3), independent of his Constructive Empiricism.

3. Theories are to be used only for, and assessed only in terms of, description, prediction, retrodiction (and systemisation) of observations.
4. Causality consists only in regularity.
5. Explanation is only of individual events by appeal to a relevant covering law.²⁸

The problem of underdetermination of theory by evidence is a serious, though not insuperable problem for H-D methods (Gemes 2005). Empiricist pre-occupation with sensory observations, however, has long tended to obscure complex, significant distinctions and relations between sensory observations, empirical data and scientific evidence (*cf.* Radder 2006). More importantly, Harper (2011, 126–42, 194–219, 238–56, 372–8) shows that Newton’s much more robust methodology (summarised above, §67) vastly reduces the underdetermination of theory by observational data. In contrast to empiricist preoccupation with individual events, Newton’s causal-explanatory dynamics aims to explain (and to correct and to improve upon, *per* Rule 4) Kepler’s celestial kinematics by explaining them and a huge range of further kinematic regularities, such as tides and pendula. Regularity theories of causality, and likewise the ‘covering law’ model of explanation, cite natural regularities in order to explain individual events, though such explanations do no more than classify an event as an instance of an observed natural regularity. Newton’s mechanics instead aims to explain the kinematics of natural regularities dynamically, by identifying, measuring and justifying his physical claims about the existence and causal action of gravitational force of attraction. This fundamental distinction within mechanics between kinematics and dynamics is either ignored or elided by empiricist philosophy of science.

72. Newton’s Mechanics: Dynamics or Kinematics?

The tendency to reduce Newton’s dynamics to kinematics, *i.e.*, to only a precise description (prediction, retrodiction) of various motions, has been characteristic of empiricism from Berkeley and Hume down to van Fraassen.²⁹ Consider one subtle and influential instance of this pervasive tendency. In *Foundations of Space-Time Theories*, Michael Friedman claims that

Newtonian gravitation theory can be formulated within the framework of either of our two versions of Newtonian kinematics. (Friedman 1983, 93)

28. *Cf.* Maxwell (1975), 159; Schlesinger (1975), 324–6; Hempel (1965), Beauchamp and Rosenberg (1981).

29. Some key instances are discussed in Westphal (2015b), §7.

He further claims that such formulations show that

it is possible to ‘geometrize away’ gravitational forces in the context of Newtonian theory by incorporating the gravitational potential into the affine connection. (Friedman 1983, 95)

Whilst literally true, this statement is seriously misleading, because Friedman neglected the question, Which aspects of Newton’s dynamic theory can be represented (or ‘formulated’) merely kinematically, and which cannot? In this crucial regard, Friedman neglected the important point made by Kaplan, that modelling a domain properly requires carefully distinguishing genuine features of the domain so modelled from mere artefacts of the model.³⁰ This point is so basic, so important, and so often neglected that it deserves a name; I shall call it ‘Kaplan’s *Caveat*’.³¹

Friedman’s (1983, 97) reformulation of Newton’s gravitational theory neither eliminates nor relativises ‘the notion of acceleration’. Acceleration, however, is a kinematical relation (change of velocity over time). Newton’s gravitational theory (his mechanics) provides a dynamic, *i.e.* causal explanation of the kinematics of acceleration within our solar system (and throughout the universe, until demonstrated otherwise in precise detail, *per* Rule 4). That Friedman’s reformulations of Newtonian theory are merely kinematic, and *not* dynamic, causal or explanatory, is indicated, *inter alia*, by how Friedman (1983, 99) eliminates reference to mass in his equation (49), thus making reference to mass in equations (34), (41) and (42) irrelevant, despite Friedman’s recognition that in his ‘Newtonian gravitation theory (§III.3)’,

the spacelike vector field on the right-hand side of equation (34) is tied to the mass of bodies by equations (41) and (42). (Friedman 1983, 119–20)³²

30. Kaplan (1975, 722) notes, ‘When we construct a model of something, we must distinguish those features of the model which represent features of that which we model, from those features which are intrinsic to the model and play no representational role. The latter are artifacts of the model’. Although he makes this point in connection with formal models within possible-worlds semantics, his point holds generally about formal modelling.
31. Kaplan’s *Caveat* is an important case in point of Lewis’s (1930) point, noted above (§21), that non-formal considerations are required to use, and to *assess* the proper use of, any formal logistic system within a non-formal domain.
32. Friedman’s §III.3 is on (1983, 92–5); his equations (34), (41) and (42) appear on (1983, 92–3). It suffices for present purposes to track the order of Friedman’s formulae, to note that mass drops out of his merely kinematical ‘Newtonian’ theory. For critical assessment of Friedman’s (1992) view of Kant, see Westphal (1995), Ospald (2010).

Reference to mass is important in Newton's dynamics because the strength of a body's gravitational force is proportional to its mass. Incorporating Newtonian 'gravitational potential' (Friedman 1983, 95; quoted above) into Friedman's 'affine connection' only preserves Newtonian kinematics and provides only a regularity account of 'Newtonian' motions, because it fails to formulate, to represent or hence to measure gravity as an explanatory, causal (dynamic) distance force (*per* Harper 2011; above, §67). Because it omits any mention of, or reference to, mass, Friedman's equation (49) fails entirely to formulate Newton's dynamics.

This subtle, unwitting substitution of merely descriptive, quantitative kinematics for explanatory dynamics occurs again when Friedman (1983, 123) 'replace[s] (41) of §III.3 with (89)', where (89) is a successor to the strictly kinematical (49) previously mentioned; '*F*' (purportedly designating 'force') in Friedman's equation (90) is only kinematically defined. This is exactly the error noted earlier (§67), of mistaking Newton's Definitions 6–8 of (three different) *quantities* of accelerative forces for definitions of *forces*. Consequently, Friedman's final 'action-at-a-distance theory (90), (91)', which 'is better than either of our two field theories' (1983, 124), defines 'action' only kinematically, not dynamically (not causally). His final theory (90), (91) is merely kinematic and voids altogether Newton's achievements in dynamics, including all his precise measures of gravitational *forces* throughout our solar system.

Assimilating Newton's dynamics to descriptive kinematics may satisfy the very weak requirements of a regularity notion of causality, but Newton's dynamics is much more stringent and much more successful than this, in part because Newton's *explanandae* are periodic motions within our solar system, both terrestrial and celestial, rather than the individual events central to regularity theories, upon which alone Friedman's analysis ultimately focusses. Whereas regularity theories of causality purport to 'explain' individual events by subsuming them under a general regularity, Newton's theory of gravity aims to explain kinematic regularities, which *are* Newton's natural *phenomena*, dynamically, by developing quantitatively exact measurements of dynamic, specifically gravitational forces which causally govern motions of physical bodies within our solar system, under specified initial conditions. Limiting Newton's dynamics to what can be represented kinematically voids his entire explanatory undertaking. This is a fundamental error in Friedman's (1983) modelling. Neglecting Kaplan's *Caveat* generates obfuscation rather than insight.

The problem with 'positivism', broadly construed as favouring quantitative-descriptive regularities and dispensing with dynamic-explanatory (causal) laws and forces, is that substituting purely quantitative relations amongst observed phenomena replaces genuinely physical problems with purely mathematical-descriptive ones, thus directly obviating any explanatory character of physical theory because the purely quantitative descriptions lack specifically physical meaning. Although

Mach (e.g., 1933, 473) often appears to express a formalist, positivist, merely mathematical-descriptive view of laws of nature, he often rightly and emphatically distinguished between genuinely physical and merely mathematical-descriptive problems:

In two instructive writings (*Kepler's Lehre von der Gravitation*, Halle, 1896; *Die Gravitation bei Galileo und Borelli*, Berlin, 1897) E. Goldbeck investigates the early history of the doctrine of gravitation with Kepler on the one hand and Galileo and Borelli on the other. Despite his adherence to scholastic, Aristotelean notions, Kepler has sufficient insight to conceive the planetary system as a physical problem; the moon, in his view, is *swept along* by the Earth, and on the other hand it *pulls* the tide toward itself, just as the Earth attracts heavy bodies. He also sought the planets' source of motion in the sun, from which extend immaterial levers which rotate with the sun, moving distant planets more slowly than the near ones. By this view, Kepler can surmise that the period of rotation of the sun is less than 88 days, the period of one orbit of Mercury. Occasionally he also represents the sun as a revolving magnet, opposite which are the magnetic planets. In Galileo's world view the formal-mathematical-aesthetic viewpoint predominates. He rejects any assumption of attraction and even scoffed at Kepler's notion of some such attraction. For Galileo the orbital system is not yet a genuine physical problem (*kein eigentlich physisches Problem*) [*sic*]. Nevertheless, like Gilbert he assumed that an empty geometrical point cannot effect anything . . . (Mach 1933, 182–3; 1893/1960, 532–3; tr. emended)

Here Mach clearly recognises that treating laws of nature as purely quantitative relations (descriptions of regularities, however precise) fails to treat laws of nature as solutions to specifically *physical* problems.³³ This is precisely what positivist views of all stripes fail to do, including van Fraassen's Constructive Empiricism. This contrast between merely mathematical-descriptive and physical-explanatory problems is echoed in Mach's emphatic summary of his main finding in *Mechanik*:

. . . the most important result [*sic*] of our considerations is that even the apparently simplest mechanical principles have a complex nature, that they rest on uncompleted, indeed on incompletable [series of] experiences, that practically they are sufficiently secured, in view of the sufficient stability of our environment, to serve as a basis for mathematical deduction, but that they cannot at all themselves be

33. Galileo expressly restricts his theory to kinematics at the start of Day 3 of his *Dialogues*, claiming (altogether plausibly) that causal inquiries are premature until the properties of motions are rightly understood.

regarded as mathematically established truths, but rather as propositions which are not only capable of, but indeed require a continued experiential testing (*Erfahrungskontrolle*). (Mach 1933, 231, my tr.; the original is almost entirely italicised.)³⁴

Here Mach too recognises that treating laws of nature as purely quantitative relations (descriptions of regularities, however precise) fails to treat laws of nature as solutions to specifically *physical* problems. This is precisely what positivist views of all stripes fail to do, including van Fraassen's Constructive Empiricism. Regularity theories of causality and the covering-law model of explanation substitute purely quantitative problems of description, prediction and retrodiction of events for the physical problems of causation investigated and often explained in natural science.

73. A Glimpse at the Semantics of Scientific Theories

As regards the semantics of scientific theories, van Fraassen maintains:

The notions of empirical adequacy and empirical strength, added to those of truth and logical strength, constitute the basic concepts for the semantics of physical theories. (*SI* 68)

To the contrary, we have seen that Kant's semantics of singular cognitive reference (§26) also belongs to the basic semantic concepts of physical theory, as is implicitly though correctly indicated by Newton's Rule 4 (§69). This is no trivial addition. Kant's cognitive semantics has a further important implication for understanding physical theory and explanation. Nancy Cartwright (1983) contends that the laws of physics literally 'lie', including, *e.g.*, Newton's three laws of motion (above, §67). To *lie*, Newton's laws as such must make a claim to truth. This they could do only insofar as they were true simply as descriptions. Cartwright is correct that they are not true simply as descriptions, because they are idealised in such a way that no natural system instantiates only those laws and no other causal constraints. What is known as 'the semantic interpretation' of scientific theories, prominently advocated by Suppes and by Cartwright, as well as by van Fraassen, implicitly presumes an inadequate descriptions theory of reference (*per* above, §71), insofar as theoretical statements (including statements of physical laws) taken as descriptions are held to specify appropriate data models of that theory.³⁵

34. Corresponding to the passage cited here is Mach (1893/1960), 237–8.

35. The derivation of the model-theoretic interpretation of scientific theories, including van Fraassen's Constructive Empiricism, from Russell's theory of definite descriptions, is detailed very nicely by Demopoulos (2003); *cf.* van Fraassen (2006), 541–2, 545.

Kant's semantics of singular cognitive reference shows that mere linguistic reference (or, analogously, conceptual content, intension) as such is in principle insufficient for epistemology (§26), including that branch of epistemology which is history and philosophy of science (§§68–73). Merely as sentences, (statements of) physical laws make *no* cognitive claim, whether true or false, accurate or inaccurate, justified or not. As with synthetic statements generally, theoretical statements in physical theory obtain specifically *cognitive* status only when referred, in precise, specified ways, to particulars we have localised within space and time. This alone makes theoretical statements truth-evaluable; this alone makes them evaluable as approximations; this alone affords them any possibility of cognitive justification and also any assessment of their cognitive justification. In short, Book III of Newton's *Principia*, that is, his 'System of the World', is the cognitive semantics required by, and required for, his mathematical-causal explanatory theory of gravitational force developed in Books I and II. This is how (*inter alia*) Rule 4, and this is how Harper's masterful reconstruction of Newton's *Principia*, which focusses on Book III, are to be understood. This is the cognitive-semantic point of Newton's contrast between the 'mathematical' theory developed in Books I and II and the 'philosophical', *i.e.*, natural philosophy, or scientific theory developed in Book III, to which Newton draws attention in the Preface to Book III (1999, 793; 1871, 386; *cf.* Harper 2011, 84–6ff).

In connection with the 'semantic interpretation' of scientific theories (*e.g.*, Suppes, Cartwright, van Fraassen), Brading and Landry (2006) rightly stress the crucial, ineliminable role of an *empirical theory* of the relevant natural phenomena for connecting any model-theoretic formalisation of a physical theory to any actual empirical events:

. . . without an (empirical) theory of the phenomena, one cannot speak of 'the structure of the phenomena', for example, one cannot characterise the structure of the phenomena in terms of the shared structure of its models. (Brading & Landry 2006, 575)

. . . without a[n empirical] theory of the phenomena one cannot formalize (again, by model theoretic methods) the treatment of the structure of the phenomena in terms of data models alone, and so one cannot use the semantic view's account of shared structure between models to fully account for the applicability of a theory to the phenomena and, thereby, to establish a theory-world connection. (Brading & Landry 2006, 575; *cf.* Demopoulos 2003, 387–401)

Put in these terms, Book III of Newton's *Principia* provides his empirical theory of the natural phenomena of motion, which provides his dynamic (causal) theory in Books I and II with their specifically cognitive status. Furthermore, Newton's dynamic theory in Books I and II thus obtains its cognitive status, including its reference to specific natural phenomena,

without any unnecessary detour through model-theoretic semantics. Model-theoretic formalisations of physical theories can be very useful heuristically, but such formalisations are neither theoretically nor semantically, and certainly not cognitively, necessary.

In response to Demopoulos (2003), van Fraassen (2006) tries to improve his Constructive Empiricism, but neither there nor in *Representing Science* (2008) does he address Brading and Landry's important point about how any model-theoretic semantics for a scientific theory requires an empirical theory of the phenomena in order to be linked to actual natural phenomena. Nor, accordingly, does he recognise the point made here (and implicitly by Harper (2011), whose study requires neither use nor mention of formal model theory), that such an empirical theory of the relevant phenomena renders the model-theoretic formalisation cognitively otiose. Nor does van Fraassen (2008) recognise that by defining 'empirical adequacy' solely in terms of *de facto* natural occurrences, his Constructive Empiricism cannot at all account for the systematic causal dependencies amongst naturally occurring motions, all formulated subjunctively (and mathematically), which are identified and *measured* very precisely by Newton's gravitational theory, and which are preserved, also in subjunctive, mathematical-physical form, by Einstein's General Theory of Relativity. Consequently, van Fraassen's empiricism is not a constructive contribution to our understanding of physical theory and explanation.

Insofar as Kant's semantics of singular, specifically cognitive reference is embedded in, and strongly supports, Newton's Rule 4, Kant's cognitive semantics contributes decisively to justifying Newton's causal realism regarding gravitational force. Constructive Empiricism provides no sound basis for rejecting Newton's causal realism. Though General Relativity dispenses with gravity as a *force*, it nevertheless preserves *all* of the systematic dependencies Newton identified in the *Principia* (Smith 2014), and it preserves Newton's correct emphasis on the mass of mutually gravitating bodies, which (unbeknownst to him) accounts for the circumambient, proportional curvature of space-time now thought to be responsible for orbital phenomena. The extent to which such circumambient curvature of space-time, proportional to the mass of bodies, is itself a causal phenomenon, and not merely an artefact of measurement conventions, remains debated (Redhead 1998). Accordingly, Newton's causal realism about gravitational force is not ruled out by contemporary physical theory, and certainly not by contemporary empiricist philosophy of science!

74. Conclusion

Van Fraassen noted (*SI* 19) that 'the major questions of epistemology' cannot be settled '*en passant* in philosophy of science'. Indeed so. Yet

developing a philosophy of science on faulty epistemological preconceptions is ill-fated from the outset. For reasons examined here I conclude that this is the misfortune of van Fraassen's Constructive Empiricism, whether in 1980 or in 2008. That the fundamental flaws in Constructive Empiricism identified here (§§70–73) have gone unnoted for four decades indicates clearly that much contemporary philosophy of science requires fundamental re-examination of its central epistemological presuppositions: In particular, excessive if not exclusive focus on propositions and strict logical deductions, hence reliance on implicit, unCritical infallibilist presumptions, whilst disregarding the cardinal distinction between formal and non-formal domains and the proper, justifiable *use* of (*e.g.*) propositions within some actual context of inquiry, not merely in some imaginary, merely logically possible 'world'.

We shall not understand empirical sciences until we rescind the notion that empiricism has a monopoly on empirical knowledge. It is understandable, of course, that 20th Century (c.E.) empiricists took Kant at his word, that his transcendental analysis of the necessary conceptual, intuitive and judgmental conditions of empirical knowledge requires his Transcendental idealism. Empiricists rejected both by rejecting 'the' synthetic *a priori*. One of Kant's key questions was, How is pure natural science possible? (*KdrV* B20). It must be acknowledged that Transcendental idealism did not help answer this question; neither did most of his *Metaphysical Foundations of Natural Science*, as Kant himself later recognised.³⁶ However, more careful examination of Kant's Critical philosophy shows that, and how, it is possible to disentangle Kant's insightful epistemology and theory of cognitive judgment from his Transcendental idealism. So doing reveals one of Kant's great achievements: His semantics of singular cognitive reference, which has such basic and important implications for our understanding of empirical knowledge, including natural science. One of these implications is that in non-formal domains, mere logical possibilities as such have no cognitive and hence no scientific status, especially not as justification defeaters. Positively, by so strongly supporting the cognitive-semantic core of Newton's methodological Rule 4 of (experimental) Philosophy, Kant's semantics of singular cognitive reference contributes to showing that Newton is entitled to his realism about gravitational force; neither Constructive Empiricism nor any other form of empiricism can show otherwise. A third important implication is that philosophy of language and philosophy of mind may augment

36. See *KTPR*, §§30–59. The one tenable part of Kant's *Metaphysical Foundations*, he realised, is its first chapter, 'Phoronomy', which concerns motions and their combination. Kant's results there are not trivial; they suffice to show that arbitrarily large reference frames can be constructed for any relative motions we may wish to investigate; see Carrier (1992).

epistemology, though they cannot supplant it. A fourth important implication is that answering the question, How is natural science possible?, requires understanding the natural sciences as they are, in their own terms and methods, rather than trimming one's philosophical picture of science to fit one's philosophical predilections. Empiricists have been doing that for far too long. Newton's methodology and ideal of explanatory success remain important, not only for understanding Classical Mechanics and General Relativity, but also (*e.g.*) contemporary physical cosmology (Harper 2011, 394–6). Kant's semantics of singular cognitive reference points the way forward in history and philosophy of science by providing the basis of a sound cognitive-semantic interpretation of scientific theories. The reason Kant's epistemology remains so important today is that his critique of Cartesianism and his constructive alternative to it are so much more profound, informative and cogent than anything yet developed within the analytic tradition.³⁷

37. Compare, *e.g.*, §§7–11 above to Alston (2005), 204–10; or *KTPR* to Burge (2010).

11 How Kant Justifies Freedom of Agency (*Without* Transcendental Idealism)

75. Introduction

In PART 2 I have argued, both in explication and in defence of Kant's analysis, that we are able to make legitimate causal judgments only about spatio-temporal substances, so that we must be agnostic about causality within the introspective psychology Kant criticised, which transpires (so far as we can experience, know or justifiably judge) solely in time within inner sense. Our legitimate causal judgments are restricted to spatio-temporal events because the three principles of causal judgment defended in the 'Analogies of Experience' can only be used conjointly, to discriminate any perceived causal event or process from its causally possible alternative scenarios. Because the principle of the Third Analogy expressly holds only of *spatio*-temporal events, all three principles regulating our determinate causal judgments about what we perceive are restricted to spatio-temporal objects and events. Accordingly, we must be agnostic about whether, or the extent to which, psychological phenomena within inner sense can be known to be causally structured or determined (above, §§45, 46, 53; *KTPR* §61).¹

I have further argued that Kant's analysis of the autonomy of our power of judgment suffices to justify our rational freedom of deliberation and judgment, regardless of the causal structure and functioning of our neurophysiology, because rational judgment is normatively structured insofar as it consists in critical assessment of justifying grounds, principles, evidence and our use of them in any specific judgment, and because the normative character of justificatory judgment cannot be reduced to, nor eliminated by, causal considerations. This holds equally for theoretical and for practical judgment and judgments (Westphal 2016a, §§22, 27, 28; 2018a, §§2–3, 83–91).

These findings shift the locus of issues about causal determinism with regard to human action to outward, bodily behaviour. About deterministic

1. Key features of my analysis are neglected by McCarty (2009, 65–6), Pollock (2001) and Sturm (2001; 2009, 254); hence their rejoinders fail; *cf.* Wolff (1992), 125–6.

explanations of our bodily behaviour Kant was deeply pessimistic, judging from his despair about understanding even the biology of the growth of a blade of grass (*KdU* §75, 5:400).² Scientific knowledge has expanded astoundingly since then, though not to the advantage of determinism, nor to the detriment of Kant's cognitive reservations about deterministic causal explanation of human behaviour.

Here I return to the issue, not of psychology, but of bodily behaviour, to corroborate and augment my previous analyses. To do so, I appeal to a third finding (above, §53), that Kant's transcendental justification of our causal judgments about perceptible, causally interacting substances in our surroundings does not justify causal determinism universally across the domain of spatio-temporal events. Instead, his transcendental proof of Critical commonsense realism demonstrates that there is, and each apperceptive human being succeeds in recognising, sufficient causal structure and interaction amongst perceptible particulars in his or her surroundings to be able to plot a personal history through space and time, to whatever extent *S*/he succeeds in so doing. This extent cannot be determined *a priori* (*KTPR*, cf. Harper 2007). This result may seem 'unKantian', but here it is important to distinguish views Kant espoused and the views Kant justified. I grant that Kant espoused universal causal determinism within the spatio-temporal domain; I deny he justified it.³ Kant, like many philosophers then and now, held that Newtonian mechanics is deterministic. However prevalent, this presumption is false.

2. Kant states determinism about human bodily behaviour, and its consequent predictability in principle, repeatedly in many published texts. It is a delicate point, discussed in detail in *KTPR*, that Kant did not fully appreciate some of the most profound and important implications of some central analyses presented in the *Kritik der reinen Vernunft*, the net result of which is that Kant neither did, could, nor needed to justify universal causal determinism within the entire spatio-temporal realm. About Kant's 'Newton of a blade of grass', see Teufel (2014).
3. Some readers have rejected my interpretation of Kant's views because, they claim, I ascribe to Kant a 'transcendental realism', which he rejected by espousing instead transcendental idealism and empirical realism; e.g. Hall (2006), 729, (2009), 208–10; Kannisto (2010), 209n.9, 236; Schulting (2009), 383. Kant's quadruple distinction between transcendental and empirical senses of 'realism' and 'idealism' (*KdV* A369–70, cf. A491–3/B 519–21) is *not* an independent, self-evident *premiss* by appeal to which to refute other views. Kant clearly recognised (*ibid.*) that this set of distinctions is only justified by transcendental idealism, and by his arguments for that idealism. By criticising Kant's only arguments for transcendental idealism strictly internally, I have shown that Kant's quadruple distinction is not justified by any arguments or proofs Kant offers. No substitutes are available. Hence Kant's quadruple distinction cannot be assumed to criticise or to reject my interpretation. Such critics commit a *petitio principii* against my analysis, and in so doing ascribe a major *petitio principii* to Kant against all who reject transcendental idealism. Neither do I ascribe 'naturalism', nor any 'metaphysical' views to Kant (cf. *KTPR* §61); Kant's *Critique of Pure Reason* provides, if not altogether wittingly, a sound transcendental proof of realism about spatio-temporal, causally interacting physical objects (above, PART 2). Kant's transcendental analyses and proofs stand independently of his transcendental idealism. That is demonstrated by strictly internal

Causal determinism requires a causally closed system, but this premiss is independent of, and is not justified by, Newtonian mechanics (Earman 1986, 4–54). Moreover, even relatively simple mechanical systems do not behave deterministically, though this was only established in the mid-20th Century (Lighthill 1986).

One of the most famous statements of determinism from the Modern period is LaPlace's. I reconsider LaPlace's declaration because it does not assert what it has so very widely been taken to assert. Reconsidering his statement provides a helpful context for reconsidering the scope and limits of our causal judgments and our causal knowledge about bodily human behaviour.⁴ I begin with the question, is the Principle of Sufficient Reason regulative or constitutive?

76. The Principle of Sufficient Reason: Regulative or Constitutive?

In connection with Kant's theory of judgment it is common to distinguish between regulative and constitutive principles, and in particular, between the constitutive principles of Kant's Transcendental Analytic and the regulative principles of Kant's Transcendental Dialectic. This is too facile. The principles of the 'Analogies of Experience' are both constitutive and regulative; they regulate our determinate causal judgments, and thereby indicate conditions of successful causal judgment we must satisfy in order to distinguish ourselves from at least some of our surroundings, failing which we each would fail to be apperceptive, *i.e.*, conscious of our own existence 'as determined in time' (B275), that is, as so much as being aware that some events appear to precede, to accompany or to succeed others. We are better advised to distinguish regulative and constitutive roles or uses of various principles.⁵

LaPlace was a leading exponent of causal determinism, the thesis that each and every spatio-temporal event is sufficiently caused to occur by other (prior or concurrent) physical events. Famously, LaPlace stated:

We ought to regard the present state of the universe as the effect of its antecedent state and as the cause of the state that is to follow. An

critique of his transcendental idealism, a powerful kind of assessment only attempted previously by Hegel, though without developing it in sufficient detail.

4. My analysis and conclusions both corroborate and undergird Horst's (2011), because he neglects the issues examined herein about singular cognitive reference and its implications for causal explanation and knowledge.
5. This way of putting Kant's point suffices for present purposes, without the subtleties of his complex views on regulative and constitutive roles of various *a priori* principles. These are examined by Teufel (forthcoming), whom I thank for sharing with me his work in progress.

intelligence knowing all the forces acting in nature at a given instant, as well as the momentary positions of all things in the universe, would be able to comprehend in one single formula the motions of the largest bodies as well as the lightest atoms in the world, provided that its intellect were sufficiently powerful to subject all data to analysis; to it nothing would be uncertain, the future as well as the past would be present to its eyes. The perfection that the human mind has been able to give to astronomy affords but a feeble outline of such an intelligence. Discoveries in mechanics and geometry, coupled with those in universal gravitation, have brought the mind within reach of comprehending in the same analytical formula the past and the future state of the system of the world. All of the mind's efforts in the search for truth tend to approximate the intelligence we have just imagined, although it will forever remain infinitely remote from such an intelligence. (LaPlace 1820, rpt: 1847, 7:vi–vii; tr. Nagel 1961, 281*n*.4.)

Note that LaPlace's statement is doubly subjunctive: Whatever may have been his theism, LaPlace is emphatic that the proposed intelligence is *not* human and *is* imaginary. More importantly, this passage does not *assert* or *affirm* determinism! LaPlace expressly states that we 'ought to regard' (his verb is *envisager*)⁶ the present state of the universe as the effect of its preceding state and as the cause of its succeeding state. LaPlace expressly formulates a *regulative* principle, a principle regulating our inquiries into nature; specifically, a principle guiding our statistical inquiries into natural phenomena, granting that in his time natural processes were (significantly, the term is unavoidable) regarded as causally deterministic, so that statistical regularities were thought to be underwritten by insufficiently understood uniform, deterministic causes. (LaPlace, too, was unaware of the stringent requirements for causal determinism noted above, §75.)

Imperfections in Newton's mathematical physics allowed him to use the *Principia* to support natural theology. Johann Bernouli rectified Newton's mathematics by refounding his physics on analysis (calculus). That rectification voided Newton's natural theology, as LaPlace knew. LaPlace's *System du monde* excises any trace of natural theology. LaPlace of course did not know the recent demonstration that Newtonian physics is deterministic only within a very narrow range of special initial conditions (Lighthill 1986). LaPlace's speculation about the physically omniscient intelligence is false. Much more important than the truth-value of LaPlace's supposition about a physically omniscient intelligence is instead his clear indications, marked by his double-subjunctive formulation, that

6. «Nous devons donc envisager l'état présent de l'univers, comme l'effet de son état antérieur, et comme la cause de celui qui va suivre.»

the intelligence he supposes is *merely* a supposition. LaPlace neither asserts that there is (nor even that there could be) such an intelligence, nor does he assert that universal physical determinism is true. No *assertoric* conclusion is justified by (nor on the basis of) mere *supposition*. Instead, LaPlace expressly recommends that we *regard* the universe *as if* universal physical determinism were true, to guide our investigations into nature: specifically, in this text, into *statistical* (not deterministic) regularities in nature.

LaPlace correctly formulates universal causal determinism as a *regulative* principle of inquiry, which we may *regard* as constitutive of nature, *although* we do not know that it holds in the general case, certainly not on the basis of mere assertion, supposition or thought-experiment, nor on the basis of our current state of causal knowledge. We only have causal knowledge in those cases where we have sufficient causal explanations of actual phenomena, where a sufficient explanation provides specific, jointly sufficient causes of the phenomenon in question. LaPlace optimistically suggests that Newtonian mechanics puts us within reach of the proper analytical formulae, and LaPlace contributed decisively to the improvement of those formulae and their use (*cf.* Grant 1852, iv–vi, 53–6, 59–65, & *passim*), but he knew very well we lacked and always shall lack the requisite kind of total state descriptions of the world for such (putative) calculations. In fact, Newton’s gravitational theory does not justify LaPlace’s deterministic world view (Harper 2011, 385–8). As for the computational capacity of LaPlace’s demon, it must be merely a thought experiment because no material being can have sufficient computational power for the calculations LaPlace stipulates as within the supposed intelligence’s analytical capacities (*cf.* Longley 2006). LaPlace’s ideal of perfect knowledge of the physical universe must be rescinded, to better understand both the physical universe and our knowledge of it (Wimsatt 2007), including our knowledge and understanding of human action. The significance of this point can be clarified and amplified by recalling (briefly) Kant’s cognitive semantics and considering its implications for the character and scope of our causal knowledge.

77. Kant’s Semantics of Singular Cognitive Reference

Above I have argued that Kant’s *Critique of Pure Reason* contains an original and powerful semantics of singular cognitive reference which, *avant la lettre*, incorporates Evans’s (1975) thesis about predication as ascription, which Kant embeds within a much richer epistemological analysis. Evans demonstrated, even if only implicitly, that predication requires conjointly specifying the relevant spatio-temporal region and some manifest characteristics of any particular we self-consciously experience or identify. These conjoint specifications may be approximate; the key point is that spatio-temporal designation and ascription of manifest

characteristics are *conjoint, mutually interdependent* cognitive achievements which integrate sensation ('sensibility') and conception ('understanding'). Kant argues for this same on semantic and epistemological grounds; he justifies it by arguing for his own Thesis of Singular Cognitive Reference. 'Cognitive' reference concerns our reference to (putatively) known individuals, as instances of our (putatively cognitive) judgments or assertions (attributions, ascriptions). Knowledge, justified belief, error or indeed experience (whether veridical or not) of or about particulars require satisfying further conditions of reference (further 'constraints', if one will) than those implicit or explicit within conceptual content or linguistic meaning (intension) alone. However specific or detailed a description (intension) may be, it cannot by itself determine whether it is referentially empty, determinate or ambiguous because it describes no, only one or instead several individuals. This is independently a function of what there is. To *know* any one spatio-temporal particular (even putatively) requires both correctly ascribing characteristics to it *and* localising it in space and time. Integrating both is required for ascription, however (in)accurate, and also for knowledge of (or even error about) that individual: ascription (even putative ascription) is a cognitive achievement. Only through singular sensory presentation *and* competent use of conceptions of time, times, space, spaces, individual and individuation, Kant further argues, can we localise any object or event in space and time (even putatively).⁷ Only through ostensive designation can we *ascribe* the predicates used in our judgment *to* any *one*, putatively known particular. Therefore, ascription of characteristics is required for singular, specifically *cognitive* reference to any spatio-temporal particular. Only in this way can we note, specify or determine precisely *which* spatio-temporal region to designate, in order to grasp *this* (intended, ostended, presented) particular, and to ascribe to it any manifest characteristics, all of which is required to achieve any knowledge (whether presumptive or actual) of that particular. In brief, this is how Kant shows that determinate cognitive judgments are possible for us only through conjoint spatio-temporal designation of, and predicative ascription of characteristics to, any experienced particular(s). Kant's Thesis of Singular Cognitive Reference pertains to non-formal, substantive domains; *i.e.*, outside pure axiomatics; in particular, it pertains to empirical knowledge of the spatio-temporal world we inhabit.

Kant's Thesis of Singular Cognitive Reference entails that, whatever may be the conceptual content or linguistic meaning (intension) of our claims, judgments or propositions, they have no specifically *cognitive* status unless and until they are referred to particulars we have

7. Here again I waive the further issues involved in observational or measurement instrumentation.

(presumptively) localised within space and time. This requirement is necessary for the truth-evaluability of our claims (*etc.*); it is necessary for us to know enough about our claims and whatever about which we make those claims to discover and thereby to determine their truth value, their accuracy or their use as approximations; and it is necessary (though not sufficient) to assessing the justification of our cognitive claims about those particulars.

78. Kant's Cognitive Semantics and Causal Knowledge

Kant's Thesis highlights a quintuple distinction we must consider in all claims to causal knowledge, between the following cognitive achievements:

1. causal *description*;
2. causal *ascription*, *i.e.*, causal predication (of F to x). (Where ' F ' is a designated feature or characteristic, and ' x ' is some localised particular.)
3. (approximately) true causal ascription;
4. *cognitively* justified causal ascription = reasonable belief, conjecture, surmise;
5. *sufficiently* cognitively justified causal ascription = causal knowledge.

As important as theories of linguistic meaning or conceptual or mental content are for epistemology, this quintessential set of distinctions suffices to show that in principle they are not sufficient for epistemology. We need not consider here what kind or extent of justification is required for causal, explanatory knowledge (*cf.* above, §§66–73). It is a virtue of Kant's account that each of these distinct proto-cognitive achievements affords specification tailored to specific domains of empirical inquiry, whether commonsense, diagnostic, technical, forensic or natural-scientific.⁸

8. Experience indicates that many philosophers find in these considerations no more than 'gestures' at an argument or justification. Such readers must reconsider more closely: Such misunderstandings exhibit too much (Russellian *cum* Quinean) confidence in mere intension (predicates as classifications, explicated as mere descriptive phrases), whereas demonstrative (deictic) reference is *also* required to obtain even *candidate* cognitive claims. Speaking does not suffice to speak *about* any individual *thing* (or person, event, structure); thinking does not suffice to think *about* any individual *thing* (or person, event, structure). As Kant noted: merely speaking or thinking intelligibly (understandably) only requires avoiding self-contradiction, whereas cognition or *any claim* to knowledge requires localising the putatively known individual(s) within space and time, together

79. Freedom of Behaviour

Kant's cognitive semantics, just summarised, holds for empirical knowledge of spatio-temporal particulars. Kant develops the rudiments of a very different cognitive semantics for practical cognition. Kant's practical philosophy aims to provide grounds for assuming that certain ideas of reason, which we cannot know theoretically to hold of any particulars, can rightly and justifiably be referred to particular agents. These ideas include the idea of freedom. Near the end of the Dialectic of the *Critique of Practical Reason*, Kant notes that no intuitions are supplied to these ideas, so no theoretical knowledge is generated on their basis. However, Kant maintains:

The three ideas of speculative reason mentioned above are not themselves cognitions; nevertheless they are transcendent thoughts in which there is nothing impossible. Through an apodictic practical law, as necessary conditions of the possibility of that which this law requires to be made an object, they now acquire objective reality, *i.e.*, by this they are shown to have objects, although we cannot indicate how their concept refers to an object (*KdpV* 5:135.2–9)

Kant explicitly states that practical reason is able, through the arguments set out in the *Critique of Practical Reason*, to give 'objective reality' to the idea of freedom, even without corresponding sensory intuitions. By appeal to the principle that what we ought to do, we can do, Kant argues that whatever is required to do what we ought must obtain. Specifically, he argues in this way that we must be free agents. In this way, what must from the theoretical perspective be regarded as merely a *Gedankending*, a merely 'problematic concept',⁹ is shown from the practical perspective to be a genuine thought with legitimate possible reference to actual agents. Earlier in the *Critique of Practical Reason* Kant states this

with some approximately correct attribution of characteristics to it or to them (B *xxvi*, *n.*; A263–4/B319–20). Quine's stock example of a determinate referring expression, 'the shortest spy', fails as a definite description because the shortest spies might be twins or triplets, identical in stature and profession, yet distinct agents all the same. Specificity of intension alone cannot suffice for unique reference to any specific spatio-temporal particular (or its feature). 'Ontological commitment' may tell us something about theories, but in principle it is insufficient to refer to any specific spatio-temporal particulars; the 'theory' may literally have *no* domain of application. This is only obscure to those who are focussed single-mindedly on intension and on first-order predicate calculus, to the utter neglect of any use of those merely formal resources in any real, actual, non-formal domain, such as nature or everyday life. Coherent talk is fine, but *realising* anything said also requires deictic (demonstrative) reference. This Kant learnt from Tetens; he could have learned it from the Stoics (as Hegel did). Only in referential contexts can anyone advance from uttering sentences to making any statement or claim (*cf.* below, §89.1.)

9. A concept is 'problematic' if no theoretical grounds can be given to determine whether an object corresponds to it (*KdrV* A254–5, 286–8, 771–2/B301–1, 342–4, 799–800).

directly, and in direct connection with freedom (our sole concern here),¹⁰ regarded as ‘an empirically unconditioned causality’:

Now the concept of an empirically unconditioned causality is indeed theoretically empty (lacking any relevant intuition), although it is never the less possible and refers to an undetermined object; in contrast, however, in the moral law, and hence in a practical connection, that concept is given significance (*Bedeutung*); thus I have no intuition which would determine its objective theoretical reality, but nevertheless it has an actual application, which can be exhibited (*angegeben*) *in concreto* in [agents’] characters (*Gesinnungen*) or maxims; that is, its practical reality can be pointed out (*darstellen*), which accordingly is sufficient to justify it even in regard to noumena. (*KdpV* 5:56.18–27)¹¹

These passages are unequivocal, and show the central importance of Kant’s moral theory to his semantics of cognitive reference. Here (and here alone) I say ‘cognitive’ reference in this connection because Kant speaks in this connection of ‘practical knowledge’.¹²

The arguments of the *Critique of Practical Reason*, if successful, give objective reality (*i.e.*, possible legitimate reference) to the idea of freedom. How do we get from the legitimate possible reference of the concept of freedom to unspecified agents, to referring our concept of freedom to particular free agents? In both the *Critique of Pure Reason* and in the *Critique of Judgment* Kant argues by abduction. The Critical philosophy justifies the general principles required for this abductive inference, so when we observe behaviour which *cannot* explained by natural causality, but which can *only* be understood as resulting from

10. Kant contends that immortality and the existence of God are required for the possibility of our acting on our (purported) duty to achieve the highest good. Kant’s argument neglects the more plausible though weaker duty, to achieve the highest good (only) so far as we are humanly able.
11. For discussion of Kant’s theory of character (*Gesinnung*), see Allison (1990, 136–45), who treats ‘character’ as constitutive, whereas it is quite clearly a regulative construct; it may *be* constitutive, but for reasons summarised above, we are barred from justifying any such determinate (causal) judgments.
12. Note conversely, that were Kant saddled with the view that freedom was a mere fiction, we would be required on practical grounds to think of something as actual that we knew on theoretical grounds not to exist. This would directly contradict his assertion in the previous passage that the thought of freedom, theoretically transcendent though it is, contains nothing impossible. This is why freedom is a theoretically problematic concept, rather than a demonstrably vacuous one. (Mathematical knowledge also involves reference to determinate objects, though this is a third kind of semantic and cognitive reference secured (according to Kant) by constructing those objects within the formal intuitions of time or of space.)

intentional purposiveness (because it is intelligently goal-directed), we are entitled to ascribe sensibility, understanding and reason to that agent (A346/B404–5).¹³ Consider first Kant's statement of this argument in the Dialectic of the *Critique of Pure Reason*:¹⁴

The human being is one of the appearances of the sensory world and to that extent also a natural cause, whose causality must stand under empirical laws. As such a cause he must accordingly also have an empirical character, just as all other natural things. We observe the same through forces and capacities which he expresses in his effects. In the case of lifeless or merely animally vivified nature we find no ground to think of any other capacity than is merely sensorily conditioned. However the human being, who otherwise knows the whole of nature only through his senses, knows himself also through mere apperception and indeed in actions and inner determinations, which he cannot at all ascribe to sensory impressions, and to himself he is admittedly part phenomenon, but also in part, namely in regard to certain capacities, he is a merely intelligible object (*Gegenstand*), because his actions cannot be ascribed to sensory receptivity. We call these capacities understanding and reason, especially the latter quite rightly and above all is distinguished from all empirically conditioned forces, for it considers its objects merely according to ideas and then determines the understanding, which then makes empirical use of its (indeed likewise pure) concepts. (*KdV* A546–7/B574–5, 3:370.33–371.14)

This line of reasoning is developed further in Kant's General Remark to Teleology:

If I determine the causality of the human being in regard to certain products which can only be explained through intentional purposiveness, so that I think of him as having understanding; then I do not need to stop there, but can ascribe to him this predicate as a well-known property of his and thereby know him. For I know that intuitions are given to a human being's senses, which are brought by the understanding under concepts and thus under a rule; that this concept only contains the common mark (with omission of the particular) and thus is discursive; that the rules by which representations are brought under a consciousness as such, are given by him prior to

13. This passage is quoted and discussed by Kitcher (2013, 71); her discussion corroborates the present point.

14. Specifically, from Kant's 'Exposition of the Cosmological Idea of Freedom in Connection with Universal Natural Necessity'.

those intuitions, *etc.*: thus I ascribe this property to the human being as one through which I *know* (*erkenne*) him. (*KdU* 5:484.7–19)

Kant's abduction is both fascinating and instructive. More explicitly in the latter passage, Kant's abduction underscores that each of us has our own sensory apparatus and understanding. They are of the same kind, but are distinctly instantiated in each of us (A363; *cf.* Paton 1936, 1:451–3). Consequently, we cannot and do not share experiences, nor (*sub specie* transcendental idealism) do we share spatio-temporal objects or events. Were there no noumenal grounds for phenomenal appearances to each of us, there would be no basis within Kant's ontology for first- and third-person experiences of the same human body. (Here I speak in view of Kant's transcendental idealism, because it appears in these two passages.) Since Kant analyses empirical objects in phenomenal terms, there must be a noumenal basis for these phenomena if we are to share a world at all.¹⁵ Kant holds that in both cases, in cases of mere empirical things and in cases of free agents, a supersensible ground is responsible for the sensory appearances we experience (A358–9). Sometimes experience warrants believing that some supersensible grounds are more complex and morally significant than others, because some of them are spontaneous intelligent causes of their intentional behaviour.¹⁶

In the second passage Kant calls our human understanding a 'well known property' in the same way he assures his readers in the first edition Preface that the *Critique of Pure Reason* requires no extensive research because we meet with reason and its pure thinking first-hand in one's own person (*Axi*); in this same way the first passage recalls that we each know ourselves apperceptively. In contrast to the *Critique of Pure Reason*, however, in the *Critique of Judgment* Kant countenances the prospect that, though we must attempt causal explanations of all spatio-temporal phenomena, we may not always succeed, especially in the case of organic life (*KdU* §70, 5:387). Yet the second passage expressly distinguishes the intentional purposiveness of human action from organic, and specifically from animal life as such. Precisely when we can understand behaviour only through intentional purposiveness, we are justified in our practical knowledge that we are observing the behaviour of a rational agent. Modern ethology has taught us much more about the capacities of animals, and various of their instrumentally rational, collectively strategic

15. I do not say that Kant analyses empirical objects in *phenomenalist* terms; see *KTPR*, 36–67.

16. Allison (1990, 73–4) rightly points out (against Beck) that Kant's account of the noumenal ground of phenomena does not entail that every phenomenon is transcendently free; a noumenal ground is only a necessary, not a sufficient, condition of transcendental freedom. Transcendental freedom is only ascribed on the basis of actions that can be understood only through the causality of reason (*cf.* A545/B573).

and even proto-moral behaviours (de Waal 2006). These findings narrow the gap between human beings and animals by showing that they are closer to us (and that we owe more to our animality than we often suppose). Movement is relative, of course, but nothing in these scientific findings moves Kant's benchmark of intentional, rational purposiveness, nor counters his Critical grounds for our ascribing it to other people whom we observe executing intentional, rationally purposive actions.

80. Regulating Our Cognitive Commitments

The Principle of Sufficient Reason is justified by Kant as a constitutive principle to whatever (*a priori* indeterminable) extent is required for us to have apperceptive perceptual experience of our surroundings, whenever, wherever and for so long as we do. Beyond that extent, the Principle of Sufficient Reason plays a regulative role in guiding our causal inquiry into nature and into human affairs, whether collective or individual, and indeed, in making causal inquiry possible for us at all, whether commonsense, diagnostic, forensic, technical or scientific. If indeed our Categories are those Kant identified, I submit that they are, following Wolff (2009b), then we inevitably think about and attempt to judge whatever we observe in causal terms. Indeed, we must do so to achieve determinate theoretical knowledge of anything we observe. Hence the Thesis of Kant's Antinomy of Teleological Judgment states the explanatory maxim of empirical inquiry, namely:

All production of material things and their forms must be judged to be possible according to merely mechanical laws. (*KdU* §70, 5:387)

However, we must never succumb to the transcendental subreption involved in mistaking this maxim of causal inquiry for a justified assertoric thesis regarding all spatio-temporal events!¹⁷ Kant's 'must' in this statement is procedural; it is methodological. We must never mistake the *Principle of Sufficient Reason* for an unrestricted, universal, demonstrated (*i.e.*, cognitively fully and unrestrictedly justified) assertoric *law of causality*. In plainer language, we must never mistake a principle of causal inquiry for successful outcomes of such inquiry; we must never mistake a research programme for demonstrated results.

John Earman (1986, 245, 246–7) finds the debate about free will and determinism deeply unsatisfactory, though he insists that any satisfactory resolution of the problem must allow that a causal-explanatory science of individual human behaviour is possible. To the contrary, I submit

17. On transcendental subreption see A509, 582–3, 619–20, 643–4/B537, 610–11, 647–8, 671–2.

that this debate is deeply unsatisfactory because determinists simply *suppose*, without remotely adequate evidence or analysis, that science has already demonstrated that causal determinism holds of individual human actions (*e.g.*, Cashmore 2010, Caruso 2012).¹⁸ The problem is not that the problem of freedom and determinism has not been solved; the problem is that the problem has not yet been *joined*, indeed it has not yet been properly *stated*, because the key premiss, the thesis of universal causal determinism, is, in the domain of human behaviour, an unjustified supposition based on over-simplified, under-informed models (*cf.* Brems 2011) which have yet to be referred in any specific, determinate way to any of the causes which are (merely) supposed (by causal theorists) to sufficiently determine any and all human behaviour.¹⁹

Part of what tempts us into debating freedom *versus* determinism about human action is that as a matter of common sense, we manage with highly abbreviated, short-hand causal judgments and relations, sufficient for negotiating our immediate environs (most of the time). These rough and ready approximations of causal judgments are *indeterminate* (inspecific, even vague) enough that they appear to hold equally well for human behaviour, actions, deliberations, decisions *etc.* However, these commonsense approximate causal judgments are altogether insufficient to formulate, much less to justify, causally sufficient, *deterministic* explanations of any event or phenomenon, whether physical or moral (human). Mistaking the imprecision of our commonsense causal judgments thus leads many of us to succumb to the transcendental subreption of mistaking the causal principle *qua* maxim of causal inquiry (and guide to causal judgment) for a justified assertoric thesis regarding all spatio-temporal events. This oversight results inevitably from focussing upon propositions to the neglect of their use in judgment, and to the neglect of Kant's quintessential distinctions amongst candidate cognitive achievements (above, §78).

Consider again LaPlace's thought experiment about a causally omniscient intelligence and its putative bearing upon issues about human freedom

18. Both Cashmore and Caruso stress the time lag between certain neurophysiological events involved in executing decisions and self-conscious awareness of deciding, demonstrated by Benjamin Libet and others. Horgan (2011) rightly points out that these results do not rule out the relevance of intentions to decision and action, for only due to an experimental subject's standing intention to follow an experimenter's instructions does that person respond at all to experimental signals in prescribed ways. Radder & Meynen (2013) point out that Libet *et al* do not have sufficient empirical evidence for their very strong claims.
19. For discussion of specific examples from contemporary psychology and neurophysiology, and how they do not justify determinism about human action, see Horst (2011) and Falkenburg (2012), whose findings are undergirded by the present analysis. Philosophers bent on arguing about free agency whilst simply supposing determinism to be true risk returning to mere scholasticism.

of behaviour. It is one thing for philosophers to assume universal causal determinism for the sake of inquiry, analysis or argument about whether or to what extent there may be some kind of human freedom which is compossible with universal causal determinism. It is quite another to suppose, as some philosophers today assert, that the mere postulate, the mere *thought*, of LaPlace's causally omniscient intelligence justifies *a priori* strict universal causal determinism of all events within the entirety of space and time. That is a staggeringly unCritical speculation which is not, and cannot be, cognitively justified by empirical evidence (which is never so complete), nor by anyone's metaphysical predilection. That kind of *a priori* supposition merits Russell's (1919, 71) rebuke to Dedekind: 'The method of "postulating" what we want has many advantages; they are the same as the advantages of theft over honest toil'.

Whether in science, in philosophy or in everyday life, we must regulate our beliefs and our convictions according to our evidence, and to the kinds of evidence or proof possible for us within any domain of inquiry. Such regulation requires critical and self-critical assessment, *i.e.*: sound *judgment*. Classical mechanics is not deterministic; General Relativity is, though it does not pertain to the understanding or explanation of low-velocity human behaviour. Contemporary philosophical 'naturalism', especially its causal, determinist, reductive or eliminative strands within philosophy of mind or action, owe far more to the materialism of Hobbes, d'Holbach and de la Mettrie than to anything in contemporary science. I return to these points below (§§85–88).

12 Kant's Two Models of Human Actions

81. Introduction

Kant's views on human freedom, action and the causal course of nature, including our embodied human nature, have received extensive critical attention. Kant assumed that natural events, each and all of them, have sufficient external causes, and sought to show that this (purported) natural causal determinism obviates neither morality nor free, morally imputable human actions. Reconciling both views requires Kant's transcendental idealism. Whether transcendental idealism succeeds in this regard is long debated; here I set it aside (having scrutinised it in *KTPR*). Critical discussion of Kant's accounts of freedom and natural determinism have addressed these issues in the wholesale terms in which Kant posed them in the Third Antinomy, according to which either there is only natural causal determinism and no freedom of human action at all; or there can be free human action, natural causal determinism notwithstanding. Here I highlight a different issue within Kant's analysis of human action, that he provides two distinct models for understanding any specific human action. Why so? To what ends?

82. What Is Free Action, According to Kant?

The Antithesis of the Third Antinomy premises that

. . . there is freedom, understood transcendently, as a specific kind of causality, . . . namely a capacity absolutely (*schlechtin*) to initiate a condition, hence also a series of its consequences; this spontaneity not only produces such a series, the determination of this spontaneity itself to produce this series begins absolutely, so that nothing precedes by which this occurrent action is determined according to standing laws. (*KdrV* A445/B473)

Allison (1990, 5–6, 39–40) identified what he calls Kant's 'Incorporation Thesis', that no inclination becomes any agent's motive (*Triebfeder*)

unless and until it is incorporated by that agent into her or his maxim of action. Allison finds this view expressed in a footnote to Kant's *Religion* (6:24n.). McCarty (2009, 73) countered that a footnote in the *Religion* is an odd place to state such a portentous doctrine. Kant's footnote, however, is no isolated instance. In distinguishing between mere affect and passion, as a persisting inclination towards an affect, Kant notes that developing such a passion involves, in part, brooding upon the affect involved, reflecting upon it and making it into a principle; only then can it genuinely count as a vice. In this connection, Kant states a specific example of the Incorporation Thesis:

The calm with which the affect is considered affords reflection and allows the mind to make a principle about it, . . . and to brood upon it, to root it deeply and thus deliberately to incorporate evil into one's maxim, which is thus a *qualified* evil, i.e. a genuine *vice*. (TL Einl. §xv; 6:408)¹

The point at issue concerns what Kant calls the 'ground of determination' or *Bestimmungsgrund* of an agent's decision regarding how to act. Running through Kant's 'Analytic' of the *Critique of Practical Reason* is the key issue of whether an agent takes any *object* or *aim* to be the ground determining (*i.e.*, specifying) how s/he shall act, or whether instead the agent takes the moral law itself to be the ground determining (specifying) how s/he shall act. Kant is especially emphatic about this issue and his analysis of it in his third chapter, 'Of the incentives (*Triebfeder*) of pure practical reason'. Kant's Incorporation Thesis *is* his theory of rational judgment applied to the case of deciding how and why to act; it was not left merely to a footnote in the *Religion*, even if Allison may first have noted it there.

Recently Greenberg has sought to improve upon Allison's account by trying to show that, and how, Kant can and does construe the moral law as a *causal* law, a puzzling claim Allison noted but set aside (Greenberg 2016, xvii+n.5). Greenberg proposes (in brief) to show that, and how, in electing to act upon one's moral duty, the moral law itself is a *causal* law by which dutiful action is produced; a striking thesis! Greenberg is a subtle and capable scholar; his thesis and its articulation, attribution and defence merit and reward careful study, though not here. One central point of Greenberg's (2016, §3.2) account is to show that specific,

1. "Die Ruhe, mit der ihr [der Affect] nachgegangen wird, läßt Überlegung zu und verstatet dem Gemüth sich darüber Grundsätze zu machen und so, wenn die Neigung auf das Gesetzwidrige fällt, über sie zu brüten, sie tief zu wurzeln und das Böse dadurch (als vorsätzlich) in seine Maxime aufzunehmen; welches alsdann ein qualificirtes Böse, d.i. ein wahres Laster, ist" (underscoring added).

empirical determinations (*i.e.*, specifications) of the will are not limited to inclinations; also included are what Kant calls ‘incentives’ (*Triebfeder*; *KprV* ch. 3), and these include intellectual incentives originating in pure practical reason. Greenberg concludes:

Since everyone has pure practical reason, everyone has in a given situation subject to moral judgment the incentive to do what is moral for its own sake – that is, do it for the sake of duty. So, . . . amongst [the ‘subjective conditions’ which ‘constitute’ an agent’s will (*KprV* 5:20–1)], . . . there is always the incentive to do what is morally necessary for its own sake, . . . for this incentive to be the one . . . contained in the maxim on which she *acts*, is for her to *choose* that maxim! (Greenberg 2016, 117)

Thus on Greenberg’s account, too, Kant’s causal theory of action is all, so to speak, ‘downstream’ from an agent’s decision to act as morality requires, because morality so requires. This matches Kant’s specification of the transcendental sense of freedom, quoted above. Greenberg is correct that Kant holds that the concept of duty itself can be made one’s incentive or motive (*Triebfeder*; *MdS* 6:376, *cf.* 225); this is what Kant calls (both in *Groundwork* and in *Critique of Practical Reason*) our ‘respect’ (*Achtung*) for the moral law. Because any such decision is some form of an affirmative judgment about how to act, by which the agent elects (chooses and adopts) the principle *and* the incentive or motive of her or his action, Greenberg’s account accords with Allison’s statement of Kant’s Incorporation Thesis. This interpretive concord is welcome, yet underscores the remaining puzzle I seek to address.

83. Practical Judgments, Incentives and Influences

The puzzle appears to be this: If the human will consists in judging how and for what reasons, ends or incentives (motives) to act, and only in and by that judgment adopting any principles, reasons, aims, ends, maxims, incentives and ways or means to act, is not any and every human action free? If the Incorporation Thesis is true, why does Kant continue to speak of affects or passions or other psychological states having ‘influence’ upon our decisions, volitions or actions? This is now a distinct question, not about human action as such (wholesale), but about any, perhaps every, specific human action: To what extent, or in what regard(s) is each action free? To what extent, or in what regard(s) does each behaviour result (merely) from causal influences? We cannot simply say ‘both’, for Kant is quite clear about what, in principle, indicates rational behaviour: Precisely when we observe an organism behaving purposively towards some aim or end, which behaviour *cannot* be explained by causal laws of nature, then we are entitled to ascribe understanding, reason and agency

to that actor (above, §79). This principle for interpreting behaviour is formulated from an observer's (second- or third-person) standpoint; below we shall find Kant's reason also to use this principle first-person. This principle guides judgments about specific behaviours, some or perhaps many of which may be actions of free (semi-)rational embodied agents. To focus on this pair of questions about any specific, individual human action or behaviour, I first review briefly several key points I have detailed and defended above, because Kant's 'changed method of thinking' is profoundly far-reaching, fundamental and so distinctive to much contemporary philosophy and habits of thought.

Kant's Critique of rational judgment and justification throughout the Critical corpus underscores his crucial observation that principles *guide* judgment; they neither unilaterally nor fully *specify* any justifiable or justified judgment (A130–6/B169–75).² The guiding role of principles in judgment cannot be eliminated by adding further rules of application, for these rules too require judgment for their proper use. Kant's point is the converse of Waismann's (1945) about the 'open texture' or 'porosity' of all empirical concepts, none of which is so specific, fixed or sufficient that it is immune to revision by unexpected, unexpectedly relevant experiences (above, §8). This concurrence should be unsurprising: It reflects Kant's counterpart view regarding concepts (classifications, intensions) that there are and can be no *infimae species* (A655–6, 661/B683–4, 689), no lowest possible sub-division of any genera (classification, intension). It also reflects Kant's insight that, in any non-formal, substantive domain (excepting mathematics), we cannot analyse concepts so as to provide their necessary and sufficient conditions of correct use, nor their exact content (intension). Instead, we must *explicate* our concepts in use, including any *a priori* concepts or principles, to achieve sufficient clarity and specificity for our philosophical purposes, where the adequacy or sufficiency of any conceptual explication can only be assessed (*i.e.*: judged!) within actual contexts of its possible (appropriate) use, not in mere logically possible contexts of its imaginary use (A727–30/B755–8).

Furthermore, rational judgment is inherently *normative*, insofar as it contrasts to mere response to circumstances by forming or revising beliefs, because judgment involves considering whether, how or to what extent the considerations one now draws together in forming and considering any specific judgment (conclusion) are integrated as they *ought* to be integrated to form a cogent, accurate, justifiable judgment (A261–3/B317–9, B219; *KdU* int., 5:182.26–32). Third, rational judgment is in these same regards inherently *self-critical*: judging some circumstance(s)

2. McCarty (2009) is but one example of this unfortunate trend. His neglect of Kant's theory of judgment scuttles his purported proof that there is 'no adequate free-choice solution to the problem of justification and explanation' (2009, 92).

or consideration(s) involves and requires assessing whether or the extent to which one assesses those circumstances or considerations as they *ought best* be assessed (A261–3/B317–9, B219). Fourth, rational judgment is inherently *social* and *communicable* (*KdU* §40), insofar as judging some circumstances or considerations rationally involves acknowledging the distinction in principle between merely convincing oneself that one has judged properly, and actually judging properly by properly assessing the matter(s) and relevant considerations at hand. Fifth, recognising one's own *fallibility*, one's own potentially incomplete information or analysis and one's own theoretical or practical predilections requires that we each check our own judgments, first, by determining as well as we can whether the grounds and considerations integrated in any judgment we pass are such that they *can* be communicated to all others, who *can* assess our grounds and judgment, so as also to find them adequate (A829/B857, *Anth.* §2); and second, actually to *communicate* our judgments and considerations to others, to seek and consider their assessment of our judgments and considerations (*Anth.* §2; DO 8:145–7).

Outside formal logic and mathematics, Kant thus argues (cogently) for fallibilism about rational justification. This fallibilism and the contextual assessment of judgments and of concepts or principles in actual use are both supported by a key semantic (referential) point he adopted and adapted from Tetens (1775), that any concept or principle can only be shown to have a legitimate cognitive use by demonstrating, indicating, ostensibly localising, at least one relevant *instance* of that concept or principle. This condition must be met also by Kant's *a priori* categories and principles. This we can do, Kant argues (in the Transcendental Aesthetic + Paralogisms of Pure Reason), only in referential connection (*Beziehung*) to spatio-temporal particulars, of whatever kind or scale.

Regarding our causal concepts and principles, specified in the 'Analogies of Experience', Guyer (1987) demonstrated that Kant's three principles governing our causal judgments (*i.e.*, that substance persists through changes of its states, that changes of state of any one substance are causally regular, and that any causal action is causal interaction), are mutually interdependent; none can be used without conjoint use of all three causal principles because any causal judgment we can make is *discriminatory*; each requires that we can identify both persisting perceptible substances distinct to ourselves and to one another, each of which exhibits some plurality of features (some of which may alter presently), each of which exhibits sufficient causal (substantial) integrity so that we *can* discriminate and identify it at all, where only by recognising some plurality of physical objects and events can we even approximately locate any of them within time and space, and distinguish between them and our perceptual experience of them, *as* we are perceiving them (above, §§56–59).

The conjoint implication of the three 'Analogies of Experience' and the 'Paralogisms of Rational Psychology' (in either edition) is that we *cannot*

make any legitimate, justifiable causal judgments about internal, psychological, merely temporal states or occurrences. In principle, ‘psychological causality’ is a cognitively empty class, according to Kant’s *Critique of Pure Reason*, an implication he ratifies in the Preface to the *Metaphysical Foundations of Natural Science* (4:471; *KTPR*§60). Accordingly, we must be *agnostic* about causality within the psychological domain. This also entails we cannot *know* (empirically) that psychological phenomena are *not* causally structured. Conversely, neither do we have sufficient empirical basis to affirm Kant’s theory of rational judgment, including the Incorporation Thesis, is in fact TRUE of human decision making.

Kant’s point may be illustrated by our utter lack of any such observational instrument as what we might call a ‘psychoscope’, by which to identify any (purported) psychological cause or effect. Neither is any such instrument in the offing: Even if brain scans develop radically beyond current technology (as we may expect), it is one achievement to identify some specific neuronal activity playing some specific, determinate role within some person’s behavioural architecture and (current) processes or functioning; it is quite another achievement to identify any neuronal activity with *semantic* content or structure, such that it can *be* a semantically significant component of any thought, judgment, feeling or decision: Identifying the formal reality of any cognitively significant neuronal structure or process does not suffice to identify its representational (including semantic) content (its ‘objective reality’, in Descartes’ sense), whether in practice or in principle. Optimism (or pessimism) to the contrary rests on woefully flawed models of matter, mindedness and semantic content (*per* below, §§85–90). These issues are complex because neuroscience concerns process, where as judgment concerns validity, which neuroscientists require to establish any of their scientific findings about neurological process. The issues pertaining to Kant’s ‘subjective’ and ‘objective’ deductions cross vexatiously in this domain.

Here is a prime case in point of Kant’s Critical methodology regarding issues for which neither the thesis nor the antithesis can be justified or known to be true, neither those about psychological causality, nor those about any psychological truth of Kant’s own theory of rational judgment + Incorporation Thesis regarding human decision-making, even at its most careful, reflective and hence presumptively rational. One key point of Kant’s Canon of rational judgment in the Transcendental Dialectic and in the Doctrine of Method is that we are entitled to use disjunctive syllogism and indirect proof *only* in referential connection to the relevant particulars, whether these be individuals or features (of whatever kind or scale) (A789–97/B817–25, *cf.* A565–7, 583–4, 714–5, 718–21, 782–6/B593–5, 611–2, 742–3, 746–9, 810–4). Such individual states of mind we cannot identify or credibly (constitutively, attributively) judge causally, because we cannot identify the relevant subjunctive conditionals required for causal discrimination of any such particulars. Perhaps within formal

semantics one might insist that ‘It’s got to be one or the other’ (the principle of bivalence again), but in any *cognitive* context regarding any synthetic *a posteriori* claim or judgment, one must first *localise* and *identify* the relevant particular (‘it’) within space and time, in order for one’s putative claim or judgment even to *have* an ascertainable truth value, or value as an approximation.³ Such referential designation by localisation is also required for one’s claim or judgment to have *any* cognitive justification whatsoever. Both achievements are required to have even a *candidate* cognitive claim or judgment (above §§20.1, 26). As in the mistaken attempts to prove *a priori* that matter either is, or is not, infinitely divisible, the mistaken attempts to prove *a priori* that human behaviour *must* be either causally determined or free, fail to justify either thesis because the very *res* at issue cannot be localised so as to assess and judge it properly. It may very well be that neither of these bivalent predicates (free/caused) can be used to state an accurate, informed and informative judgment about human action.

In circumstances where we cannot localise and identify the relevant particular (of whatever kind or scale), Kant’s Critical philosophy aims to specify how we are entitled or perhaps obligated to consider, to think about, or to judge the issues or phenomena in question. This is exactly Kant’s point, cited above, about our attributing understanding and reason to any organism which exhibits intelligent, purposive (goal-oriented) behaviour which *cannot* be explained by causal laws of nature (*KdU* 5:484.7–19; cf. A546–7/B574–5, 3:370.33–371.14).

Kant’s appeal to observing an organism’s behaviour which cannot be explained by causal laws of nature is inconsistent with his repeated affirmation of universal causal determinism within spatio-temporal nature. That affirmation, however, is not justified by any Critical analysis or argument(s) in the *Kritik der reinen Vernunft* (KTRV §61), nor within physical science (Lighthill 1986, Harper 2007). To the contrary, the general *principle* of causality, that each event has some external sufficient cause(s), is a regulative principle of causal inquiry, judgment and explanation. By Kant’s transcendental analysis in the *Critique of Pure Reason*, we must be able to identify at least some perceptible, causally active and interacting physical particulars and events, in order for us to be self-consciously aware of ourselves as perceiving (some of) those particulars. How extensive is the causal structure of nature, and how much of that extent we can ascertain, must be discovered by empirical research (of whatever sorts). Furthermore, we only obtain causal *knowledge* by developing sufficient, exclusively causal explanation of some specified

3. This is indeed an instance of Kant’s reasons for distinguishing (prospective) cognitive significance of the infinite negative judgment from affirmative judgments, and for not treating negation truth-functionally (A71–3/B97–8; cf. Wolff 2017)

event, or class of events. Causal determinism requires a causally closed system, and a surprisingly narrow range of initial conditions. The idea that, somehow or other, human behaviour *must be* causally structured is a principle of scientific inquiry; it is *not* an assertoric, ascertained, justified proposition (finding)! The whole debate about freedom *versus* determinism about human behaviour is predicated upon an unjustified and cognitively unjustifiable expostulation: *i.e.*, upon a cognitively transcendent, merely ‘metaphysical’ assumption (above, §§75–80). Kant is indeed entitled to his hermeneutic principle for ascribing understanding and reason to organisms which behave purposively in ways which cannot be explained by causal laws of nature (above, §79).

Because we cannot identify specific psychological (or psychoneurological) causes, effects or relations, we are not justified in ascribing *constitutive* status to our causal locutions within psychology. In this domain we can only use causal locutions casually, informally, when discussing human behaviour, whether our own or others. Causal terms are well nigh unavoidable: We cannot avoid using our basic categories when discussing or thinking about anything! We can, however, be careful and Critical about when and how we use concepts informally or heuristically, and when we are justified in using them *constitutively*, as accurately indicating and properly classifying objective features of whatever particulars are genuinely *known* to have those features.⁴

Consequently, Kant’s accounts of causal judgment and of the recognition and attribution of intelligent behaviour provide counterparts to Aristotle’s (*EN III*) informal distinctions between those actions performed voluntarily for appropriate reasons, those performed voluntarily though under duress, and those performed involuntarily due to (*e.g.*) passions overcoming reason and choice. Additionally, Kant’s accounts allow for clinical determination (specification) of varieties of psychological inevitabilities or impairments, such as those due to trauma or psychopathology. Such determinations (diagnoses) require clinical expertise, though Alice Miller (1983, 1984) has developed a sophisticated yet exoteric model and method for use by adults responsible for others’ behaviour, *e.g.*, school officials, medical doctors, truancy officers or police, who can use her method to determine whether proper clinical evaluation of an individual is advisable.

Regarding human action and decision-making, both of Kant’s models of human action or behaviour thus remain germane: Which may be most appropriate in connection with which persons, of what age or maturity, or regarding which actions or decisions, we must consider carefully in each and every important case, to determine (specify) as well as we can the extent to which, or the regard(s) in which an action is free and

4. These crucial Critical considerations are altogether neglected, *e.g.*, by McCarty (2009).

responsible, or also the extent to which, or the regard(s) in which that behaviour results (merely) from causal influences, whether organic or social (e.g., trauma). This corroborates Kant's claim that our human will is an *arbitrium sensitivum liberum* (A534/B562), insofar as our power of choice *can* be affected by psychological causes ('pathological' in the sense of *pathé*, states we undergo or 'suffer'), though it is not (exclusively) determined by them, insofar as we have the capacity to decide how to act for justifying reasons or according to principles (*Gr* 4:412).

The potential relevance of both of Kant's models of human agency, decision, action or (mere) behaviour illuminates Kant's remarks about our 'empirical' and 'noumenal' moral characters (*Gesinnungen*). Whether first-, second- or third-person, we can assess by estimating a person's moral character as it is apparently exhibited in his or her actions over some period of time. Such assessments or estimates are surmises, developed by projecting a presumptive order of someone's moral nature (character, *Gesinnung*) as a persisting, characteristic ground of her or his reactions, responses, judgments and actions. This is a *regulative* endeavour, analogous to our 'projecting the order of nature' in natural science (Kitcher 1986). Sufficiently clear and consistent patterns in a person's behaviour may suffice to conjecture about his or her intelligible character, *i.e.*, regarding whether s/he has firmly committed her- or himself to granting to morality the priority it deserves over all other considerations, or not. Because human beings require nurture, upbringing, education and 'training to autonomy' (Herman 2007, 130–53; *cf.* Westphal 2016b), we can and should expect to use Kant's two models of human decision and action differently, or to different extents, at various stages of a person's moral development, whilst not disregarding how morally sensitive or acute innocent children can be, at least on occasion.

84. Conclusions

Not only in pathological (clinical) cases must we consider whether or the extent to which people decide how to behave on the basis of adequate justifying reasons. Kant is well aware of how easily people can behave as 'logical egoists', by considering only their own judgment and disregarding the judgments of any and all others (*Anth.* §2). He is acutely aware of how such logical egoism threatens and undermines any respect for or consideration of justifying reasons, or of rational justification as such (DO, *GS* 8:145–7). In assessing others' reasons, statements, actions and achievements to determine (*i.e.* to specify) as well as we can whether their reasons are permissible, relevant or sufficiently justificatory, or whether individuals or groups act in impermissible or unjust ways, whether by speaking or by doing, we are obligated to consider justification first, and apparent interests second, and we are obligated always to consider whether or to what extent our own assessments are credibly justified, or

may instead issue from our own interests, whether innocently or culpably (*cf.* A829–30/B857–8). Critical scrutiny of human behaviour, including our verbal behaviour and our purported commonsense psychological diagnostics of those with whom we deeply disagree, must and can only begin first-person. Reason is not only our sole touchstone of truth, as Kant said (DO, GS 8:146*n.*); it is also our sole touchstone of rational justification. Consequently, both morals and epistemology must consider judgment first!

13 Mind, Language and Behaviour

Kant's Critical Cautions *Contra* Contemporary Internalism and Naturalism

85. Introduction

Two main trends in contemporary philosophy of mind, language and action are 'naturalism' and 'internalism', or advocacy of 'narrow content', whether mental or semantic. Contemporary naturalists purport to offer causal theories of human mindedness, language or behaviour, including causal deterministic explanations of human action. Internalists or advocates of 'narrow content' presume they can know what they think, say or experience, regardless of whether any of it is true, veridical or contextual. Both trends exhibit how much of contemporary philosophy, both methodologically and substantively, remains decidedly and deficiently pre-Critical. Kant's Critical philosophy shows instead the alleged issues and problems have not been properly framed, because their key premises do not survive Critical scrutiny. This chapter thus extends the above findings about Kant's revolutionary methods and views to several further issues and domains.¹

Within the domain of human behaviour, the thesis of causal determinism is unjustified conjecture based on over-simplified, under-informed (pseudo-)explanatory models. To the contrary, we cannot justify any of the causal judgments allegedly asserted by causal theories, including deterministic theories, of the human mind or behaviour (whether linguistic or corporeal). Kant's semantics of singular cognitive reference (§§2.3, 26, 77) stands independently of his Transcendental idealism. It justifies distinguishing between: causal *description*, causal *ascription* (predication as attribution), (approximately) true causal ascription (sufficiently accurate predication), and cognitively justified causal ascription (reasonable true belief or knowledge) (§§26.3, 76). Contemporary causal theories of

1. I allude to Bird's (2006a) title. Some notes discuss specialist matters, which may be omitted if the reader prefers. These notes do pertain, however, to the central contrast drawn in this chapter, between what can be said or thought, and what can be justified for good reason(s), a contrast increasingly lost both to 'philosophy' and to 'history of philosophy'. I am aware of how heterodox are my views and analyses, and so reply to some likely as well as to some actual objections.

mind, action, meaning or language (whether determinist or not) do not suffice for causal ascription, and so cannot justify causal explanations of human mindedness or behaviour, nor any of the ‘causal theories’ currently touted by avowed philosophical naturalists. To recall, the *principle* of universal causal determinism is a regulative principle governing causal inquiry, and was so formulated by LaPlace. Only successful, *sufficient*, exclusively causal explanation of particular events or processes provides causal knowledge of those events or processes (whether as individuals or as specifically defined classes). Such knowledge we lack in the domain of human mindedness and behaviour. Rational belief, including scientific belief, requires apportioning belief to justifying evidence; all else is conjecture or speculation, which justify neither premises of proofs or explanations, nor reasonably justified beliefs. Causal theory (including causal determinism) about human mindedness or human behaviour remains unjustified speculation, for sound Critical reasons Kant provided.

Strong internalist views about thought, mental content, meaning, belief or experience escape those problems confronting their pseudo-causal competitors, almost by definition. And that is indeed their problem: The very definitions central to formulating strong internalist views of ‘narrow content’ are arbitrary constructs, and thus presuppose (wittingly or not) inadequate, demonstrably false Cartesian views about self-transparency, about conceptual, semantic or mental content and about cognitive justification.

In these regards: causal, conceptual and cognitive, much contemporary philosophical debate about the human mind, language and behaviour remains decidedly pre-Critical.² Examining these issues is revealing, both for our interpretation and understanding of Kant’s Critical philosophy, and for our interpretation and understanding of core issues in philosophy of mind, and related issues in philosophy of language and theory of action. One central lesson is that cogent philosophy must be systematic philosophy, and that systematic philosophy must also be historically informed, self-critical and multi-disciplinary philosophy. Establishing these results requires appeal to some central findings of Kant’s Critical philosophy, briefly reviewed in the next section.

86. Kant’s Key Critical Findings

86.1. A Recap

The preceding chapters have examined, reconstructed and defended several of Kant’s methodological and substantive findings. These include the

2. For a good conspectus of these discussions, see Quante (1998a, 1998b), Lenzen (1998); specifically on narrow content, see Brown (2011). Their overviews remain current, despite their dates of publication, in part due to the methodological issues examined here, which Quante, Lenzen and Brown do not consider, but *cf.* Keil (1993).

following, which are re-stated, with indication of the preceding sections most central to their explication and justification.

1. What Kant actually proves, demonstrates or justifies is sometimes more important than what he claims or claims to prove, demonstrate or justify.
2. Specifically *cognitive* reference requires locating putatively relevant particulars within space and time. (§§2.3, 26, 77)
3. Kant's account of specifically cognitive reference is not verificationist because it places no restrictions upon linguistic meaning or conceptual content (intension) beyond logical self-consistency.
4. Justifiable causal judgments require spatio-temporal discrimination and identification of causal relata; hence such judgments pertain only to spatio-temporal particulars. (§§52–57)
5. Infallibilism about cognitive justification is in principle *irrelevant* to all non-formal domains. (§§2.1, 11, 26, 58, 61)
6. In substantive (non-formal) domains, the method of conceptual analysis is in principle insufficient because the completeness of any 'analysis' cannot be justified without lapsing into uninformative stipulations or tautologies. Instead, we must explicate the key concepts sufficiently to make adequate sense of an issue, where adequacy must be assessed in actual contexts of possible appropriate use. (§§2.1, 15, 64.1, 80)
7. Any cognitively legitimate issues about freedom *versus* determinism concern either freedom of bodily behaviour, or specific cases of psychopathology. (§§79, 83)
8. Kant's transcendental justification of our causal judgments about perceptible, causally interacting substances in our surroundings does not justify causal determinism universally across the domain of spatio-temporal events. (§§46, 55, 76)
9. The Principle of Sufficient Reason, that every event has a sufficient cause or causes, is a regulative principle guiding causal inquiry, causal explanation and causal judgment; it is not, nor can it be, a principle *known* to hold constitutively of all events within space and time. (§46, 55, 76)

86.2. The Critical Distinctiveness of Epistemology

Kant's cognitive semantics undergirds the following set of distinctions relevant to all cognitive claims or judgments (§§26.3, 76). Here I state these distinctions in terms of causal claims (*etc.*), to facilitate the ensuing

discussion:

1. causal *description*;
2. causal *ascription*, *i.e.*, causal predication or attribution *to* localised, (deictically) indicated particulars;
3. approximately, sufficiently accurate or true causal ascription;
4. cognitively *justified* causal ascription;
5. *sufficiently* cognitively justified causal ascription.

Only the last class (5.) counts as causal knowledge. (What kinds or extent of cognitive justification suffice for knowledge need not be considered here.)³

In this regard, Kant's semantics of singular cognitive reference underscores the important distinction upon which Travis (2008, 2013), following Austin, rightly insists: Between using a description (however detailed) to explicate the linguistic meaning of a sentence or the content of a thought or judgment (intension), on the one hand; and using a description to explicate what some particular person, Sam, thought or said on some particular occasion in some particular circumstances. The former may prescind from designating those individuals about whom or which that person thought or spoke then and there; the latter must designate those individuals. Too many contemporary philosophers, especially philosophers of language and philosophers of mind, unwittingly follow Russell and Quine in neglecting this basic distinction, reflected in the distinction above between (1.) and (2.).⁴

86.3. *Kant's Analysis of the Autonomy of Our Power of Judgment Suffices to Justify Our Rational Freedom of Deliberation and Judgment, Regardless of the Causal Structure and Functioning of Our Neurophysiology*

Because rational judgment consists in the critical assessment of justifying grounds, principles, evidence and their best use in any specific judgment and its justification, rational judgment is normatively structured. This normative character of justificatory judgment can neither be reduced to,

3. See Harper (2011); *cf.* above, §§65–74. I risk the pleonasm some may find in 'cognitive justification', but others speak of other forms of justification with regard to beliefs or claims, so that the phrase 'cognitive justification' is no longer redundant.
4. No justified, and no justifiable, use of the term 'know', 'knowledge' or their cognates occurs in Russell (1911), (1913), within his own terms of analysis, in connection with 'knowledge by acquaintance' or 'knowledge by description'; see Westphal (2010); on Quine, see Westphal (2015a).

nor eliminated by, causal considerations. This holds equally for theoretical and for practical judgment and judgments (Westphal 2018a, §§2–3; 2020a, §§35–37). Kant's point regarding rationally justifiable judgment is that it requires being *able* to consider whether the various factors one now draws together within one's judgment (whether as a candidate judgment or as an affirmation), are drawn together as they *ought* to be integrated to form the most appropriate, most accurate, best justified judgment now possible (B219, A261–3/B317–9).

Kant's insight into the insufficiency of causal theories of reference was established by Melnick (1989); it is supported by three important semantic points made by Dretske's information-theoretic epistemology:

1. Causal relations are neither necessary nor sufficient for information relations. (*KFI* 30–9)
2. Information relations are necessary for any specifically *semantic* content (intension), and hence also for linguistic meaning or conceptual content. (*KFI* 214–30)
3. Information relations are necessary though not sufficient for representations or for relations of representation, whether sensory or conceptual. (*KFI* 153–230; *NM*)⁵

These points stand, regardless of the (in)adequacy of Dretske's account of the information decoding required for belief or knowledge (*KFI* 57, 144, 219),⁶ and regardless of the shortcomings of his attempt to naturalise the mind.⁷ Dretske's analysis of information channels, and of our sensory systems as information channels, joins neatly with Kant's account of rational judgment, which provides a superior account of the information decoding involved in belief and knowledge.⁸

5. This point is developed gradually in Dretske (*NM*); it concerns the relations between 'natural' and 'functional' meaning, and how representational systems must function in order to be capable of misrepresentation.

6. For concise discussion, see Westphal (2003a), §§26, 27.

7. The shortcomings of his analyses of these points pale, however, when compared to the all too convenient assimilation of his information theoretic epistemology to a generic causal-reliability 'theory', which has become as frequent as it is uninformed and mistaken. In brief, Dretske (*KFI*, 171–231) sought to analyse conceptual content solely in terms of referential opacity, and the conceptual 'decoding' of sensory or perceptual information solely in terms of (somehow achieving) relevant opacity. Opacity, however, is only one aspect of conceptual content; as Carnap (1931, 91; 1956, 49–52) noted, inferential articulation is also constitutive of conceptual content. Sellars capitalised on Carnap's point, and augmented it by noting that understanding which possible inferences are, in any circumstance, also appropriate for further thought or action, is also constitutive of conceptual content and our understanding of it; see Williams (2013), 67–71; Westphal (2015a), §§4.13, 6.3, 6.4.

8. In part this is because Kant and Dretske both espouse 'sensationalism' about sensations, the view that sensations typically are components of acts of awareness of particulars, but only rarely are sensations themselves objects of our self-conscious awareness.

87. Causal ‘Theories’ and Causal Knowledge

In contemporary analytic philosophy, ‘causal theories’ are widely popular in philosophy of mind, in philosophy of language and in action theory. Most of these views are very long on promises but short on promise, because their causal descriptions are so vague they do not suffice even for causal *ascription* (attribution), and because they characteristically fail to localise in any actual instance the causes they allege to occur. Indeed, they characteristically fail to indicate even *how* to locate the (kinds of) causes they postulate in any actual instance or in any (remotely) adequate detail. Hence they fail to make any determinate *predication* (attribution), and so fail even to be *candidate* cognitive claims (*per* above, §86.2).⁹ Hence they are not causal ‘theories’; they are not even causal theory-sketches. Consider more closely why so.

87.1. Davidson

In connection with the explanation of human actions, Davidson was frank:

Unavoidable mention of causality is a cloak for ignorance; we must appeal to the notion of cause when we lack detailed and accurate laws. In the analysis of action, mention of causality takes up some of the slack between analysis and science. (Davidson 1980, 80)

In general, . . . appeal to causal powers and dispositions reveals ignorance of detailed explanatory mechanisms and structures. (Davidson 2004, 98)

Davidson’s concessions are important, though insufficient: merely *speaking* causally is far too casual to take up any cognitive ‘slack’ whatever! Kant’s distinctions between description, ascription, accurate ascription and cognitively justified empirical judgment highlight just how enormous is the cognitive ‘slack’ between the presumptive descriptions provided by contemporary causal ‘theories’ of the mind, language or behaviour and any actual causal explanation. Not only our old ideas about the mind are too vapid to be wrong, as Steven Pinker (1997, *ix*) observed. This doesn’t prevent today’s ‘naturalistic’ philosophers from rushing in, but it is striking how very far such discussions have swung in their causal-explanatory optimism from a preceding generation of scientifically minded philosophers who were so very preoccupied by Hume’s problem of induction and his causal scepticism.¹⁰

These problems pertain not only to our interpretation, understanding and analysis of the life of the mind, they have also infiltrated our interpretation, understanding and assessment of Kant’s views. Consider two examples briefly. These examples claim to be studies of Kant’s views, but

9. Prinz (2002), (2005), (2010) is a striking case in point; see below, §88.

10. E.g., McCarty (2009), Prinz (2005); *cf.* herein, §§82, 86.3, 88.

they illustrate the shortcomings of much current research on psychological causality and action ‘theory’.

87.2. *Burkholder*

Burkholder (1974) purports to show that the principle of determinism is synthetic *a priori*. His main consideration is this:

... it seems to me that we could always ask the question of why it is that the regulative employment of the determinist principle is either fruitful or indispensable. And I think that the only answer that could be gotten would be that it is so because it happens to be true that the determinist principle is a constitutive principle of objective experience. (Burkholder 1974, 145)

What ‘seems’ to Burkholder to be the case is a splendid example of what Kant classified and criticised as ‘transcendental subreption’ (B647, 761), of mistaking transcendental conditions of the possibility of apperceptive human experience and knowledge for ontological conditions constitutive of spatio-temporal objects as such. Valiant though it be, Burkholder’s is a particularly unfortunate attempt to try to wrest stronger conclusions out of Kant’s text, arguments and related considerations than they can possibly justify, because they do not aim to justify such claims, and certainly not by mere conceptual analysis.

Burkholder (1974, 140) claims that it is ‘possible to conceive grass without conceiving chlorophyll’ although ‘it is not possible to conceive grass-without-chlorophyll’. Burkholder’s claims about what it is, or is not ‘possible to conceive’ neglect Kant’s distinction between conceptual analysis and conceptual explication (B755–8), and its significant methodological and substantive implications (*cf.* Carnap 1950a, 1–18). To the extent that Burkholder is correct, that ‘it is not possible to conceive grass-without-chlorophyll’, this is not the kind of pure *a priori* claim Kant regards as characteristic of transcendental principles, nor does it count as one of Kant’s Critical metaphysical principles of natural science (*MAdN*), because it is so very rooted in biological science, which is synthetic and *a posteriori* (*cf.* Buchdahl 1969, 368–71). Consequently, Burkholder’s claim is not obviously relevant to the generality of any causal principle *qua* principle, whether in Hume’s or in Kant’s or in any tenable account of the status and justification of any general causal principle, which could elevate its (justified) status to that of a universal causal law governing *all* spatio-temporal events.

In connection with Kant’s views, Burkholder claims that

... for the determinist principle to be a constitutive principle is just for it to be a synthetic and *a priori* transcendental proposition. (Burkholder 1974, 144)

This is false; Kant's class of synthetic *a priori* transcendental principles includes both constitutive and regulative principles as species. The specific causal principle, that each spatio-temporal event has (a) numerically distinct spatio-temporal cause(s), plays both a constitutive role and a regulative role within Kant's analysis, though these are not the same role, nor do they have the same generality. Kant's transcendental proof of the constitutive function of this specific causal principle only justifies the claim that, for any apperceptive human being, *S/he* must experience and be aware of experiencing sufficiently extensive and identifiable causal interaction amongst perceptible spatio-temporal substances to identify some of those substances and to distinguish him- or herself as a self-conscious, percipient subject from those objects and events, *as S/he* perceives them. Were this condition not satisfied (fulfilled), Kant argues (*per* above, ch. 8), we could not be aware of it so much as appearing to us that some events appear to occur before, during or after others.

Burkholder's (1974, 144) claim that 'it is perfectly possible for the determinist principle to express both a regulative principle and a synthetic and *a priori* proposition', may as such be correct, though only because it is so very inexact; at no point does his analysis touch upon the specific kinds of epistemic modalities Kant regards as specific to transcendental logic, that is, to a transcendental analysis of the legitimate (and also the illegitimate) role(s) a specific set of *a priori* concepts, principles and judgments can (not) play within human cognition and experience. Whatever may be the merit of Burkholder's several efforts to defend Kant's views and the deterministic principle against Kant's critics, blunting those criticisms does not suffice to justify the determinist principle, certainly not to justify it *a priori*, nor transcendentially.

87.3. McCarty

McCarty (2009) purports to show that Kant developed a causal theory of decision and action which by design is consistent with thorough-going causal determinism. Most briefly, McCarty states his central claims in these terms:

I shall argue that acknowledging that incentives are stronger or weaker psychological forces, in the usual sense of stronger or weaker desires, implies that they causally determine our choices: that through their strengths they causally determine us to act one way rather than another. (McCarty 2009, 81)

Solving the problem of justification and explanation requires showing how practical reasoning that justifies action can also explain it. . . . [My] solution to this problem . . . is . . . that actions can be explained by forceful incentives incorporated into maxims of practical reasoning – maxims from which justifications for action can be

derived. This solution presents human actions as the effects of psychological forces; and it implies that we are always caused to act one way rather than another, that is, on one maxim rather than another, by the relative strengths of those forces. A central methodological assumption here is that all things being equal, the strongest incentive, which is to say, the strongest force of desire, causes (explains) action. (McCarty 2009, 87)

McCarty (65–6) expressly rejects my analysis of Kant's views on these matters, though he failed to understand it, and to understand many central features of Kant's Critical methods.¹¹ In particular, McCarty (66–7) canvasses many passages from Kant's writings which appear to confirm that Kant 'accepted psychological determinism'. McCarty neglected my points that, on Kant's view, of course we *use* causal concepts when thinking and talking about human action (*KTPR* 239–40), but that Kant's Critical question concerns, whether and within what domain(s) are we justified in construing our causal locutions attributively (constitutively)? We agree that Kant frequently states psychological determinism, and we agree that some commentators have denied that Kant held psychological determinism, though McCarty is mistaken that I am amongst them. Nowhere do I deny that Kant stated, or even espoused psychological determinism.

McCarty's focus on what Kant asserts or accepts is puzzling. In *Kant and the Claims of Knowledge*, Guyer's key critical question about Kant's *Critique of Pure Reason* is whether Kant proves his stated conclusions; to avoid anachronism, Guyer (1987, 417) assesses Kant's proofs in terms Kant 'would have understood'. In *Kant's Transcendental Proof of Realism*, I focussed on a different question: In view of Kant's premises, analyses, arguments and proofs, what should have been his conclusions? What conclusions, if any, *are* justified by Kant's analyses and proofs? Focussing solely upon what a philosopher 'accepts' or 'rejects' (an ever more common procedure) reduces philosophy to less than intellectual history: to mere doxography, against which Kant would be the first to protest.

McCarty (66–7) neglects entirely my point (above, §§50, 53–59), that Kant's principles of causal judgment justified in the 'Analogies of Experience' only hold when referred to *spatio*-temporal substances, so that they cannot be known to hold of merely psychological, *i.e.*, merely temporal phenomena. McCarty claims that Kant merely claims that in psychology we cannot 'discover any psychological laws through experience'; however, McCarty contends:

Our inability to make scientifically useful observations in psychology would not imply that psychological phenomena are exempt from

11. All otherwise unattributed parenthetical page references in §86.3 are to McCarty (2009).

causal determinism. And I do not think Kant supposed otherwise. (McCarty 2009, 67)

Kant's Critical strictures on causal judgments within the merely temporal psychological domain entail that we cannot know *pro* or *contra* whether psychological phenomena are causally structured, or are causally deterministic. Throughout, McCarty mistakes the causal *principle*, that every event has a cause, which regulates any and all causal inquiry, for an established, assertoric causal *law*, that every event in fact has some sufficient (set of) cause(s). That is the same transcendental subreption made by Burkholder (§86.2). Whether events have sufficient causes, and if so, what those causes are, remains according to Kant a matter for (fallible, perhaps incomplete) empirical inquiry, though for sound Critical reasons, we can conduct causal inquiries only regarding *spatio*-temporal phenomena.

Against Allison's defence of Kant's theory of freedom based, in part, on what Allison calls Kant's 'Incorporation Thesis', that no inclination is a motive unless and until it is incorporated by an agent into the maxim upon which *S/he* acts, McCarty (64, 71–3) protests that a footnote in the *Religion* is an extremely odd place for Kant to state a doctrine with such allegedly profound systematic significance. McCarty's protest is misguided: Kant's 'Incorporation Thesis' merely expresses Kant's view of rational judgment when considered in connection with any decision, *i.e.*, any judgment about how to act, in view of one's present circumstances, obligations and inclinations. Whether judging matters of knowledge or matters of action, to judge rationally and justifiably involves and requires considering whether the various considerations we integrate in any candidate judgment are now integrated by us in judgment as they *ought* best to be integrated (B317–9, *cf.* 219). Exercise of judgment, Kant rightly insists, is required for using any concepts, principles or rules; it is ineliminable, though it can only be trained and practised, not learnt, nor acquired by learning (B171–5).

McCarty, like Kant and like other determinists, were (and far too many still *are*) taken in by LaPlace's way of *regarding* the spatio-temporal world. LaPlace certainly espoused determinism, but LaPlace's formulation (above, §76) shows his clear awareness of the methodological and substantive distinctions between a confident expectation that determinism shall be borne out (piecemeal) by continued empirical inquiry, and any established knowledge of causally deterministic processes (which certainly is not wholesale). For reasons noted above (§§47, 76), however, determinism cannot be established by Newtonian mechanics. Instead of exercising self-critical judgment, McCarty has sought to assimilate Kant's texts to his own deterministic preconceptions. As philosophers, we are responsible for not letting our presumptions get the better of our considered judgment. The major premiss of the entire debate about determinism and freedom of

action is simply *unknown*. Proofs, however, require more than sound arguments: Proofs require premises which are known to be true. No wonder the debate has been interminable! Here Kant rightly makes common cause with Pyrrhonians, Logical Positivists and ordinary language philosophers that we ought to refrain from debating issues so constructed that in principle they are undecidable because they are unknowable. Kant, however, justifies this methodological point with a sound, straight-forward semantic, referential condition on purported cognitive claims or judgments: that we must be able sufficiently to localise and individuate the relevant purported particulars within space and time (above, §53).

88. Concept Empiricism *Redux*?

Following Fodor, Jesse Prinz (2002, 2005, 2010) attempts to refurbish concept empiricism in entirely causal terms:

Concepts represent categories by reliable causal relations to category instances; conceptual representations of category vary from occasion to occasion; these representations are perceptually based; and these representations are all learned, not innate. (Prinz 2005, 679; *cf.* 681–2, 685–6, 687–8)

A first question is: Amongst all the causal effects produced by any efficient cause, which of those effects can count or serve as concepts? Still today empiricists must be reminded of Leibniz's adroit reply to Locke:

Someone will confront me with this accepted philosophical axiom, that there is nothing in the soul which does not come from the senses. But an exception must be made of the soul itself and its states. *Nihil est in intellectu quod non fuerit in sensu, excipe: nisi ipse intellectus.* (Leibniz (1705), NE2.1.1; 1921, 70; 1981, 109).

That surrounding objects or events often act as occasioning causes to form concepts *qua* classifications is platitudinous, but doesn't even begin to pose the question: How are we human beings and our cognitive capacities so constituted, that in response to sensory observations of surrounding particulars we come to represent their kinds, their characteristics and their specific individualities by classifying them and their manifest features? Contemporary empiricism remains fundamentally pre-Kantian, simply by neglecting Kant's cogent (Leibnizian) observation, that

If indeed all our cognitions begin with experience, they do not thus all arise *out* of experience. (*KdrV* B1)

By appealing indiscriminately to presumed causal relations between concepts and their occasioning causes amongst the circumstances

surrounding any person which S/he experiences, Prinz, like Fodor (2003) and other causal-reliabilists in epistemology, neglect Dretske's analyses, noted above (§§2.2, 86), which show that *in principle* causal relations do not suffice for information relations, and that information relations are necessary (though not sufficient) for representation relations, both sensory and conceptual. Likewise neglected by Prinz and other causal-reliabilists is Kant's set of epistemic distinctions between conceptual or descriptive content, ascription, sufficiently accurate or true ascription and (sufficiently) cognitively justified ascription (above, §26.3). This is no coincidence: both Kant and Dretske (2000b) recognise that those representation relations which can serve us human beings *as* object-related thoughts are all *normatively* structured relations (at the very least, because they are all rooted in proper functioning), which accordingly cannot be explained, explicated or replaced by analyses of merely causal processes or relations.¹² More detailed causal descriptions, such those in Prinz (2002), or those merely conjectured by Fodor (2003, 121, 129), simply fail to address these basic semantic, cognitive and epistemic questions. Cognitive reference to particular causes and their relation(s) are required for any causal explanation, but such reference cannot be established or provided merely by causal descriptions, nor by their mere affirmation or assertion. As much as empiricists like to speak, with Hume, of causal relations pertaining to our sensory ideas or our thoughts, and as much as Hume likened himself to a Newton of the inner world with a basic ontology of objects ('perceptions', whether impressions or ideas) and laws governing their relations (the three official 'laws' of psychological association),¹³ *none* of Hume's alleged psychological laws are in the least quantified, nor is it remotely evident how they could effectively be quantified. Precise quantification and measurement, however, are necessary conditions even for *candidacy* as a causal law of nature; Newton's empiricist fans have never understood this basic point about scientific method (above, §§66–74).

Fodor (2003, 129) rescinds psychological associationism, in part because our actual representational functions are much more complex than Hume imagined. However, when rescinding Hume's associationist psychology, Fodor presents a view which is even vaguer than Hume's! Fodor states:

Association is a relation among *idea types*. Since types are abstracta, they are, as it were, always there. But causation is a relation among *idea tokens*; an idea that was *in situ* causes one that wasn't. How does it do so? I've set this up as a problem for an associationist theory of

12. Regarding Kant in this connection, see Westphal (2012).

13. Hume likens his *Enquiry Concerning Human Understanding* (§1, ¶15) to Newtonian physics.

mental causation since that is, of course, the context in which it arises for Hume. But, actually, the associationism is inessential. So long as some tokens of mental representations are supposed to cause others, there needs to be a story about how the latter are (as Kant might have said) synthesized on the occasion of the former. (Fodor 2003, 121)

Fodor (2003, 130) recognises that Hume has far too little a ‘story’ about such imaginative synthesis of ideas. What Fodor does not recognise is that the crucial operative term in this passage is ‘supposed’; Hume, Fodor and other empiricists like Prinz merely *suppose* ‘some tokens of mental representations . . . cause others’. Philosophers really ought to have long since been finished with just-so stories, whether causal or casual.

Prinz (2010) hails a rebirth of empiricism, though he, like Fodor and Garrett (2015), neglects the fundamental problems which refute Hume’s concept empiricism. At most, Hume’s official copy theory of impressions and ideas, together with his three official laws of psychological association (contiguity, 1:1 correlation and qualitative similarity) can only account for specific, determinate classifications of sensed qualities, as coarse- or fine-grained as one can perceptually discriminate (reliably). However, these official empiricist principles cannot at all define or causally explain the acquisition of merely determinable concepts, concepts the specific scope of which must be determined (specified) within any context of their use. Centrally, Hume’s Concept Empiricism and ‘laws’ of psychological association cannot account for the concepts of ‘space’, ‘time’, ‘physical particular’ (‘body’), ‘cause’, ‘substance’, ‘property’, ‘characteristic’, ‘word’ (as distinct to any arbitrary sound, mark or vocalisation) nor ‘I’. Hume of course recognised that we do possess and use such merely determinable concepts: frequently, unavoidably and without confusion. To account for merely determinable concepts Hume can only appeal to our ‘imagination’. However, for these fundamental, irreplaceable capacities and activities of human imagination Hume offers and can offer *no* empiricist account whatsoever (Westphal 2013a; *cf.* Turnbull 1959): His empiricist resources are exhausted by the three forms of psychological association, concept empiricism and the ‘copy principle’ of impressions and ideas, which do not at all suffice for these latter, indispensable capacities of the human *imagination*. This decisive, illuminating shortcoming of Hume’s concept empiricism is central to Kant’s account of our most fundamental concepts, the categories, and to his account of the transcendental power of imagination (*cf.* above, §§30, 43).

Contemporary ‘causal theorists’ in philosophy of mind, philosophy of language or theory of action like to use causal idioms and enjoy their scientific resonance, though without asking whether or how (specifically, in any actual case) their preferred causal locutions can actually be referred to actual occurrent instances of the alleged causal relata, both causes and effects, central to their presumed ‘theories’. In this regard, the basic

principles of contemporary causal theories in philosophy have much more in common with 17th-century (C.E.) materialism, *e.g.*, Hobbes, D'Holbach or LaMetrie, than with anything in contemporary physical science. This, too, is symptomatic of the neglect of historical philosophy, if not outright hostility to it, so chronic in contemporary analytical philosophy, so that the pre-Kantian character of their ways of philosophising remains opaque to them. I stress these points because they pertain to the very 'method of thinking' Kant rightly saw we must fundamentally change. Continuing neglect of Kant's philosophical advances is not due to lack of reliable information (Mahaffey & Bernard 1889, Watson 1881, Caird 1889). Nevertheless, the views of such 'Fundamaterialists' (Grossman 2002) do not suffice as theories; they hardly suffice for theory-sketches. Causal talk is cheap. Causal theory must be earned; it can only be earned by actual, sufficient causal explanation of specific phenomena. Self-styled philosophical 'naturalists' claim to philosophise scientifically, yet fail to notice that their pet 'theories' are pseudo-scientific.

89. Contra Contemporary Anti-Naturalism in Philosophy of Mind

89.1. *Philosophy or Science Fiction?*

No longer content with imaginary omnipotent deceivers, recent analytical philosophy has instead appealed to such science fiction cases as these: Brains in vats stimulated by super computers which magically fell from the sky; can we tell whether we're envatted brains, or prove that we're not? A normal human adult with a normal personal history and an otherwise physiologically indistinguishable swamp creature with no personal history because it just popped out of the primordial ooze; are both conscious? Are they both self-conscious? Do they have (sufficiently) similar experiences, thoughts or desires? Or two (*ex hypothesi*) physically indistinguishable persons who, when observing the same face of the same tomato at the same time in equally favourable perceptual conditions are supposed to experience different colours, say red and green, since it's a tomato. Examples such as these can be useful in helping to identify what sorts of contextual, historical or interpersonal factors may pertain to various experiences, thoughts, states of awareness or states of self-awareness any one person may have (*cf.* Burge 2010).

However, when examples such as these are used to pose what is regarded as 'the hard problem of consciousness' (Chalmers, 1995; *cf.* Block 2002),¹⁴ which is to explain how anything like our self-conscious

14. Strong content internalism is also defended, *e.g.*, by Searle (1983), Segal (2000), Loar (2003), Horgan and Tienson (2002), Horgan, Tienson and Graham (2004), Kriegel

states of awareness could result from entirely natural, physical and physiological (including neurological) processes, where these are all presumed to be thoroughly causal processes, the task of understanding human consciousness and self-consciousness is so recast that it is *in principle* incomprehensible and inexplicable. Take as our example Fred and his twin *Doppelgänger* Steen, both physiologically indistinguishable, and being close brothers (let us suppose), they have had as closely identical personal histories as two people can have, and generally have closely matching perceptual and aesthetic experiences. Consider the twin brothers now as willing, coöperative, candid research subjects in a vision laboratory, both viewing one single tomato in good lighting placed before them in plain view on a lab bench. Now the example has it that Fred sees the tomato coloured red, whereas Steen sees that same tomato at the same time coloured green. (And we shall keep Goodman out of the lab so that the tomato is neither ‘greed’ nor ‘reen’.) So far as we understand, know or can conceive, such a scenario is logically, conceptually, physiologically and physically possible. What, if anything, does this possibility, or these possibilities, tell us about the character, causal conditions or aetiology of human consciousness? *By design* the example prescind from any and all relations, certainly from any and all constitutive relations, between Fred’s and Steen’s colour experiences, other than granting that they occur when occasioned by the indicated perceptual circumstances. Strong internalists about mental content, or advocates of ‘narrow’ content, maintain that such thought experiments show that states of self-conscious human awareness are non-natural and are entirely first-personal; that we can only know what another experiences if and insofar as *S/he* tells us truthfully about what *S/he* experiences. In this regard, strong internalists and advocates of ‘narrow’ content are tried and true Cartesians: They follow Descartes’ ‘strict’ definition of sensing, according to which one senses exactly and only what one *seems* to sense, what one *seem* to see, to hear, to feel or to smell (Med. 2, AT 7:19). In this regard, this ‘strict’, ‘narrow’ or strongly internalist sense of sensing guarantees infallible, indubitable, incorrigible and exclusively first-person knowledge of whatever one senses. Because this strict, strong internalist sense of sensing is by definition context-free, it is beyond the scope of causal explanation. *Voi là!* Non-naturalism about human consciousness in one quick thought-experiment!

So simple things are – not. This Cartesian ‘definition’ of sensing strictly speaking achieves infallibility, indubitability and incorrigibility, together with non-naturalism, inexplicability and exclusively first-person access

(2013). Note that the sense of ‘internalism’ under discussion here concerns the specification of mental content(s), not the issue of whether human beings have or use ‘internal’ mental representations (however their content may be specified).

(‘access internalism’) by philosophical fiat, by which any alleged object or content of awareness is assimilated to and equated exactly with whatever someone *takes* him- or herself to be aware of, and nothing else. Such ‘experience’ is infallible only because in principle it prescind entirely from any claim to truth, because it does not refer this putative content *to* any distinct particular(s) localised by the person in question. As a mere ‘conceptual possibility’, this kind of Cartesianism may well be conceptually possible. Whether it is humanly possible or humanly actual are, however, further and much more important questions. Precisely by prescinding in principle from any and all relations (other than incidental occasioning circumstances) of such first-personal internal states of awareness, such purported mental content is for that reason entirely inexplicable and incomprehensible, because comprehending and explaining anything involves properly classifying it and relating it to its various constitutive factors, components and aetiology (whether causal or perhaps otherwise).¹⁵

89.2. *The Central Pillar of Strong Internalism*

The central pillar of strong internalism about ‘narrow’ mental content is the presumption that nothing less than necessary truths suffice for philosophical insight and justification. Such necessities require ruling out any and all logically possible alternatives. That we can do only within strictly formal domains (*per* above, §§2.1, 11, 26). Why suppose that mere logical possibilities are germane to philosophical method or to the articulation or justification of philosophical views? This methodological question is illuminated by answering a pair of widely neglected historical questions: How and why did Aristotle’s flexible model of a science, modelled on Euclidian geometry, become the strictly deductive-infallibilist model famously espoused by Descartes (though only in the *Meditations*), which is equally fundamental to Hume’s empiricist view of ‘relations of ideas’? Why was Descartes not guilty of egregious heresy merely by suggesting that the divine omnipotence might deceive him (Med. 1, AT 7:14, 15)? In sum: What, exactly, originated appeals to mere conceivability as a philosophical method, and to inconceivability of the opposite as the standard of sufficient rational justification? All three questions have one precise answer: These philosophical shifts to infallibilism, to justification as strict deduction and to mere conceptual analysis were introduced by fiat in March 1277, when as Bishop of Paris, acting upon authority of the

15. In Westphal (2018a, §§142, 144), I argue that ‘internalist’ notions about mental content are Descartes’ most fundamental self-deception. In Westphal (2017a) I further develop my critique of contemporary Cartesianism and naturalism in philosophy of mind, primarily by examining Dretske’s views much more extensively.

Roman Pope, Étienne Tempier condemned 220 neo-Aristotelian theses as heretical (Piché 1999, Boulter 2011). Tempier's condemnation of those theses both state and imply that the Divinity can do anything which is not logically self-contradictory, and can bring about any natural event without intervening with or upon its typical natural causes. This holds too of those events we typically regard as our perceivings of our surroundings. Nothing short of logical necessity suffices for knowledge (*scientia*). Consequently, 'natural philosophy' can only propose possible explanations, not actual explanations, of natural phenomena. This is exactly the edict Copernicus and Galileo contravened,¹⁶ but which Descartes honoured: experiments can do no more than make one mechanical hypothesis more likely than any other, although the Divinity can have produced any phenomenon in innumerable different ways.¹⁷

There is no reason to suppose that what anyone *takes* him- or herself to be sensorily aware of at any one moment adequately captures what she or he *is* sensorily aware of at that one moment. Human sensory awareness and perceptual awareness are enormously rich in ways which typically defy summary description in 'that . . .' clauses.¹⁸ (If that were not so, we would dispense with the arts, athletics, cuisine and travel and become nothing but bookworms. Heaven help their authors!) The hard problem of consciousness is defined into existence in such a way that only conceptual analysis could address it, but the justificatory status of purely conceptual necessities are restricted to purely formal domains (above, §63). Human consciousness and self-consciousness, fortunately, are non-formal domains. Accordingly, conceptual analysis alone can provide little, if any, insight into or understanding of human consciousness or self-consciousness. To understand our consciousness and self-consciousness requires richer methods, starting with conceptual explication and extending into multi-disciplinary research,

16. On Galileo, see Shea & Artigas (2003).

17. *Prin.* 3.46, AT 8.1:100–1; *Disc. Meth.*, AT 6:45–6; *Le Monde*, AT 11:36. Tempier's condemnation is well-known to Mediaevalists, though widely neglected by Anglophone specialists in Early Modern philosophy: it is neglected by Broughton (2002); Broughton & Carriero (2008); Cottingham (1993), (1998), (2008); Cuning (2014); Curley (1987); Gaukroger (2006b); Gombey (2007); Hatfield (2003); Machamer and McGuire (2009); Nadler (2002); Rutherford (2005); Secada (2004); Smith (2015); Sorell *et al* (2010); Lærke *et al* (2013); and by Wagner (2014). It is mentioned once in Cottingham (1992, 299), by Dan Garber in connection with physics; and once in Genaro & Huenemann (1999, 45*n*.25), by Eric Palmer in connection with Albert of Saxony. It is mentioned twice by Gilson (1922, 2:44, 51); Maier (1940, 69, 77), (1964*ff*) 2:185, 190; by Ariew *et al* (2003, 24, 91); and thrice in Borchert (2006, 1:628–9, 650; 10:1). It is discussed, often extensively, by Maier (1949), Gaukroger (2002, 2006a, 2006b), Ariew (2011) and Boulter (2011).

18. Their distinction Dretske (*KFI x*, 135–68) marked as that between 'analogue' and 'digital' encoding of information.

to which philosophy may contribute, though not by mere arm-chair reflections or speculations.¹⁹ Breezy appeals to our alleged ‘conceptual practices’ (an increasingly common locution) are vacuous, as if only some of our practices are ‘conceptual’, whereas others are not. As has been noted (§§2, 35, 64.1), explicating and assessing our concepts and principles requires considering them critically within their possible contexts of *actual* use, not within imaginary contexts of their mere logically possible use. These actual contexts of actual use are in part conceptually structured, though only in part: they are also structured by our human capacities, our skills, knowledge and abilities, and by the natural and social contexts within which we think and behave. The fallibilism involved in conceptual explication requires examining their actual contexts of use systematically, which (as Wilfrid Sellars knew) must also include: historically, in order to discern what these different contexts of use may tell us about the concepts and principles we explicate, the adequacy of our explications, and whatever justification we can provide for both of these.²⁰

Kant was expressly aware that mere conceptual analysis does not suffice for examining, understanding or assessing substantive issues and analyses, whether in philosophy or within the non-formal domains of knowledge or morals. Too much analytical commentary on Kant’s alleged ‘transcendental arguments’ missed Kant’s insights entirely because they focussed only upon issues of concept possession, but neglected Kant’s sophisticated ‘changed method of thinking’ (Bxvii, 704). Fortunately, Kant’s methodological innovations can be disentangled from and preserved without his hallmark transcendental idealism. Too much commentary on Kant’s texts and (purported) views itself remains fundamentally pre-Critical.

19. Good models of such multi-disciplinary approaches to the mind are developed by, e.g., Andrew Brook, Andy Clark, Shaun Gallagher, Dan Hutto, Ruth Millikan, Michael Tomasello, Evan Thompson and Dan Zahavi. Nevertheless, contemporary philosophy is only beginning to recover the extensive, intensive and altogether cosmopolitan multi-disciplinarity it practiced at the end of the 19th Century; see Westphal (2013b).
20. For detailed discussion of this methodological point, see Westphal (2010–11). Dretske (NM) demonstrates, *contra* Nagel (1974), that purely physical information systems, such as radar systems, can occupy a ‘standpoint’. However, Dretske’s identification of sensory qualia with properties of physical objects is untenable; see Westphal (2017a). The analysis and use of ‘emergence’ may prove decisive in understanding human mindedness, though not if it is treated merely as a terminological repackaging of the vacuous notions of ‘supervenience’, nor as the notion that somehow ‘emergent properties [have] causal powers which are independent of the causal powers of the objects from which they emerge’ (Crane 2001, 207). Rather, when physical components are organised into structures, the resulting structure can – in some specific kinds of cases – behave in ways which are non-aggregative results of the components and their mutual relations within the structure they compose; see esp. Wimsatt (2000), (2006).

90. Regulating Our Cognitive Commitments

The Principle of Sufficient Reason is justified by Kant as a constitutive principle to whatever (*a priori* indeterminable) extent is required for us to have apperceptive experience of our surroundings, whenever, wherever and for so long as we do. Beyond that extent, the Principle of Sufficient Reason plays a regulative role in guiding our causal inquiry into nature and into human affairs, whether collective or individual, and indeed, in making causal inquiry possible for us at all, whether commonsense, diagnostic, forensic, technical or scientific. As noted, the Thesis of Kant's Antinomy of Teleological Judgment states the explanatory maxim of empirical inquiry, namely:

All production of material things and their forms must be judged to be possible according to merely mechanical laws. (*KdU* §70, 5:387)

Yet we must not succumb to the transcendental subreption involved in mistaking this maxim of causal *inquiry* for a justified assertoric *thesis* affirmed with regard to *all* spatio-temporal events.²¹ We must never mistake the *Principle* of Sufficient Reason for an unrestricted, universal, demonstrated (*i.e.*, cognitively fully and unrestrictedly justified) assertoric *law* of causality. More directly: we must never mistake a principle of causal *inquiry* for successful *outcomes* of such inquiry; we must never mistake a research programme for demonstrated results.

Here is the proper place for Kant's Critical humility: Whether in science, in philosophy or in everyday life, we must regulate our beliefs and our convictions according to our evidence, and to the kinds of evidence or proof possible for us within any domain of inquiry. Contemporary philosophical 'naturalism', especially its causal and determinist strands in philosophy of mind, owes far more to the materialism of Hobbes, D'Holbach and de la Mettrie than to anything in contemporary physical science; it is not accidental that scientists rather than philosophers gained knowledge of atoms (Chalmers 2009).²² We have much to look forward to in coming decades of the brain, and of ethology, of cultural anthropology and of other human sciences. Let them flourish! We have only knowledge and self-understanding to gain, *provided* we jettison the obfuscating pretensions of causal determinism and of conceptual analysis, and Critically regulate our philosophical and explanatory inquiries, explications and justifications.

21. On transcendental subreption see A509, 582–3, 619–20, 643–4/B537, 610–11, 647–8, 671–2.

22. Here I have followed Kant in making epistemological and methodological objections to contemporary naturalism in philosophy of mind; for criticism of its faulty presumptions about causality, see *e.g.*, Baker (1993, 2013).

These rather pointed remarks and examples are, I well know, unlikely to attract fans and followers. However, some truths must be stated: Especially in circumstances such as ours, in which deteriorating standards of training, methodology, professional refereeing, academic appointment and promotion are turning what was once the love, pursuit and teaching of wisdom into a cacophonous, unruly talking shop. Either we put our philosophical affairs in proper order, or we abdicate our responsibilities and void any just grounds of complaint if others understandably economise by closing down contemporary towers of babble.²³

91. Some Final Reflections

When I met Sir Peter Strawson in 1999, well after his further development of Kant's epistemological insights noted above, he emphatically reaffirmed his original assessment of Kant's contributions to epistemology:

. . . the Transcendental Deduction, the Analogies, and the Refutation [of Idealism] together establish important general conclusions. . . . the fulfilment of the fundamental conditions of the possibility of self-consciousness, of self-ascription of experiences, seems to be necessary to any concept of experience which can be of interest to us, . . . Kant's genius nowhere shows itself more clearly than in his identification of the most fundamental of these conditions in its most general form: viz., the possibility of distinguishing between a temporal order of subjective perceptions and an order and arrangement which objects of those perceptions independently possess – a unified and enduring framework of relations between constituents of an objective world. . . . These are very great and novel gains in epistemology, so great and so novel that, nearly two hundred years after they were made, they still have not been fully absorbed into the philosophical consciousness. (*BoS* 28–9)

To achieve his insights Kant developed 'a changed method of thinking' (*Bxviii*, 326, 704). Kant is right that our typical Cartesian-empiricist presumptions require fundamental overhaul and replacement; to this Watson (1881) remains germane. Kant's texts and insights, and those of his most able commentators, none of their letters purloined, have been open to public view and review, occluded only by readers' misleading philosophical habits of thought and expectations. Innovations and insights can only be identified, and can only be assessed, by comprehending what our predecessors and contemporaries have achieved. As Kant noted regarding romantic genius (*KdU* §50), the problem with 'originality' is

23. My concerns on this front are detailed in Westphal (2018b).

that it may only produce original nonsense. The dearth of methodological care and critical self-assessment now accepted in the field does us no credit. One central point is that any *method* of conceptual analysis must solve or resolve the paradox of analysis (*cf.* Hare 1960). This decisive methodological problem is mentioned only once in the Blackwell *Companion to Analytic Philosophy*, by Ernest Sosa (2001, 46), who observes that ‘Those who still care about piecemeal analysis . . . have good reason to feel nagged by this worry’. Why only piecemeal analysis should attend to the paradox of analysis he does not say. This paradox is omitted altogether from the second edition of *The Encyclopedia of Philosophy* (Borchert, 2006). Hume’s problem of induction is a theological Trojan horse (Boulter 2002), directly bequeathed to empiricists by Tempier (1277). The sufficiency of a merely descriptive ‘covering law’ model of scientific explanation and the presumption that there are merely occurrent, non-dispositional properties are both metaphysical (empirically irrefutable) dogmas of empiricism which cannot be reconciled with any of the vast amount of causal knowledge of natural forces and natural laws gained by natural sciences, nor with even our most commonsense perceptual experience of our surroundings.

As noted (§2.1), Kant (B755–9) and Carnap (1950a, 1–18) both expressly distinguish conceptual analysis from conceptual explication, for much the same reasons and to the same effect. Conceptual explication cannot aspire to completeness, nor to necessity; conceptual explication is selective and aspires to improve the clarity of the explicated concept(s) and to improve upon their use *in the context(s)* of original use of the concept(s) in question. Any conceptual explication is corrigible and partial; its assessment is always in part a function of their improved functioning within possible contexts of their *actual* use, *not* within merely imagined contexts of their (allegedly) possible use. Because they are context-bound in this way, conceptual explications involve, and invoke, important aspects of both justificatory and also semantic externalism, the thesis that the content (intension) of a concept or term may be specified by factors unacknowledged by a competent Speaker, which may concern circumstances of which *S/he* cannot become aware by simple reflection. Simply *calling* a philosophical account of a concept, term, phrase or principle an ‘analysis’ does not suffice for that account to *be* a conceptual analysis. If the content or adequacy of that account depends in any regard upon its context of actual use, it is an explication. Such context-dependence must be made a philosophical virtue. Even if proposing or using a formalised meta-language, because philosophical issues are complex, elusive and easily obscured by incautious phrasing, one must consult carefully the opinions of the many and the wise. Sellars found the wise throughout philosophical history, from the pre-Socratics to the present day, because core issues regarding the logical forms of

thought and the connection of thought with things are perennial, arising in distinctive, paradigmatic forms in each era. One result of Sellars's expansive, discerning research is a catalogue and critical assessment of philosophical locutions, that is, of the 'ordinary language' of *philosophers*. Only by examining these can one find the most suitable, least misleading formulations of issues, specific theses, distinctions, and their relations. Sellars knew that the anti-systematic, piecemeal method of analytic puzzle-solving was doomed in its own terms when Carnap (1950b) adopted a moderately holistic semantics (*cf.* Toulmin 1949, Wick 1951). Thus philosophy must be systematic, and it can be systematic only by also being historical. The interconnections amongst philosophical issues, both direct and indirect, provide crucial checks against inapt formulations. Hence cultural and intellectual history play central, ineliminable roles within rational justification in non-formal, substantive domains.²⁴ Hence in justifying substantive philosophical views, history of philosophy plays a central, ineliminable role. Aristotle, Hegel, Wilfrid Sellars and Kant (B880–4) understood this point, as did the first generations of 'analytical' philosophers, who still knew and understood that against which they reacted. Negligence in these regards condemns philosophy to the fate of pre-Critical metaphysics, 'of merely groping, and worst of all, amongst mere concepts' (Bxv). This is the predicament of rather too much contemporary philosophy.

Cogent philosophy requires integrating critical acumen, historical comprehension and appreciation of actual phenomena which pose continuing philosophical perplexities and opportunities. Mere conceptual analyses do not suffice, not for cognition, nor for substantive philosophy. (This is not at all to dismiss ordinary language philosophy, which properly undertaken uses ordinary language to cleave to actual phenomena which may give rise to philosophical perplexities, or may alert us to their (dis)solution.)²⁵ Cogent epistemology requires attending to Tetens's keen deictic point regarding whether or how we can realise our concepts and principles, and reflecting transcendently on the formal and sensory conditions which must be satisfied if any determinate (specific) singular reference to particulars is to be possible for us *homo sapiens semi-sapientes*. The character, scope and limits of conceptual explication, Kant's Thesis of Singular Cognitive Reference, and the quintessential epistemological

24. My topic here is rational justification. I do not limit cognitive justification to rational justification; externalist factors play crucial justificatory roles in perceptual knowledge.

25. *E.g.*, John Hyman (2003) officially reconsiders a 'conceptual analysis', though in ways cleaving to actual perceptual phenomena and providing conceptual explication and elucidation; not the necessary and sufficient conditions required by conceptual analysis classically understood.

distinctions it justifies, demonstrate that epistemology cannot be reduced to, nor supplanted by, philosophy of mind, philosophy of language nor formalised syntax and semantics, and that epistemology must engage much more seriously with actual human cognition, whether common-sense, diagnostic or scientific. Good intentions cannot suffice. Epistemology must consider judgment first and foremost.

Bibliography

- Abaci, Uygur, 2019. *Kant's Revolutionary Theory of Modality*. Oxford, Oxford University Press.
- Adams, Robert, 1997. 'Things in Themselves'. *Philosophy and Phenomenological Research* 57.4:801–825.
- Airy, George Biddell, 1834. *Gravitation: An Elementary Explanation of the Principal Perturbations in the Solar System*. London, Macmillan; 2nd ed.: 1884.
- Allais, Lucy, 2009. 'Kant, Non-Conceptual Content and the Representation of Space'. *Journal of the History of Philosophy* 47.3:383–413.
- Allison, Henry, 1983. *Kant's Transcendental Idealism: An Interpretation and Defence*, 1st ed. New Haven, Yale University Press; 2nd rev. ed.: 2004.
- , 1990. *Kant's Theory of Freedom*. Cambridge, Cambridge University Press.
- , 1997. 'We can act only under the Idea of Freedom'. *Proceedings and Addresses of the American Philosophical Association* 71.2:39–50.
- , 2004. *Kant's Transcendental Idealism: An Interpretation and Defence*, 2nd rev. ed. New Haven: Yale University Press.
- Alston, William, 1989. *Essays in Epistemic Justification*. Ithaca, Cornell University Press.
- , 2005. *Beyond Justification: Dimensions of Epistemic Evaluation*. Ithaca, NY, Cornell University Press.
- Ameriks, Karl, 1992. 'Kantian Idealism Today'. *History of Philosophy Quarterly* 9:329–40.
- Ariew, Roger, Dennis DesChene, Douglas Jesseph, Tad Schmaltz and Theo Verbeek, 2003. *Historical Dictionary of Descartes and Cartesian Philosophy*. Lanham, MD, The Scarecrow Press.
- Ariew, Roger, 2011. *Descartes among the Scholastics*. Leiden, Brill.
- Austin, J.L., 1946. 'Other Minds'. *Proceedings of the Aristotelian Society*, sup. vol. 20:148–187; rpt. in: *idem*. (1979), 76–110.
- , 1950. 'Truth'. *Proceedings and Addresses of the Aristotelian Society*, sup. 24:111–128; rpt. in: *idem*. (1979), 111–128.
- , 1979. *Philosophical Papers*, 3rd ed. J.O. Urmson & G.J. Warnock, eds. Oxford, The Clarendon Press.
- Baker, Lynn Rudder, 1993. 'Metaphysics and Mental Causation'. In: J. Heil & A. Mele, eds., *Mental Causation* (Oxford, The Clarendon Press), 75–95.
- , 2013. *Naturalism and the First-Person Perspective*. New York, Oxford University Press.

- Barwise, John, and John Perry, 1981. 'Situations and Attitudes'. *The Journal of Philosophy* 78.11:668–691.
- Baum, Manfred, 1986. *Deduktion und Beweis in Kants Transzendentalphilosophie*. Königstein/Ts.: Hain bei Athenäum.
- Baumgarten, Alexander, 1786. *Metaphysica*, 6th ed. Halle (Magdaburg), Hemmerde.
- , 2013. *Metaphysics*. C. Fugate & J. Hymers, eds. & trs. London, Bloomsbury.
- Beauchamp, Thomas L., and Alexander Rosenberg, 1981. *Hume and the Problem of Causation*. Oxford, Oxford University Press.
- Beck, Lewis White, 1965. 'Lewis' Kantianism'. In: *idem.*, *Studies in the Philosophy of Kant* (Indianapolis: Bobbs-Merrill, 1965), 108–124; also published as: 'The Kantianism of Lewis', in: P.A. Schilpp, ed., *The Philosophy of C.I. Lewis* (LaSalle, Ill.: Open Court, 1986), 271–285.
- , 1978. *Essays on Kant and Hume*. New Haven, Yale University Press.
- , ed. & tr., 1988. *Kant Selections*. New York, Macmillan.
- Bell, David, 1999. 'Transcendental Arguments and Non-Naturalistic Anti-Realism'. In: R. Stern, ed., *Transcendental Arguments: Problems and Prospects* (Oxford, Oxford University Press), 189–210.
- Bennett, Jonathan, 1966. *Kant's Analytic*. Cambridge, Cambridge University Press.
- , 1979. 'Analytic Transcendental Arguments'. In: P. Bieri, R.-P. Horstmann, & L. Krüger, eds., *Transcendental Arguments and Science* (Dordrecht, Reidel), 45–64.
- Berkeley, George, 1998. *A Treatise Concerning the Principles of Human Knowledge*. J. Dancy, ed. Oxford, Oxford University Press; cited by part:§ numbers.
- Bernecker, Sven, and Duncan Pritchard, eds., 2011. *The Routledge Companion to Epistemology*. London, Routledge.
- Betti, Arianna, Willem R. De Jong, and Marije Martijn, guest eds., 2010–11. *The Classical Model of a Science: A Millenia-old Model of Scientific Rationality* (*Synthese* 174.2:181–314, 183.1:1–126). Dordrecht, Springer.
- Bieri, Peter, Ralf-Peter Horstmann and Lorenz Krüger, eds., 1979. *Transcendental Arguments and Science*. Dordrecht, Reidel.
- Bird, Graham, 1962. *Kant's Theory of Knowledge*. London, Routledge & Kegan Paul.
- , 1972. *Philosophical Tasks: An Introduction to some Aims and Methods in Recent Philosophy*. London, Hutchinson.
- , 1982. 'Kant's Transcendental Idealism'. In G. Vesey, ed., *Idealism Past and Present* (Cambridge: Cambridge University Press), 71–92.
- , 1996. 'McDowell's Kant: *Mind and World*'. *Philosophy* 71.276:219–243.
- , 1998. 'Kantian Themes in Contemporary Philosophy II'. *Proceedings of the Aristotelian Society*, Supp. vol. 72:131–151.
- , 2006a. *The Revolutionary Kant*. Chicago, Open Court.
- , ed., 2006b. *A Companion to Kant*. Oxford, Blackwell.
- , 2006c. 'Kant's Analytical Apparatus'. In: *idem.* (2006b), 125–139.
- Bitbol, Michel, Pierre Kerszberg, and Jean Petitot, eds., 2009. *Constituting Objectivity: Transcendental Perspectives on Modern Physics*. Dordrecht, Springer.

- Block, Ned, 2002. 'The Harder Problem of Consciousness'. *The Journal of Philosophy* 99:391–425.
- Bolzano, Bernard, 1837. *Wissenschaftslehre*, 4 vols. Sulzbach, Seidel.
- , 1973. *Theory of Science*, vol. 1. J. Berg, ed., B. Terrell, tr. Dordrecht, Reidel.
- , 2013–14. *Theory of Science*, vols. 2–4. P. Rusnock & R. George, trs. Oxford, Oxford University Press.
- BonJour, Laurence, 1997. 'Haack on Justification and Experience'. *Synthese* 112:13–23.
- Bonnet, Christian, and Ronan de Calan, 'Moritz Schlick: Between Synthetic *A Priori* Judgment and Conventionalism'. In: Bitbol, Kerszberg & Petitot, eds., *Constituting Objectivity* (Dordrecht, Springer), 117–126.
- Borchert, Donald, ed.-in-chief, 2006. *Encyclopedia of Philosophy*, 2nd ed. Detroit, Macmillan Reference/Thomson-Gale.
- Boulter, Stephen, 2002. 'Hume on Induction: A Genuine Problem or Theology's Trojan Horse?' *Philosophy* 77:67–86.
- , 2011. 'The Medieval Origins of Conceivability Arguments'. *Metaphilosophy* 42.5:617–641.
- Bouwman, O.K., 1949. 'Descartes' Evil Genius'. *The Philosophical Review* 58.2:141–151.
- Brading, Katherine, and Elaine Landry, 2006. 'Scientific Structure: Presentation and Representation'. *Philosophy of Science* 73.5:571–581.
- Brandom, Robert, 1981. 'Paradox of Material Implication'. *Notre Dame Journal of Formal Logic* 22.2:129–132.
- , 2008. *Between Saying and Doing: Towards an Analytic Pragmatism*. Oxford, Oxford University Press.
- , 2015. *From Empiricism to Expressivism: Brandom Reads Sellars*. Cambridge, Mass., Harvard University Press.
- Brembs, Björn, 2011. 'Towards a Scientific Concept of Free Will as a Biological Trait: Spontaneous Actions and Decision-Making in Invertebrates'. *Proceedings of the Royal Society: Biological Sciences* 278:930–939; DOI: 10.1098/rspb.2010.2325.
- Brentano, Franz, 1874. *Psychologie vom empirischen Standpunkt*, 2 vols. Leipzig, Duncker & Humblot.
- Brook, Andrew, 1994. *Kant and the Mind*. Cambridge, Cambridge University Press.
- , 2016. 'Kant's View of the Mind and Consciousness of Self'. In: E.N. Zalta, ed., *The Stanford Encyclopedia of Philosophy*; URL = <<https://plato.stanford.edu/archives/win2016/entries/kant-mind/>>.
- Brook, Andrew, & Richard C. DeVidi, 2001. *Self-Reference and Self-Awareness*. Amsterdam & Philadelphia, John Benjamins.
- Brook, Andrew, & Kathleen Akins, eds., 2005. *Cognition and the Brain: The Philosophy and Neuroscience Movement*. Cambridge, Cambridge University Press.
- Broughton, Janet, 2002. *Descartes's Method of Doubt*. Princeton, Princeton University Press.
- , and John Carriero, eds., 2008. *A Companion to Descartes*. London, Blackwell.

- Brown, Curtis, 2011. 'Narrow Mental Content'. In: E.N. Zalta, ed., *The Stanford Encyclopedia of Philosophy* (Fall 2011 Edition); URL: <<http://plato.stanford.edu/archives/fall2011/entries/content-narrow/>>.
- Buchdahl, Gerd, 1969. *Metaphysics and the Philosophy of Science*. Oxford, Blackwell.
- , 1992. *Kant and the Dynamics of Reason*. London, Blackwell.
- Burkholder, L., 1974. 'The Determinist Principle as Synthetic and A Priori'. *Philosophia* 4.1:139–161.
- Burge, Tyler, 1992. 'Philosophy of Language and Mind: 1950–1990'. *The Philosophical Review* 101.1:3–51.
- , 2010. *Origins of Objectivity*. Oxford, The Clarendon Press.
- Caird, Edward, 1889. *The Critical Philosophy of Immanuel Kant*, 2 vols. Glasgow, Maclehose.
- Carnap, Rudolf, 1928. *Der logische Aufbau der Welt*. Berlin, Weltkreis.
- , 1931. *The Unity of Science*. London, Routledge & Kegan Paul.
- , 1932–33. 'Erwiderung auf die vorstehenden Aufsätze von E. Zilsel und K. Duncker'. *Erkenntnis* 3: 177–188.
- , 1942. *Introduction to Semantics*. Cambridge, Mass., Harvard University Press.
- , 1950a. *Logical Foundations of Probability*. Chicago, University of Chicago Press.
- , 1950b. 'Empiricism, Semantics, and Ontology'. *Revue Internationale de Philosophie* 4:20–40; 2nd rev. ed. in: Carnap (1956), 205–221.
- , 1956. *Meaning and Necessity*, 2nd rev. ed. Chicago, University of Chicago Press.
- , 1963. 'Replies and Systematic Expositions'. In: P.A. Schilpp, ed., *The Philosophy of Rudolf Carnap* (LaSalle, Ill., The Library of Living Philosophers), 859–1013.
- Carrier, Martin, 1992. 'Kant's Relational Theory of Absolute Space'. *Kant-Studien* 83.4:399–416.
- , 1999. 'Isaac Newton. Prinzipien der Naturphilosophie: Raum, Kraft, Bewegung und Gott'. In: L. Kreimendahl, ed., *Philosophen des 17. Jahrhunderts. Eine Einführung* (Darmstadt, Wissenschaftliche Buchgesellschaft), 176–197.
- Cartwright, Nancy, 1983. *How the Laws of Physics Lie*. Oxford, The Clarendon Press.
- Caruso, Gregg, 2012. *Free Will and Consciousness: A Determinist Account of the Illusion of Free Will*. Lanham, MD, Lexington Books.
- Caruthers, Paul, 'Conceptual Pragmatism'. *Synthese* 73 (1987):205–24.
- Cashmore, Anthony, 2010. 'The Lucretian Swerve: The Biological Basis of Human Behavior and the Criminal Justice System'. *Proceedings of the National Academy of Sciences of the United States of America* 107.10:4499–4504; DOI: www.pnas.org/cgi/doi/10.1073/pnas.0915161107.
- Cassam, Quassim, 1987. 'Transcendental Arguments, Transcendental Synthesis and Transcendental Idealism'. *Philosophical Quarterly* 37.149:355–378.
- Chalmers, Alan, 2009. *The Scientist's Atom and the Philosopher's Stone: How Science Succeeded and Philosophy Failed to Gain Knowledge of Atoms*. Dordrecht, Springer.
- Chalmers, David, 1995. 'Facing up to the Problem of Consciousness'. *Journal of Consciousness Studies* 2:200–219.

- Chisholm, Roderick M., 1960. *Realism and the Background of Phenomenology*. New York, Free Press.
- Christensen, David, 1983. 'Glymore on Evidential Relevance'. *Philosophy of Science* 50:471–481; rpt. in: L. Sklar, ed., *The Philosophy of Science: A Collection of Essays* (London: Taylor & Francis, 2000), 119–129.
- , 1990. 'The Irrelevance of Bootstrapping'. *Philosophy of Science* 57:644–662; rpt. in: L. Sklar, ed., *The Philosophy of Science: A Collection of Essays* (London: Taylor & Francis, 2000), 130–148.
- Chrudzimski, Arkadiusz, 2007. *Gegenstandstheorie und Theorie der Intentionalität bei Alexius Meinong*. Berlin, Springer.
- Cleeremans, Axel, ed., 2003. *The Unity of Consciousness: Binding, Integration, and Dissociation*. Oxford, Oxford University Press.
- Coffa, Alberto, 1991. *The Semantic Tradition from Kant to Carnap: to the Vienna Station*. New York, Cambridge University Press.
- Conant, James, 1991. 'The Search for Logically Alien Thought'. *Philosophical Topics* 20.1:115–180.
- , 2002. 'The Method of the *Tractatus*'. In: E. Reck, ed., *From Frege to Wittgenstein* (Oxford, Oxford University Press), 374–462.
- Condillac, Etienne Bonnot, Abbé de, 1754. *Traité des Sensations*, 2 vols., rev. ed.: 1798. Paris: Delagrave, 1885.
- , 1982, 1987. *A Treatise on Sensations*. Rpt. in vol. 1 of: *Philosophical Writings of Etienne Bonnot, Abbé de Condillac*, 2 vols. F. Philip, tr. Hillsdale NJ, Lawrence Erlbaum.
- Corcoran, John, 1974. 'Aristotle's Natural Deduction System'. In: J. Corcoran, ed., *Ancient Logic and its Modern Interpretations* (Dordrecht, Reidel), 85–132.
- , 2006. 'C.I. Lewis: History and Philosophy of Logic'. *Transactions of the Charles S. Peirce Society* 42.1:1–9.
- Cottingham, John, 1993. *A Descartes Dictionary*. Oxford, Blackwell.
- , ed., 1998. *Descartes*. Oxford, Oxford University Press.
- , 2008. *Cartesian Reflections. Essays on Descartes's Philosophy*. Oxford, Oxford University Press.
- Cramer, Konrad, 1985. *Nicht-reine synthetisch Urteile a priori. Ein Problem der Transzendentalphilosophie Immanuel Kants*. Heidelberg, Winter.
- Crane, Timothy, 2001. 'The Significance of Emergence'. In: C. Gillet & B. Loewer, eds., *Physicalism and Its Discontents* (Cambridge, Cambridge University Press), 207–224.
- Creath, Richard, 1991. 'Every Dogma has its Day'. *Erkenntnis* 35:347–389.
- Cunning, David, ed., 2014. *The Cambridge Companion to Descartes' Meditations*. Cambridge, Cambridge University Press.
- Curley, Edwin, 1987. *Descartes against the Skeptics*. Cambridge, Mass., Harvard University Press.
- Davidson, Donald, 1983. 'A Coherence Theory of Truth and Knowledge'. In: D. Henrich, ed., *Kant oder Hegel?* (Stuttgart, Klett-Cotta), 423–438; rpt. in: *idem.* (2001), 137–153.
- , 1987. 'Afterthoughts' to 'A Coherence Theory of Truth and Knowledge'. In: *idem.*, (2001), 154–157.
- , 1980. *Essays on Actions and Events*. Oxford, The Clarendon Press.
- , 2001. *Subjective, Intersubjective, Objective*. Oxford, The Clarendon Press.

- , 2004. *Problems of Rationality*. Oxford, The Clarendon Press.
- Dayton, Eric, 1995. 'C.I. Lewis and the Given'. *Transactions of the Charles S. Peirce Society* 31.2:254–284.
- DeGandt, François, 1995. *Force and Geometry in Newton's Principia*. Curtis Wilson, tr. Princeton, Princeton University Press.
- De Pierris, Graciela and Michael Friedman, 2013. 'Kant and Hume on Causality'. In: E.N. Zalta, ed., *The Stanford Encyclopedia of Philosophy*; <<http://plato.stanford.edu/archives/win2013/entries/kant-hume-causality/>>.
- de Waal, Frans, 2006. *Primates & Philosophers. How morality evolved*. Princeton, Princeton University Press.
- Demopoulos, William, 2003. 'On The Rational Reconstruction of our Theoretical Knowledge'. *British Journal for the Philosophy of Science* 54:371–403.
- Descartes, René, 1964–76. *Oeuvres de Descartes*, rev. ed. C. Adam & P. Tannery, eds., Paris, Vrin; cited as 'AT' by vol.:page numbers.
- , 1985, 1991. *The Philosophical Writings of Descartes*, 3 vols. J. Cottingham, R. Stoothoff, D. Murdoch, also A. Kenny eds. & trs. Cambridge, Cambridge University Press.
- de Vries, Willem, 1988. *Hegel's Theory of Mental Activity*. Ithaca, NY, Cornell University Press.
- , 2006. 'McDowell, Sellars, and Sense Impressions'. *European Journal of Philosophy* 14.2:182–201.
- , and Tim Ripplett, 2000. *Knowledge, Mind, and the Given*. Cambridge, Mass., Hackett Publishing Co.
- , 2005. *Wilfrid Sellars*. Chesham, Bucks, Acumen.
- , 2007. Review of J. Haag (2007), *Erfahrung und Gegenstand. Internationales Jahrbuch des Deutschen Idealismus* 5:368–75.
- , 2013. 'Subjective Spirit: Soul, Consciousness, Intelligence and Will'. In: A. DeLaurentiis & J. Edwards, eds., *The Bloomsbury Companion to Hegel* (London, Bloomsbury), 133–156.
- Diamond, Cora, 1991. *The Realistic Spirit*. Cambridge, Mass., MIT/Bradford Books
- Dicken, Paul, 2007. 'Constructive Empiricism and the Metaphysics of Modality'. *British Journal for Philosophy of Science* 58:605–612.
- Donnellan, Keith, 1966. 'Reference and Definite Descriptions'. *The Philosophical Review* 75.3:281–304.
- Dretske, Frederick I., 1969. *Seeing and Knowing*. London, Routledge & Kegan Paul.
- , 1971. 'Conclusive Reasons'. *Australasian Journal of Philosophy* 49.1:1–22; rpt. in: *idem*. (2000a), 1–29.
- , 1981. *Knowledge and the Flow of Information*. Cambridge, Mass., MIT/Bradford Books.
- , 1995. *Naturalizing the Mind*. Cambridge, Mass., MIT Press.
- , 2000a. *Perception, Knowledge, and Belief: Selected Essays*. Cambridge, Cambridge University Press.
- , 2000b. "Norms, History, and the Constitution of the Mental". In: *idem*. (2000a), 242–258.
- Dryer, Douglas, 1966. *Kant's Solution for Verification in Metaphysics*. London, George Allen & Unwin.
- Earman, John, 1986. *A Primer on Determinism*. Dordrecht, Kluwer.

- Edwards, Jeffrey, 2000. *Substance, Force, and the Possibility of Knowledge*. Berkeley, University of California Press.
- Einstein, Albert, 2000. *The Expanded Quotable Einstein*. Princeton, Princeton University Press.
- Elgin, Catherine, 1999. *Considered Judgment*. Princeton, Princeton University Press.
- Engstler, Achim, 1990. *Untersuchungen zum Idealismus Salomon Maimons*. Stuttgart-Bad Cannstadt, frommann-holzboog.
- Erdmann, Beno, 1881. *Nachträge zu Kants Kritik der reinen Vernunft*. Kiel: Lip-sius & Fischer.
- Evans, Gareth, 1975. 'Identity and Predication'. *Journal of Philosophy* 72.13: 343–363; rpt. in: *idem.* (1985), 25–48.
- , 1982. J. McDowell, ed., *The Varieties of Reference*. Oxford, The Clarendon Press.
- , 1985. *Collected Papers*. Oxford, The Clarendon Press.
- Falkenburg, Brigitte, 2012. *Mythos Determinismus*. Berlin, Springer.
- Ferrini, Cinzia, 2015. *L'invenzione di Cartesio. La disembodied mind negli studi contemporanei: eredità o mito?* Trieste, Edizioni dell'Università di Trieste.
- Flew, Anthony, ed., 1965. *Logic and Language: First and Second Series*. New York, Anchor.
- Fodor, Jerry, 2003. *Hume Variations*. Oxford & New York, The Clarendon Press.
- Frege, Gottlob, 1879. *Begriffsschrift, eine der arithmetischen nachgebildete Formelsprache des reinen Denkens*. Halle an der Saale, Nebert.
- , 1892a. "Über Sinn und Bedeutung". *Zeitschrift für Philosophie und philosophische Kritik* 100:25–50; tr. in: *idem.* (1960), 56–78.
- , 1892b. "Ueber Begriff und Gegenstand". *Vierteljahresschrift für wissenschaftliche Philosophie* 16:192–205; tr. in: *idem.* (1960), 42–55.
- , 1903. *Grundgesetze der Arithmetik*, vol. 2. Jena, Pohle.
- , 1960. P. Geach & M. Black, eds., *Translations from the Philosophical Writings of Gottlob Frege*, 2nd rev. ed. Oxford, Basil Blackwell.
- , 1967. 'Begriffsschrift, a formula language, modeled upon that of arithmetic, for pure thought'. S. Bauer-Mengelberg, tr. In: J. van Heijenoort, ed., *From Frege to Gödel, A source book in mathematical logic, 1879–1931* (Cambridge, Mass., Harvard University Press), 5–82.
- Friedman, Michael, 1983. *Foundations of Space-Time Theories: Relativistic Physics and Philosophy of Science*. Princeton, Princeton University Press.
- , 1992. *Kant and the Exact Sciences*. Cambridge, Mass., Harvard University Press.
- Galilei, Galileo, 1888–89 A. Favaro, ed.-in-chief, *Edizione Nazionale della opere di Galileo Galilei*, 20 vols.; cited as 'EN'.
- , 1638. *Discorsi e dimonstrazioni matematiche intorno a due nuove scienze*, EN 8.
- , 1914. *Dialogues concerning Two New Sciences*, H. Crew & A. De Salvio, trs. New York, Macmillan.
- Garrett, Donald, 2015. *Hume*. Oxford, Routledge.
- Garvey, James, ed., 2011. *The Continuum Companion to Philosophy of Mind*. London, Continuum.
- Gemes, Ken, 2005. 'Hypothetico-Deductivism: Incomplete but not Hopeless'. *Erkenntnis* 63:139–147.

- Gaukroger, Stephen, 2002. *Descartes's System of Natural Philosophy*. Cambridge, Cambridge University Press.
- , 2006a. *The Emergence of a Scientific Culture: Science and the Shaping of Modernity, 1210–1685*. Oxford, Oxford University Press.
- , ed., 2006b. *The Blackwell Guide to Descartes' Meditations*. London, Blackwell.
- Gennaro, Rocco, and Charles Huenemann, eds., 1999. *New Essays on the Rationalists*. Oxford, Oxford University Press.
- George, Rolf, 1981. 'Kant's Sensationism'. *Synthese* 47.2:229–55.
- Gettier, Edmund, 1963. 'Is Justified True Belief Knowledge?' *Analysis* 23.6: 121–23.
- Gilson, Etienne, 1922. *La philosophie au moyen age*, 2 vols. Paris, Payot.
- Gombey, André, 2007. *Descartes*. London, Blackwell.
- Goodman, Nelson, 1946. 'The Problem of Counterfactual Conditionals'. Rpt. in: *idem., Fact, Fiction and Forecast*, 4th ed. (Cambridge, Mass.: Harvard University Press, 1983), 1–27.
- Gram, Moltke, 1983. 'The Skeptical Attack on Substance: Kantian Answers'. *Midwest Studies in Philosophy* 8:359–371.
- Grant, Robert., 1852. *History of Physical Astronomy, from the Earliest Ages to the Middle of the Nineteenth Century*. London, Bohn.
- Greenberg, Robert, 2001. *Kant's Theory of A Priori Knowledge*. State College, Pa, Pennsylvania State University Press.
- , 2008. *Real Existence, Ideal Necessity: Kant's Compromise, and the Modalities without the Compromise*. Berlin, de Gruyter.
- , 2016. *The Bounds of Freedom: Kant's Causal Theory of Action*. Berlin, de Gruyter.
- Greenough, Patrick, and Duncan Pritchard, eds., 2009. *Williamson on Knowledge*. Oxford, Oxford University Press.
- Groarke, Louis, (n.d.). 'Aristotle: Logic'. In: *The Internet Encyclopedia of Philosophy (IEP)* (ISSN 216–0002); <https://www.iep.utm.edu/aris-log/> (accessed 30.01.2020).
- Grossman, Neal, 2002. "Who's Afraid of Life after Death?" *Journal of Near-Death Studies* 21:5–24.
- Grünbaum, Adolf, and Wesley Salmon, eds., 1988. *The Limitations of Deductivism*. Pittsburgh, University of Pittsburgh Press.
- Grundmann, Thomas, 1994. *Analytische Transzendentalphilosophie. Eine Kritik*. Paderborn, Schöningh.
- , 2003. 'Perceptual Representations as Basic Reasons'. In: R. Schumacher, ed., *Perception and Reality. From Descartes to the Present* (Paderborn, Mentis), 286–303.
- Gurwitsch, Aron, 1957. *Théorie du champ de la conscience*. Bruges, Desclée de Brouwer; author's english translation rpt. in: *idem.* (2009–10), vol. 3.
- , 1959. "Beitrag zur phänomenologischen Theorie der Wahrnehmung". *Zeitschrift für philosophische Forschung* 13,3:419–437; author's english trans. in: *idem.* (2009–10), 2:371–390.
- , 1962. *The Field of Consciousness*. Pittsburgh, Duquesne University Press; author's english translation of previous item; rpt. in: *idem.* (2009–10), vol. 3.
- , 1966. *Studies in Phenomenology and Psychology*. Evanston, IL., Northwestern University Press; rpt. in: *idem.* (2009–10), vol. 2.

- , 1990. T. Seebohm, ed., *Kants Theorie des Verstandes*. Dordrecht, Kluwer.
- , 2009–10. L. Embree, F. Kersten, A. Métraux & R. Zaner, eds. in chief, *The Collected Works of Aron Gurwitsch (1901–1973)*, 3 vols. (to date). Dordrecht, Springer; cited by volume:page number.
- Guttenplan, Samuel, ed., 1995. *A Companion to the Philosophy of Mind*. Oxford, Blackwell.
- Guyer, Paul, 1987. *Kant and the Claims of Knowledge*. Cambridge, Cambridge University Press.
- , 1989. 'Psychology and the Transcendental Deduction'. In: E. Förster, ed., *Kant's Transcendental Deductions* (Stanford, Stanford University Press), 47–68.
- , 1992. 'The Transcendental Deduction of the Categories'. In: *idem.*, ed., *The Cambridge Companion to Kant* (Cambridge, Cambridge University Press), 123–160.
- , 1994. Review of Arthur Melnick (1989), *Space, Time and Thought in Kant*. *Kant-Studien* 85:477–482.
- Haack, Susan, 1993. *Evidence and Inquiry*. Oxford, Blackwell.
- Haag, Johannes, 2007. *Erfahrung und Gegenstand*. Frankfurt am Main, Klostermann.
- Hall, Bryan, 2006. 'A Reconstruction of Kant's Ether Deduction in *Übergang* 11'. *British Journal for the History of Philosophy* 14.4:719–746.
- , 2009. 'Effecting a Transition: How to Fill the Gap in Kant's System of Critical Philosophy'. *Kant-Studien* 100.2:187–211.
- Hanna, Robert, 2001. *Kant and the Foundations of Analytic Philosophy*. Oxford, The Clarendon Press.
- Hare, R. M., 1960. 'Philosophical Discoveries'. *Mind* 69.274:145–162.
- Harper, William, 1984a. 'Kant's Empirical Realism and the Distinction between Subjective and Objective Succession'. In: R. Meerbote & W. Harper, eds., *Kant on Causality, Freedom, and Objectivity* (Minneapolis, University of Minnesota Press), 108–137.
- , 1984b. 'Kant on Space, Empirical Realism, and the Foundations of Geometry'. *Topoi* 3.2:143–161.
- , 2007. 'Comments on Westphal'. *Dialogue: Canadian Journal of Philosophy/Revue canadienne de philosophie* 46.4:729–736; DOI: <http://dx.doi.org/10.1017/S0012217300002201>.
- , 2011. *Isaac Newton's Scientific Method: Turning Data into Evidence about Gravity and Cosmology*. New York, Oxford University Press.
- Hatfield, Gary, 2003. *Descartes and the Meditations*. London, Routledge.
- Hay, William, 1986. 'Lewis's Relation to Logical Empiricism'. In: P.A. Schilpp, ed., *The Philosophy of C. I. Lewis* (LaSalle, Ill., Open Court), 309–327.
- Hegel, G.W.F. (1968–), H. Buchner & O. Pöggeler (eds.), *Gesammelte Werke*. Published by the Rheinisch-Westfälischen Akademie der Wissenschaften in association with the Deutsche Forschungsgemeinschaft. Hamburg: Meiner. Cited parenthetically as 'GW' by volume: page number.
- , 1807. *Phänomenologie des Geistes*. Bamberg & Würzburg, Goephard; critical ed. by W. Bonsiepen & R. Heede, in: GW 9; cited as 'PhdG'.
- , 2018. *The Phenomenology of Spirit*, T. Pinkard, tr. Cambridge, Cambridge University Press; cited by paragraph (§) numbers correctly provided by the translator corresponding to Hegel (1807)/GW 9.
- Heidegger, Martin, 1912. "Das Realitätsproblem in der modernen Philosophie". *Philosophisches Jahrbuch der Görresgesellschaft* 25:353–363; rpt. in: *idem.*,

- Martin Heidegger *Gesamtausgabe* (Frankfurt am Main: Klostermann, 1978), 1:1–15; tr. by P. Bossert & J. van Buren in: J. van Buren, ed., *Martin Heidegger: Supplements: from the Earliest Essays to Being and Time and Beyond* (Albany, NY: SUNY Press, 2002), 39–48, 184–6.
- , 1923. *Ontologie (Hermeneutik der Faktizität)*. Freiburg lectures, summer term, K. Bröcker-Oltmanns, ed., in: *idem.*, *Gesamtausgabe* (Frankfurt am Main: Klostermann, 1988), vol. 63; english tr. in: *idem.* (1998).
- , 1927. *Sein und Zeit*. Tübingen, Niemeyer; 7th ed. 1953.
- , 1935–36. *Die Frage nach dem Ding. Zu Kants Lehre von den transzendenten Grundstätzen*. Tübingen: Niemeyer, 1962; in: *idem.*, *Gesamtausgabe* (Frankfurt am Main: Klostermann, 1984), vol. 41.
- , 1998. J. van Buren, tr., *Ontology – The Hermeneutics of Facticity*. Bloomington, Indiana University Press.
- Herman, Barbara, 2007. *Moral Literacy*. Cambridge, Mass., Harvard University Press.
- Hempel, Carl G., 1935. ‘On the Logical Positivists’ Theory of Truth’. *Analysis* 2.4:50–59.
- , 1965. *Aspects of Scientific Explanation and Other Essays in the Philosophy of Science*. New York, Free Press.
- , 1988. ‘Provisos: A Problem Concerning the Inferential Function of Scientific Theories’. In: A. Grünbaum & W. Salmon, eds., *The Limitations of Deductivism* (Pittsburgh, University of Pittsburgh Press), 19–36.
- Horgan, Terry, and John Tienson, 2002, ‘The Intentionality of Phenomenology and the Phenomenology of Intentionality’. In: D. Chalmers, ed., *Philosophy of Mind: Classical and Contemporary Readings* (Oxford, Oxford University Press), 520–533.
- , and George Graham, 2004. ‘Phenomenal Intentionality and the Brain in a Vat’. In: R. Schanz, ed., *The Externalist Challenge* (Berlin, de Gruyter), 297–318.
- Horgan, Terry, 2011. ‘The Phenomenology of Agency and the Libet Results’. In: B. Libet, W. Sinnott-Armstrong & L. Nadel, eds., *Conscious Will and Responsibility* (Oxford, Oxford University Press), 159–172.
- Horst, Steven, 2011. *Laws, Mind, and Free Will*. Cambridge, Mass., MIT Press.
- Howell, Robert, 1992. *Kant’s Transcendental Deduction*. Dordrecht, Kluwer.
- Huggett, Nick, George E. Smith, David Marshall Miller and William Harper, 2013. ‘On Newton’s method’. *Metascience*; DOI: 10.1007/s11016–013–9745-y.
- Hume, David., 1739–40. *A Treatise of Human Nature*. Critical edition by D.F. Norton & M.J. Norton (Oxford: Oxford University Press: 2000).
- , 1748. *An Enquiry Concerning Human Understanding*. Critical edition by T. Beauchamp (Oxford: The Clarendon Press: 1999).
- Husserl, Edmund, 1901. *Logische Untersuchungen II*. Halle, Niemeyer.
- , 1902–03. E. Schuhmann, ed., *Allgemeine Erkenntnistheorie. Vorlesung 1902–03*. Dordrecht: Springer, 2001.
- , 1927–28. ‘Phenomenology’. Complete German original (4th draft: ‘D’) in: *Husserliana IX* (= *Gesammelte Werke 9*; Berlin: Springer, 1968), 277–301; tr. R. Palmer in: T. Sheehan & R. Palmer, eds., *idem.*, *Psychological and Transcendental Phenomenology and the Confrontation with Heidegger (1927–1931)* (Berlin: Springer, 1997), 159–179.
- , 1929. *Formale und transzendente Logik*. Halle, Niemeyer.

- Hüttemann, Andreas, 1997. *Idealisierung und das Ziel der Physik. Eine Untersuchung zum Realismus, Empirismus und Konstruktivismus in der Wissenschaftstheorie*. Berlin, de Gruyter.
- Hyman, John, 2003. 'The Evidence of our Senses'. In H.J. Glock, ed., *Strawson and Kant* (Oxford, The Clarendon Press), 235–253.
- İnan, İlhan, 2018. 'Curiosity, Truth, and Knowledge'. In: İ. İnan, L. Watson, D. Whitcomb & S. Yiğit, eds., *The Moral Psychology of Curiosity* (London & New York, Rowman & Littlefield), 11–34.
- , 2021. *Truth as Reference*. (In preparation)
- Janiak, Andrew, 2007. 'Newton and the Reality of Force'. *Journal of the History of Philosophy* 45.1:127–147.
- Kannisto, Tony, 2010. 'Three Problems in Westphal's Transcendental Proof of Realism'. *Kant-Studien* 101.2:227–246
- Kant, Immanuel, 1781. *Kritik der reinen Vernunft*, 1st ed. Riga, Hartknoch; rpt. in: *idem.* (1998a), (2009).
- , 1785. *Grundlegung der Metaphysik der Sitten*, GS 4:387–463; *Groundwork of the Metaphysics of Morals* (Gr).
- , 1786. "Was heißt es, sich im Denken zu Orientieren?" GS 8:133–147; 'What is Orientation in Thinking?', cited as 'DO'.
- , 1786. *Metaphysische Anfangsgründe der Naturwissenschaft*. GS 4:456–566, cited as 'MAdN'.
- , 1787. *Kritik der reinen Vernunft*, 2nd rev. ed. Riga, Hartknoch; rpt. in: *idem.* (1998a), (2009).
- , 1788. *Kritik der praktischen Vernunft*, GS 5:3–163; *Critique of Practical Reason*, cited as 'KprV'.
- , 1790. *Kritik der Urteilskraft*, GS 5:171–485; *Critique of Judgment*, cited as 'KdU'.
- , 1795. "Zum ewigen Frieden", 2nd rev. ed. 1796; GS 8:343–386; 'Perpetual Peace', cited as 'ZeF'.
- , 1798. *Die Metaphysik der Sitten*, GS 6:203–493; *The Metaphysics of Morals*, cited as 'MdS'.
- , 1902–. *Kants Gesammelte Schriften*. Königlich Preussische, now Berlin-Brandenburgische Akademie der Wissenschaften. Berlin, Reimer, now de Gruyter.
- , 1995–2016. P. Guyer & A. Wood, eds.-in-chief, *The Cambridge Edition of the Works of Immanuel Kant in Translation*, 16 vols. Cambridge, Cambridge University Press.
- , 1998a. J. Timmermann, ed., *Kritik der reinen Vernunft*. Hamburg, Meiner.
- , 1998b. P. Guyer & A. Wood, trs., *Critique of Pure Reason*. Cambridge, Cambridge University Press.
- , 2000. *Critique of the Power of Judgment*. P. Guyer, ed., P. Guyer & E. Matthews, trs. Cambridge, Cambridge University Press.
- , 2009. K. Worm & S. Boeck, eds., *Kant im Kontext III – Komplettausgabe*, 2nd ed.; release (XP/Vista) 6/2009. Berlin, InfoSoftWare.
- Kaplan, David, 1975. 'How to Russell a Frege-Church'. *The Journal of Philosophy* 72.19:716–729.
- , 1989. 'Demonstratives: An Essay on the Semantics, Logic, Metaphysics and Epistemology of Demonstratives and other Indexicals'. In: J. Almog,

- J. Perry & H. Wettstein, eds., *Themes from Kaplan* (New York & Oxford, Oxford University Press), 481–563.
- Kaufmann, Matthias, 1994. *Begriffe, Sätze, Dinge. Referenz und Wahrheit bei Wilhelm von Ockham*. Leiden, New York & Köln, Brill.
- Keil, Geert, 1993. *Kritik des Naturalismus*. Berlin, de Gruyter.
- Keller, Pierre, 1998. *Kant and the Demands of Self-Consciousness*. Cambridge, Cambridge University Press.
- Kern, Iso, 1964. *Husserl und Kant. Eine Untersuchung über Husserls Verhältnis zu Kant und zum Neukantianismus*. Den Haag, Nijhoff.
- King, Peter, 2007. ‘Why Isn’t the Mind-Body Problem Mediaeval?’ In: H. Lagerlund, ed., *Forming the Mind: Conceptions of Body and Soul in Late Medieval and Early Modern Philosophy* (Berlin: Springer), 187–205.
- Kisiel, Theodore, 1980. ‘Ars Inveniendi: A Classical Source for Contemporary Philosophy of Science’. *Revue Internationale de Philosophie* 131–132: 130–154.
- Kitcher, Patricia, 1990. *Kant’s Transcendental Psychology*. Oxford, Oxford University Press.
- , 2011. *Kant’s Thinker*. New York, Oxford University Press.
- , 2013. ‘Kant versus the Asymmetry Dogma’. *Kant Yearbook* 5:51–77.
- Kitcher, Philip, 1986. ‘Projecting the Order of Nature’. In: R. Butts, ed., *Kant’s Philosophy of Physical Science* (Dordrecht, Reidel), 201–235.
- , 1992. ‘The Naturalists Return’. *The Philosophical Review* 101.1:53–114.
- Kneale, William, and Martha Kneale, 1971. *The Development of Logic*. Oxford, The Clarendon Press.
- Körner, Stephen, 1966. ‘Zur Kantischen Begründung der Mathematik und der Naturwissenschaften’. *Kant-Studien* 56.3/4:463–473.
- , 1969. ‘The Impossibility of Transcendental Deductions’. In: L.W. Beck, ed., *Kant Studies Today* (LaSalle, Ill., Open Court), 230–244.
- Kriegel, Uriah, 2013. ‘The Phenomenal Intentionality Research Program’. In: *idem.*, ed., *Phenomenal Intentionality: New Essays* (Oxford, Oxford University Press), 1–26.
- Kornblith, Hilary, 2002. *Knowledge and its Place in Nature*. Oxford, The Clarendon Press.
- Kripke, Saul, 1980. *Naming and Necessity*, 2nd rev. ed. Oxford, Basil Blackwell.
- Kuhn, Thomas, 1996. *The Structure of Scientific Revolutions*, 3rd ed. Chicago, Chicago University Press.
- Kyburg, Henry Jr., 1988. ‘The Justification of Deduction in Science’. In: A. Grünbaum & W. Salmon, eds., *The Limitations of Deductivism* (Pittsburgh, University of Pittsburgh Press), 61–94.
- Ladyman, James, 2004. ‘Constructive Empiricism and Modal Metaphysics: A Reply to Monton and van Fraassen’. *British Journal for Philosophy of Science* 55:755–765.
- , Don Ross, Don Spurrett & John Collier, 2009. *Every Thing Must Go: Metaphysics Naturalized*. Oxford, Oxford University Press.
- Lærke, Mogens, Justin E.H. Smith and Eric Schliesser, eds., 2013. *Philosophy and its History: Aims and Methods in the Study of Early Modern Philosophy*. Oxford, Oxford University Press.
- Laplace, Pierre Simon de, 1820. *Theorie analytique des probabilités* (Paris, V. Courcier); rpt. in: *Oeuvres de LaPlace* (Paris: Imprimerie Royale, 1847), vol. 7.

- Leibniz, Gottfried Wilhelm von, ca. 1705. *Nouveaux Essais sur L'Entendement Humain*. Paris: Flammarion, ca. 1921.
- , 1981. P. Remnant & J. Bennett, eds. & trs., *New Essays on Human Understanding*. Cambridge, Cambridge University Press.
- Lenzen, Wolfgang, 1998. "Zombies, Zimbos und das »schwierige Problem« des Bewußtseins". In: F. Esken & H.-D. Heckmann, eds., *Beußtsein und Repräsentation* (Paderborn, Schöningh), 255–281.
- Lewis, Clarence Irving (C.I.), 1929. *Mind and the World Order*. New York, Charles Scribner's Sons; rpt. with revisions, New York: Dover, 1956.
- , 1930. 'Logic and Pragmatism'. In: G.P. Adams & W.P. Montague, eds., *Contemporary American Philosophy* (New York, Macmillan), 31–50; rpt. in: *idem*. (1970), 3–19.
- , 1970. J. D. Goheen & J. L. Mothershead, Jr., eds., *Collected Papers of Clarence Irving Lewis*. Stanford, Stanford University Press.
- , and Cooper Langford, 1932. *Symbolic Logic*, 2nd ed. Toronto, General Publishing Co., London, Constable & Co.; rpt. New York: Dover, 1959.
- Lewis, David, 1973. *Counterfactuals*. Oxford, Blackwell.
- Lighthill, Sir James, 1986. 'The recently recognized failure of predictability in Newtonian dynamics'. *Proceedings of the Royal Society of London A* 407:33–55.
- Lipps, Theodore, 1901. *Das Selbstbewusstsein: Empfindung und Gefühl*. Wiesbaden, Bergmann.
- , 1912. *Grundzüge der Logik*. Leipzig, Voss.
- , 1913. *Psychologische Untersuchungen*, 2 vols. Leipzig, Engelmann.
- Loar, Brian, 2003. 'Phenomenal Intentionality as the Basis of Mental Content'. In: M. Hahn & B. Ramberg, eds., *Reflections and Replies: Essays on the Philosophy of Tyler Burge* (Cambridge, Mass., MIT Press), 229–257.
- Locke, John, 1975. *An Essay concerning Human Understanding*, P.H. Nidditch, ed. Oxford, The Clarendon Press.
- Longley, John, 2006. 'On the Calculating Power of LaPlace's Demon (Part I)'. In: A. Beckmann, U. Berger, B. Lowe & J.V. Tucker, eds., *Logical Approaches to Computational Barriers: Second Conference on Computability in Europe* (CiE 2006, Swansea; University of Wales Swansea Report Series, Nr. CSR 7–2006), 193–205; rev. full version: <http://homepages.inf.ed.ac.uk/jrl/Research/laplace1.pdf>.
- Longuenesse, Béatrice, 1998. *Kant and the Capacity to Judge*. Princeton, Princeton University Press.
- López-Astorga, Miguel, 2014. 'The Mental Logic Theory and De Morgan's Laws'. *International Journal of Humanities and Social Science* (New York, Center for Promoting Ideas, www.ijhssnet.com) 4.11.1:24–28.
- , 2016. 'Does Aristotelian Logic Describe Human Reasoning? Valid Syllogisms and Canonical Models'. *Khazar Journal of Humanities and Social Sciences* 19.2:5–27.
- , 2017. 'Are the Aristotelian Conversion Rules Easy for Human Thought?' *SATS – Northern European Journal of Philosophy* 18.2:115–124.
- Macbeth, Danielle, 2005. *Frege's Logic*. Cambridge, Mass., Harvard University Press.
- Mach, Ernst, 1933. *Die Mechanik historisch-kritisch Dargelegt*, 9th ed. Leipzig. Rpt.: Darmstadt: Wissenschaftliches Buchgesellschaft, 1973.

- , 1893/1960. *The Science of Mechanics on Historical Principles*. LaSalle, Ill., Open Court.
- Machamer, Peter, and J. E. McGuire, 2009. *Descartes's Changing Mind*. Princeton, Princeton University Press.
- Mahaffey, John P., and John H. Bernard, 1889. *Kant's Critical Philosophy for English Readers*, 2 vols. London & New York, Macmillan.
- Maier, Anneliese, 1940. *Die Impetustheorie der Scholastik*. Wien, Schroll.
- , 1946. «Nouvelles questions de Siger de Brabant sur la physique d'Aristote». *Revue philosophique de Louvain* 44:497–513; rpt. in: *idem.* (1976), 2:171–206.
- , 1949. *Die Vorläufer Galileis im 14. Jahrhundert. Studien zur Naturphilosophie der Spätromantik*. Roma, Edizioni de «Storia e Letteratura».
- , 1964, 1967, 1977. *Ausgehendes Mittelalter. Gesammelte Aufsätze zur Geistesgeschichte des 14. Jahrhunderts*, 3 vols. Roma, Edizioni de «Storia e Letteratura».
- Maimon, Salomon, 1794. *Gesammelte Werke*, 7 vols. Berlin, Nicolai; V. Verra, ed., rpt. Hildesheim: Olms, 1965.
- Matson, Wallace, 1966. 'Why Isn't the Mind-Body Problem Ancient?' In: P. Feysabend & G. Maxwell, eds., *Mind, Matter, and Method* (Minneapolis: University of Minnesota Press, 1966), 92–102.
- Maxwell, Grover, 1975. 'Induction and Empiricism: A Bayesian-Frequentist Alternative'. In: G. Maxwell & R.M. Anderson, Jr., eds., *Induction, Probability, and Confirmation. Minnesota Studies in the Philosophy of Science* 6 (Minneapolis, University of Minnesota Press), 106–165.
- McCarty, Richard, 2009. *Kant's Theory of Action*. Oxford, Oxford University Press.
- McDowell, John, 1994. *Mind and World*. Cambridge, Mass., Harvard University Press.
- , 1998c. 'Having the World in View: Sellars, Kant, and Intentionality', *Journal of Philosophy* 95.9: 431–491; rpt. in: *idem.* (2009), 3–65.
- , 2000. 'Experiencing the World'. In: M. Willaschek, ed., *Reason and Nature: Lecture and Colloquium in Münster 1999* (Münster, LIT Verlag), 3–18.
- , 2008. 'Responses'. In: J. Lindgaard, ed., *John McDowell: Experience, Norm and Nature* (Oxford, Blackwell), 200–267.
- , 2009. *Having the World in View: Essays on Kant, Hegel, and Sellars*. Cambridge, Mass., Harvard University Press.
- , 2010. 'Tyler Burge on Disjunctivism'. *Philosophical Explorations* 13.3: 243–255.
- , 2013. 'Tyler Burge on Disjunctivism II'. *Philosophical Explorations* 16.3: 2593–279.
- , 2016. 'A Sellarsian Blind Spot'. In: J. O'Shea, ed., *Sellars and his Legacy* (Oxford, Oxford University Press), 100–116.
- Meerbote, Ralph, 1991. 'Kant's Functionalism'. In: J.-C. Smith, ed., *Historical Foundations of Cognitive Science* (Dordrecht, Kluwer), 161–187.
- Meinong, Alexius, 1877. "Hume-Studien I: Zur Geschichte und Kritik des modernen Nominalismus". *Sitzungsberichte der philosophisch-historischen Classe der kaiserlichen Akademie der Wissenschaften zu Wien* 78:185–260; rpt. in: *idem. Gesamtausgabe* (Graz: Akademische Druck- & Verlagsanstalt, 1969–), 1:1–76.

- , 1882. “Hume-Studien II: Zur Relationstheorie”. *Sitzungsberichte der philosophisch-historischen Classe der kaiserlichen Akademie der Wissenschaften zu Wien* 101:573–752; rpt. in: *idem. Gesamtausgabe* (Graz: Akademische Druck- & Verlagsanstalt, 1969–), 2:1–183.
- Melnick, Arthur, 1973. *Kant’s Analogies of Experience*. Chicago, University of Chicago Press.
- , 1989. *Space, Time and Thought in Kant*. Dordrecht, Kluwer.
- , 2004. *Themes in Kant’s Metaphysics and Ethics*. Washington, DC, Catholic University of America Press.
- , 2006. ‘The Second Analogy’. In: G. Bird, ed., *A Companion to Kant* (London, Blackwell), 169–181.
- Miller, Alice, 1983. *For your own Good: Hidden Cruelty in Child-rearing and the Roots of Violence*. New York, Farrar, Straus, Giroux.
- , 1984. *Thou Shalt not be Aware: Society’s Betrayal of the Child*. New York, Farrar, Straus, Giroux.
- Millikan, Ruth Garrett. 2004. *Varieties of Meaning: The 2002 Jean Nicod Lectures*. Cambridge, Mass., MIT Press.
- Milmed, Bella Kussy, 1961. *Kant and Current Philosophical Issues: Some Modern Developments of his Theory of Knowledge*. New York, New York University Press.
- , 1969. ‘“Possible Experience” and Recent Interpretations of Kant’. In L.W. Beck, ed., *Kant Studies Today* (LaSalle, Ill., Open Court), 301–21.
- Moran, Dermot, 2014. ‘Descartes on the Formal Reality, Objective Reality, and Material Falsity of Ideas: Realism through Constructivism?’ In: K.R. Westphal, ed., *Realism, Science & Pragmatism* (New York & London, Routledge), 67–92.
- Motta, Giuseppe, Denis Schulting & Udo Thiel, eds., 2020. *Kants transzendente Deduktion der Kategorien: Neue Interpretationen/Kant’s Transcendental Deduction of the Categories: New Interpretations*. Berlin, de Gruyter.
- Murphey, Murray G., 2005. *C.I. Lewis: the Last Great Pragmatist*. Albany, SUNY Press.
- , 2012. *The Development of Quine’s Philosophy*. Berlin, Springer.
- Nadler, Steven, ed., 2002. *A Companion to Early Modern Philosophy*. Oxford, Blackwell.
- Nagel, Ernest, 1961. *The Structure of Science*. New York, Harcourt, Brace, & World.
- Nagel, Thomas, 1974. ‘What’s it like to be a Bat?’ *The Philosophical Review* 83.4:435–450.
- Natterer, Paul, 2003. *Systematischer Kommentar zur Kritik der reinen Vernunft: Interdisziplinäre Bilanz der Kantforschung seit 1945*, 2 vols. Berlin, de Gruyter.
- Newton, Isaac, 1726. *Philosophiæ naturalis principia mathematica*, 3. rev. ed. London; rpt. Glasgow: Maclehose, 1871.
- , 1952. *Opticks*. New York, Dover; rev. ed. 1979.
- , 1999. *The Principia: Mathematical Principles of Natural Philosophy*. I. Bernard Cohen & Anne Whitman, trs., with assistance from Julia Budenz. Berkeley, University of California Press.
- Nietzsche, Friedrich, 1882. *Die fröhliche Wissenschaft*, 2nd ed. 1887. Leipzig, Fritzsche; rpt. in: *KGA* 5.2:343–651; designated ‘FW’, cited by § number.

- , 1887. *Zur Genealogie der Moral. Eine Streitschrift*. Leipzig, Naumann; rpt. in: *KGA* 6,2:247–412; designated ‘GM’, cited by Part:§ number.
- , 1888–9. *Ecce Homo. Wie man wird, was man ist*. Leipzig: Naumann, 1906; rpt. in: *KGA* 6,3:255–374; designated ‘EH’, cited by Part:§ number.
- , 1967–. G. Colli & M. Montinari, eds., *Werke. Kritische Gesamtausgabe*. Berlin, de Gruyter; designated ‘KGA’.
- , 1998. M. Clark & A. Swensen, trs., *On the Genealogy of Morality*. Cambridge, Mass., Hackett Publishing Co.
- Niiniluoto, Ilkka, Matti Sintonen and Jan Wolenski, eds., 2004. *Handbook of Epistemology*. Dordrecht, Springer.
- Okruhlik, Kathleen, 2009. ‘Critical Notice, *Scientific Representation: Paradoxes of Perspective*’. *Canadian Journal of Philosophy* 39.4:671–694.
- O’Neill, Onora, 1992. ‘Vindicating Reason’. In: P. Guyer, ed., *The Cambridge Companion to Kant* (Cambridge, Cambridge University Press), 280–308.
- O’Shea, James R., 2007. *Wilfrid Sellars*. Cambridge, Polity.
- Ospald, Peter, 2010. ‘Michael Friedmans Behandlung des Unterschieds zwischen Arithmetik und Algebra bei Kant in *Kant and the Exact Sciences*’. *Kant-Studien* 101:75–88.
- Parrini, Paolo, ed., 1994. *Kant and Contemporary Epistemology*. Dordrecht, Kluwer.
- , 2009. ‘Carnap’s Relativized A Priori and Ontology’. In: M. Bitbol, P. Kerszberg & J. Petitot, eds., *Constituting Objectivity: Transcendental Perspectives on Modern Physics* (Dordrecht, Springer), 127–143.
- , 2010. ‘Epistemological Conventionalism: Beyond the Geochronometrical Problems’. In: M. DeCaro & R. Egidi, eds., *The Architecture of Knowledge: Epistemology, Agency, and Science* (Roma, Carocci), 191–212.
- Parsons, Terence, 2014. *Articulating Medieval Logic*. Oxford, Oxford University Press.
- , 2017. ‘The Traditional Square of Opposition’. In: E.N. Zalta, ed., *The Stanford Encyclopedia of Philosophy*; URL: <<https://plato.stanford.edu/archives/sum2015/entries/square/>>.
- Paton, H.J., 1936. *Kant’s Metaphysic of Experience*, 2 vols. London, George Allen & Unwin; New York, Humanities.
- Patzig, Günther, 1969. *Die aristotelische Syllogistik: logisch-philologische Untersuchungen über das Buch A der “Ersten Analytiken”*, 3rd rev. ed. Göttingen, Vandenhoeck & Ruprecht.
- , 1968. *Aristotle’s Theory of the Syllogism. A Logico-philosophical Study of Book A of the Prior Analytics*, tr. J. Barnes. Dordrecht, Reidel. (Translation of *idem.*, 1969.)
- Perry, John, 1979. ‘The Problem of the Essential Indexical’. *Nous* 13:3–21.
- , 1993. *The Problem of the Essential Indexical and Other Essays*. New York & Oxford, Oxford University Press.
- Piché, David, 1999. *La Condamnation parisienne de 1277*. Paris, Vrin.
- Pinker, Stephen, 1997. *How the Mind Works*. New York, Norton.
- Prinz, Jesse, 2002. *Furnishing the Mind: Concepts and their Perceptual Basis*. Cambridge, Mass., MIT/Bradford Books.
- , 2005. ‘The Return of Concept Empiricism’. In: H. Cohen & C. LeFebvre, eds., *Handbook of Categorisation in Cognitive Science* (Amsterdam, Elsevier), 679–695.

- , 2010. 'Can Concept Empiricism Forestall Eliminativism?' *Mind & Language* 25,5:612–621.
- Pollock, Constantine, 2001. "Metaphysische Anfangsgründe der Naturwissenschaft". *Ein kritischer Kommentar*. Hamburg, Meiner.
- Popkin, Richard, 1964. *The History of Scepticism from Erasmus to Descartes*. New York, Humanities; rpt. New York: Harper & Row, 1968.
- Quante, Michael, 1998a. "Der Ort des Geistes. Neuere Beiträge zur Philosophie des Geistes (I)". *Zeitschrift für Philosophische Forschung* 52.2:292–313.
- , 1998b. "Die Enträtselung des Bewußtseins? Neuere Beiträge zur Philosophie des Geistes (II)". *Zeitschrift für Philosophische Forschung* 52.4:619–633.
- Quine, W.V.O., 1953. *From a Logical Point of View*. New York, Harper & Row.
- , 1960. *Word and Object*. Cambridge, Mass., MIT Press.
- , 1969a. *Ontological Relativity and other Essays*. New York, Columbia University Press.
- , 1969b. 'Epistemology Naturalized'. In: *idem.*, *Ontological Relativity and Other Essays* (New York, Columbia University Press), 69–90.
- , 1990. *The Pursuit of Truth*. Cambridge, Mass., Harvard University Press.
- , 1995. *From Stimulus to Science*. Cambridge, Mass., Harvard University Press.
- Radder, Hans, 2006. *The World Observed/The World Conceived*. Pittsburgh, University of Pittsburgh Press.
- , and Gerben Meynen, 2013. 'Does the brain "initiate" freely willed processes? A philosophy of science critique of Libet-type experiments & their interpretation'. *Theory & Psychology* 23.1:3–21; online: 17.10.2012, DOI: 10.1177/0959354312460926.
- Redhead, Michael, 1998. 'Relativity theory, philosophical significance of'. In E. Craig, ed., *Routledge Encyclopedia of Philosophy* (London, Routledge), <http://www.rep.routledge.com/article/Q090SECT3>.
- Reichenbach, Hans, 1920. *Relativitätstheorie und Erkenntnis apriori*. Berlin, Julius Springer.
- , 1922. *Der gegenwärtige Stand der Relativitätsdiskussion: eine kritische Untersuchung*. Tübingen, Mohr (Paul Siebeck); also: *Logos* 10.3:316–378.
- Reisch, Gregor, 1504. *Margarita philosophica*. Schott; rpt. Basilea: Petrus Resch, 1535, including complete index and pagination.
- Robinson, Johnathan, 1977. *Duty and Hypocrisy in Hegel's Phenomenology of Mind*. Toronto, University of Toronto Press.
- Rorty, Richard, 1970. 'Strawson's Objectivity Argument'. *Review of Metaphysics* 24:207–44.
- , 1971. 'Verificationism and Transcendental Arguments'. *Nous* 5:3–14.
- , 1986. 'Pragmatism, Davidson and Truth'. In: E. Lepore, ed., *Truth and Interpretation* (Oxford, Blackwell), 333–355.
- Rosenberg, Jay, 1980. *One World and Our Knowledge of It*. Dordrecht, Reidel.
- , 'Transcendental Arguments Revisited'. *Journal of Philosophy* 75.18: 611–624.
- , 1979. 'Transcendental Arguments and Pragmatic Epistemology'. In: Bieri *et. al.* (1979), 245–262.
- , 1986. *The Thinking Self*. Philadelphia, Temple University Press.
- , 2002. *Thinking About Knowing*. Oxford, Oxford University Press.

- , 2005. *Accessing Kant: A Relaxed Introduction to the Critique of Pure Reason*. New York, Oxford University Press.
- , 2007a. *Wilfrid Sellars: Fusing the Images*. Oxford, Oxford University Press.
- , 2007b. 'Divergent Intuitions: McDowell's Kant and Sellars' Kant'. In: *idem.*, *Wilfrid Sellars: Fusing the Images* (Oxford, Oxford University Press), 266–290.
- Rosenthal, Sandra B., *The Pragmatic A Priori: a Study in the Epistemology of C.I. Lewis*. St. Lewis: W. H. Green, 1976.
- Roskies, Adina, guest ed., 1999. 'The Binding Problem'. *Neuron* 24.
- Rouse, Joseph, 2002. *How Scientific Practices Matter*. Chicago, University of Chicago Press.
- Russell, Bertrand, 1905. 'On Denoting'. *Mind* 14.4:479–493; CP 3:415–427.
- , 1911. 'Knowledge by Acquaintance and Knowledge by Description'. *Proceedings of the Aristotelian Society*, ns 11 (1910–11):108–128; CP 6:147–82.
- , 1913. 'Theory of Knowledge: The 1913 Manuscript'. CP 7. (Part I: 'On the Nature of Acquaintance'.)
- , 1919. *Introduction to Mathematical Philosophy*. London, George Allen & Unwin; New York, Macmillan.
- , 1922. 'Dr. Schiller's Analysis of *The Analysis of Mind*'. *Journal of Philosophy* 19.24:645–651; CP 9:37–44.
- , 1956. *Portraits from Memory*. London, George Allen & Unwin.
- , 1994. J. Passmore, gen. ed., *The Collected Papers of Bertrand Russell*. London, Routledge.
- Rutherford, Donald, ed., 2005. *The Cambridge Companion to Early Modern Philosophy*. Cambridge, Cambridge University Press.
- Ryder, Daniel, Justine Kingsbury, Kenneth Williford, eds., 2012. *Millikan and Her Critics*. New York, John Wiley & Sons.
- Salmon, C.V., 1929. *The Central Problem of David Hume's Philosophy. An Essay towards a Phenomenological Interpretation of the First Book of the Treatise of Human Nature*. *Jahrbuch für Philosophie und phänomenologische Forschung* 10:299–449; also published separately: Halle, Niemeyer.
- Salmon, Wesley, 1989. *Four Decades of Scientific Explanation*. Pittsburgh, University of Pittsburgh Press.
- Sandberg, Eric, 1989. 'Thinking Things in Themselves'. In: G. Funke & T. Seebohm, eds., *Proceedings of the Sixth International Kant Congress* (Lanham, Md.: University Press of America), 2.2:23–31.
- Sauer, Friedrich, 1926. *Über das Verhältnis der Husserlian Phänomenologie zu David Hume*. *Kant-Studien* 35.2 (1930):151–182; also published separately, Berlin: Pan-Verlag Kurt Metzner.
- Savigny, Ike von, 1991. 'Self-conscious Individual versus Social Self: The Rationale of Wittgenstein's Discussion of Rule Following'. *Philosophy and Phenomenological Research* 51:67–84.
- Scharff, Robert, 1995. *Comte after Positivism*. Cambridge, Cambridge University Press.
- , 2019. *Heidegger Becoming Phenomenological: Interpreting Husserl through Dilthey, 1916–1925*. New York & London, Rowman & Littlefield International.

- Schlesinger, George, 1975. 'Confirmation and Parsimony'. In: G. Maxwell & R. M. Anderson, Jr., eds., *Induction, Probability, and Confirmation*. *Minnesota Studies in the Philosophy of Science* 6 (Minneapolis, University of Minnesota Press), 324–342.
- Schlick, Moritz, 1918. *Allgemeine Erkenntnislehre*. Berlin, Springer.
- , 1930. "Gibt es ein materiales Apriori?" *Wissenschaftlicher Jahresbericht der Philosophischen Gesellschaft an der Universität zu Wien für das Vereinsjahr 1930/31*, rpt. in: *idem.*, *Gesammelte Aufsätze 1926–1936* (Wien: Gerold, 1938), 19–30.
- , 1935. 'Facts and Propositions'. *Analysis* 2.5:65–70.
- Schroeder, Severin, 2001. 'Private Language and Private Experience'. In: H.-J. Glock, ed., *Wittgenstein: A Critical Reader* (Oxford, Blackwell), 174–98.
- Schulging, Dennis, 2009. Review of Kenneth Westphal, *Kants Transcendental Proof of Realism*. *Kant-Studien* 100.3:382–385.
- Searle, John, 1983. *Intentionality: An Essay in the Philosophy of Mind*. Cambridge, Cambridge University Press.
- Secada, Jorge, 2004. *Cartesian Metaphysics: The Late Scholastic Origins of Modern Philosophy*. Cambridge, Cambridge University Press.
- Segal, Gabriel, 2000. *A Slim Book about Narrow Content*. Cambridge, Mass., MIT Press.
- Sellars, Wilfrid, 1963. *Science, Perception, and Reality*. London, Routledge & Kegan Paul.
- , 1968. *Science and Metaphysics: Variations on Kantian Themes*. London, Routledge & Kegan Paul.
- , 1978. 'The Role of Imagination in Kant's Theory of Experience'. In H.W. Johnstone, ed., *Categories: A Colloquium* (University Park, Pa, The Pennsylvania State University Press), 231–245; rpt. in: Sellars (2002b), 438–449; and in: Sellars (2007), 454–466.
- , 1981. 'Mental Events'. *Philosophical Studies* 39:325–45.
- , 2002a. P.V. Amaral, ed., *Kant and Pre-Kantian Themes*. Atascadero, Cal., Ridgeview Publishing Co.
- , 2002b. J.F. Sicha, ed., *Kant's Transcendental Metaphysics: Sellars' Cassirer Lectures and Other Essays*. Atascadero, Cal., Ridgeview Publishing Co.
- , 2007. K. Sharp & R. Brandom, eds., *In the Space of Reasons: Selected Essays of Wilfrid Sellars*. Cambridge, Mass.: Harvard University Press.
- Sextus Empiricus (1933), *Outlines of Pyrrhonism*, in: *Works*, 4 vols. Rev. R.G. Bury, tr. (Cambridge, Mass., Harvard University Press), vol. 1.
- Shea, William, and Mariano Artigas, 2003. *Galileo in Rome: The Rise and Fall of a Troublesome Genius*. Oxford, Oxford University Press.
- Sherover, Charles, 1971. *Heidegger, Kant and Time*. Bloomington, Indiana University Press.
- Smith, A.D., 2003. *Husserl and the Cartesian Meditations*. London, Routledge.
- Smith, George E., 2002a. 'The Methodology of the *Principia*'. In: I.B. Cohen & G. Smith, eds., *The Cambridge Companion to Newton* (Cambridge, Cambridge University Press), 138–173.
- , 2002b. 'From the Phenomenon of the Ellipse to an Inverse-Square Force: Why Not?' In: D. Malament, ed., *Reading Natural Philosophy: Essays in the History and Philosophy of Science and Mathematics* (LaSalle, Ill., Open Court), 31–70.

- , 2014. 'Closing the Loop: Testing Newtonian Gravity, Then and Now'. Z. Biener & E. Schliesser, eds., *Newton and Empiricism* (Oxford, Oxford University Press), 262–351.
- Smith, Kurt, 2015. *The Descartes Dictionary*. London, Bloomsbury.
- Smith, Norman Kemp, 1941. *The Philosophy of David Hume*. London, Macmillan.
- Sober, Elliot, 1975. *Simplicity*. Oxford, Oxford University Press.
- Sosa, Ernest, Jonathan Dancy and Matthias Steup, eds., 2010. *A Companion to Epistemology*, 2nd rev. ed. Oxford, Blackwell.
- Sosa, Ernest, 2001. 'G.E. Moore'. In: A.P. Martinich & D. Sosa, eds., *A Companion to Analytic Philosophy* (Oxford, Blackwell), 45–56.
- Sorell, Thomas, G.A.J. Rogers and Jill Kraye, eds., 2010. *Scientia in Early Modern Philosophy: Seventeenth-Century Thinkers on Demonstrative Knowledge from First Principles*. New York & Berlin, Springer.
- Spohn, Wolfgang, 2018. 'How Modalities Come into the World'. *Erkenntnis* 83:89–112.
- Stang, Nicholas, 2016. *Kant's Modal Metaphysics*. Oxford, Oxford University Press.
- Stein, Howard, 1967. 'Newtonian Space-Time'. *The Texas Quarterly* 10.3:174–200; rpt. in: R. Palter, ed., *The Annus Mirabilis of Sir Isaac Newton, 1666–1966* (Cambridge, Mass.: M.I.T. Press, 1970), 258–284.
- Stern, Robert, ed., 1999a. *Transcendental Arguments: Problems and Prospects*. Oxford, Oxford University Press.
- , 1999b. 'On Kant's Response to Hume: The Second Analogy as Transcendental Argument'. In: *idem*. (1999a), 47–66.
- , 2000. *Transcendental Arguments and Scepticism – Answering the Question of Justification*. Oxford, Oxford University Press.
- Strawson, Peter F., 1966. *The Bounds of Sense*. London, Methuen.
- , 1970. 'Imagination and Perception'. In: L. Foster & J.W. Swanson, eds., *Experience and Theory* (Amherst, University of Massachusetts Press; London, Duckworth), 31–54; rpt in: Strawson (1974), 45–65.
- , 1974. *Freedom and Resentment and Other Essays*. London, Methuen.
- , 1979. 'Perception and its Objects'. In: G.F. MacDonald, ed., *Perception and Identity* (Ithaca, NY, Cornell University Press), 41–60; rpt. in: Strawson (2011), 125–145.
- , 1985. *Scepticism and Naturalism*. London, Methuen.
- , 1989. 'Sensibility, Understanding, and the Doctrine of Synthesis: Comments on Henrich and Guyer'. In: E. Förster, ed., *Kant's Transcendental Deductions* (Stanford, Stanford University Press), 69–77; rpt. in: Strawson (2011), 157–165.
- , 1992. 'Echoes of Kant'. *Times Literary Supplement* 4657 (3 July 1992):12–13.
- , 1997a. *Entity and Identity – And other essays*. Oxford: Oxford University Press.
- , 1997b. 'Kant's New Foundations of Metaphysics'. Rpt. in: Strawson (1997a), 233–44.
- , 1997c. 'The Problem of Realism and the *A Priori*'. Rpt. in: Strawson (1997a), 246–51.

- , 2003. 'A bit of Intellectual Autobiography'. In: H.-J. Glock, ed., *Strawson and Kant* (Oxford, The Clarendon Press), 1–14.
- , 2011. *Philosophical Writings*, G. Strawson & M. Montague, eds. Oxford, Oxford University Press.
- Stroud, Barry, 1966. 'Wittgenstein and Logical Necessity'. Rpt. in: G. Pitcher, ed., *Wittgenstein: The Philosophical Investigations* (New York, Doubleday), 477–496.
- , 1977a. *Hume*. London, Routledge.
- , 1977b. 'Transcendental Arguments and "Epistemological Naturalism"'. *Philosophical Studies* 31: 105–115.
- , 1983. 'Kant and Skepticism'. In: M. Burnyeat, ed., *The Skeptical Tradition* (Berkeley, University of California Press), 413–434.
- , 1994a. 'Scepticism, "Externalism," and the Goal of Epistemology'. *Proceedings of the Aristotelian Society*, Suppl. 68:291–307.
- , 1994b. 'Kantian Argument, Conceptual Capacities, and Invulnerability'. In: P. Parrini, ed., *Kant and Contemporary Epistemology* (Dordrecht, Kluwer), 231–251.
- , 2017. 'Kant's "Transcendental Deduction"'. In: J. O'Shea, ed., *Kant's Critique of Pure Reason: A Critical Guide* (Cambridge: Cambridge University Press), 106–119.
- Sturm, Thomas, 2001. 'Kant on Empirical Psychology: How not to Investigate the Human Mind'. In: E. Watkins, ed., *Kant and the Sciences* (Oxford, Oxford University Press), 163–184.
- , 2009. *Kant und die Wissenschaften vom Menschen*. Paderborn, Mentis.
- Suppe, Frederick, ed., 1977. *The Structure of Scientific Theories*, 2nd rev. ed. Champaign-Urbana, Ill., University of Illinois Press.
- Tanney, Julia, 2013. *Rules, Reason and Self-Knowledge*. Cambridge, Mass., Harvard University Press.
- Tempier, Étienne, 1277. «Opinionones ducentae undeviginti Sigeri de Brabantia, Boetii de Dacia aliorumque, a Stephano episcopo Parisiensi de consilio doctorum Sacrae Scripturae condemnatae 1277». Paris; http://hiphi.ubbcluj.ro/fam/texte/tempier_opinionones_219.htm. (English tr.: *idem.*, 1963.)
- , 1963. 'Condemnation of 219 Propositions'. E.L. Fortin & P.D. O'Neill, trs., in: R. Lerner & M. Mahdi, eds., *Medieval Political Philosophy: A Sourcebook* (Ithaca, NY: Cornell University Press), 335–354.
- , 1999. Critical edition of Tempier (1277) in: Piché (1999), *op. cit.*
- Tetens, Johann N., 1777. *Philosophische Versuche über die menschliche Natur und ihre Entwicklung*. Leipzig, M.G. Weidmanns Erben & Reich; rpt.: W. Uebele, ed., Berlin: Reuther & Reichard, 1913.
- Teufel, Thomas, 2014. 'The Impossibility of a "Newton of the Blade of Grass" in Kant's Teleology'. In: J. Smith & O. Nachtomy, eds., *The Life Sciences in Early Modern Philosophy* (New York, Oxford University Press), 47–61.
- , forthcoming. 'Regulativity in Kant'.
- Tierney, Brian, 1972. *Origins of Papal Infallibility, 1150–1350*. Leiden, Brill.
- Toulmin, Stephen, 1949. 'A Defence of Synthetic Necessary Truth'. *Mind* NS 58.230:164–177.
- Travis, Charles, 2000. 'Taking Thought'. *Mind* 109.435:533–557.
- , 2000. *Unshadowed Thought: Representation in Thought and Language*. Cambridge, Mass., Harvard University Press.

- , 2005. 'A Sense of Occasion'. *The Philosophical Quarterly* 55.219: 286–314.
- , 2006. *Thought's Footing. A Theme in Wittgenstein's Investigations*. Oxford, The Clarendon Press.
- , 2008. *Occasion-Sensitivity: Selected Essays*. Oxford, Oxford University Press.
- , 2009. 'Aristotle's Condition'. In: Greenough & Pritchard (2009), 257–279.
- , 2013. *Perception: Essays After Frege*. Oxford, Oxford University Press.
- Turnbull, Robert, 1959. 'Empirical and A Priori Elements in Broad's Theory of Knowledge'. In: P.A. Schilpp, ed., *The Philosophy of C.D. Broad* (New York, Tudor), 197–231.
- Twardowski, Kasimir, 1894. *Zur Lehre vom Inhalt und Gegenstand der Vorstellungen. Eine psychologische Untersuchung*. Wien, Hölder; rpt. Wien: Philosophia, 1982.
- Unger, Peter, 2014. *Empty Ideas: A Critique of Analytic Philosophy*. Oxford, Oxford University Press.
- van Fraassen, Bastian C., 1980. *The Scientific Image*. Oxford, The Clarendon Press.
- , 2001. 'Constructive Empiricism Now'. *Philosophical Studies* 106: 151–170.
- , 2002. *The Empirical Stance*. New Haven, Yale University Press.
- , 2004a, 'Preçis of *The Empirical Stance*'. *Philosophical Studies* 121: 127–132.
- , 2004b. 'Replies to Discussion on *The Empirical Stance*'. *Philosophical Studies* 121.2:171–192.
- , 2006. 'Representation: The Problem for Structuralism'. *Philosophy of Science* 73.5:536–547.
- , 2007. 'Reply: From a View of Science to a New Empiricism'. In: Bradley Monton, ed., *Images of Empiricism: Essays on Science and Stances, with a Reply from Bas van Fraassen* (Oxford, Oxford University Press), 337–383.
- , 2008. *Scientific Representation: Paradoxes of Perspective*. Oxford, Oxford University Press.
- Wagner, Stephen, 2014. *Squaring the Circle in Descartes' Meditations: The Strong Validation of Reason*. Cambridge, Cambridge University Press.
- Waismann, Frederick, 1945. 'Verifiability'. *Proceedings of the Aristotelian Society*, sup. vol. 19:119–150.
- Watkins, Eric, 2005. *Kant and the Metaphysics of Causality*. New York, Cambridge University Press.
- Watson, John, 1881. *Kant and his English Critics. A Comparison of Critical and Empirical Philosophy*. Glasgow, Maclehoose; London & New York, Macmillan.
- Weizsäcker, C.F. von, 1971. 'Kant's "First Analogy of Experience" and Conservation Principles of Physics'. *Synthese* 23:75–95.
- Wellek, René, 1931. *Immanuel Kant in England: 1793–1838*. Princeton, Princeton University Press.
- Westphal, Kenneth R., 1984a. 'Was Nietzsche a Cognitivist?' *The Journal of the History of Philosophy* 26.3: 343–363. (Corrected version available on the author's website.)

- , 1984b. 'Nietzsche's Sting and the Possibility of Good Philology'. *International Studies in Philosophy* 16.2:71–90.
- , 1987–88. 'Sextus Empiricus *Contra* René Descartes'. *Philosophy Research Archives* 13:91–128.
- , 1989. *Hegel's Epistemological Realism*. Philosophical Studies Series, vol. 43. Dordrecht, Kluwer.
- , 1993. 'Hegel, Idealism, and Robert Pippin'. *International Philosophical Quarterly* 33.3:263–72.
- , 1997. 'Frederick L. Will's Pragmatic Realism: An Introduction'. In: Frederick L. Will, *Pragmatism and Realism* (Lanham, Md., Rowman & Littlefield), *xiii–lxi*.
- , 1998a. *Hegel, Hume und die Identität wahrnehmbarer Dinge*. Frankfurt a.M.: Klostermann.
- , 1998b. 'Buchdahl's "Phenomenological" View of Kant: A Critique'. *Kant-Studien* 89:335–52.
- , 1998c. 'Transcendental Reflections on Pragmatic Realism'. In: K.R. Westphal, ed., *Pragmatism, Reason, & Norms: A Realistic Assessment* (New York, Fordham University Press), 17–59.
- , 2000. 'Hegel's Internal Critique of Naïve Realism'. *Journal of Philosophical Research* 25:173–229.
- , 2001. 'Freedom and the Distinction between Phenomena and Noumena: Is Allison's view Methodological, Metaphysical, or Equivocal?' *Journal of Philosophical Research* 26:593–622.
- , 2002–03. "Analytischer Gehalt und zeitgenössische Bedeutung von Hegels Kritik des unmittelbaren Wissens". *Jahrbuch für Hegel-Forschungen* 8/9:129–43.
- , 2003a. *Hegel's Epistemology: A Philosophical Introduction to the Phenomenology of Spirit*. Cambridge, Mass., Hackett Publishing Co.
- , 2003b. 'Can Pragmatic Realists Argue Transcendentally?' In: J. Shook, ed., *Pragmatic Naturalism and Realism* (Buffalo, NY, Prometheus), 151–75.
- , 2003c. Review of B. Jeffrey Edwards (2000), *Substance, Force and the Possibility of Knowledge*. *Kant-Studien* 94.3:383–386.
- , 2004. *Kant's Transcendental Proof of Realism*. Cambridge, Cambridge University Press.
- , 2006. 'Science and the Philosophers'. In: H. Koskinen, S. Pihlström and R. Vilkkko, eds., *Science: A Challenge to Philosophy?* (Frankfurt am Main, Lang), 125–152.
- , 2007a. 'Kant's Anti-Cartesianism'. *Dialogue: Canadian Journal of Philosophy/Revue canadienne de philosophie* 46.4:709–715. (Precis of *idem.*, 2004).
- , 2007b. 'Proving Realism Transcendentally: Replies to Rolf George and William Harper'. *Dialogue: Canadian Journal of Philosophy/Revue canadienne de philosophie* 46.4:737–750.
- , 2008. 'Contemporary Epistemology: Kant, Hegel, McDowell'. In: J. Lindgaard, ed., *John McDowell: Experience, Norm and Nature* (Oxford: Blackwell, 2008), 124–151; rpt. from: *The European Journal of Philosophy* 14.2 (2006):274–302.

- , 2009. 'Hegel's Phenomenological Method and Analysis of Consciousness'. In: *idem.*, ed., *The Blackwell Guide to Hegel's Phenomenology of Spirit* (London, Blackwell), 1–36.
- , 2010. 'Hegel, Russell and the Foundations of Philosophy'. In: A. Nuzzo, ed., *Hegel and the Analytical Tradition* (New York, Continuum), 174–194.
- , 2012. 'Norm Acquisition, Rational Judgment and Moral Particularism'. *Theory and Research in Education* 10.1:3–25; DOI: 10.1177/1477878512437477.
- , 2013a. 'Hume, Empiricism and the Generality of Thought'. *Dialogue: Canadian Journal of Philosophy/Revue canadienne de philosophie* 52.2:233–270.
- , 2013b. 'Substantive Philosophy, Infallibilism and the Critique of Metaphysics: Hegel and the Historicity of Philosophical Reason'. In: L. Herzog, ed., *Hegel's Thought in Europe: Currents, Cross-Currents and Undercurrents* (Basingstoke, Palgrave-Macmillan), 192–220.
- , 2014. 'Autonomy, Freedom and Embodiment: Hegel's Critique of Contemporary Biologism'. *The Hegel Bulletin* (Cambridge University Press) 35.1:56–83.
- , 2015a. 'Conventionalism and the Impoverishment of the Space of Reasons: Carnap, Quine and Sellars'. *Journal for the History of Analytic Philosophy* 3.8:1–66.
- , 2015b. 'Causal Realism and the Limits of Empiricism: Some Unexpected Insights from Hegel'. *HOPOS: The Journal of the International Society for the History of Philosophy of Science* 5.2: 281–317.
- , 2015c. 'Some Replies to Professor Parrini, to Students and to Members of the Audience'. *Esercizi Filosofici* (Trieste) 10.1:63–79; <https://www.openstarts.units.it/dspace/handle/10077/11912>.
- , 2016a. *How Hume and Kant Reconstruct Natural Law: Justifying Strict Objectivity without Debating Moral Realism*. Oxford, The Clarendon Press.
- , 2016b. 'Back to the 3 R's: Rights, Responsibilities and Reasoning'. *SATS – Northern European Journal of Philosophy* 17.1:21–60; DOI: 10.1515/sats-2016-0008.
- , 2017a. "Qualia, Gemütsphilosophie und Methodologie; oder Wie wird aristotelische *Scientia* zu cartesianischer Unfehlbarkeit? Zum heutigen Widerstreit des Naturalismus und Cartesianismus". *Zeitschrift für philosophische Forschung* 71,4:457–494.
- , 2017b. 'Scepticism and Transcendental Arguments: Some Methodological Reconsiderations'. *Filozofija i Društvo/Philosophy and Society* (Beograd) 28.1:113–134; DOI: 10.2298/FID1701113W.
- , 2017c. 'Empiricism, Pragmatic Realism and the *A Priori* in *Mind and the World Order*'. In: C. Sachs & P. Olen, eds., *Pragmatism in Transition* (London, Palgrave Macmillan/Springer Science), 169–198; DOI: 10.1007/978-3-319-52863-2_8.
- , 2018a. *Grounds of Pragmatic Realism: Hegel's Internal Critique & Transformation of Kant's Critical Philosophy*. Leiden & Boston (USA), Brill.
- , 2018b. 'Higher Education and Academic Administration: Current Crises Long Since Foretold'. *Social Epistemology Review and Reply Collective* (SERRC) 7.1:41–47; <https://wp.me/p1Bfg0-3Tb>.

- , 2019c. ‘Hegel’s Critique of Theoretical Spirit: Kant’s Functionalist Cognitive Psychology in Context’. In: M.F. Bykova, ed., *Hegel’s Philosophy of Spirit: A Critical Guide* (Cambridge, Cambridge University Press), 57–80.
- , 2020a. *Hegel’s Civic Republicanism: Integrating Natural Law with Kant’s Moral Constructivism*. Oxon & New York, Routledge.
- , 2020b. “Wie beweist Kant die »Realität« unseres äusseren Sinnes?” In: G. Motta, D. Schulting & U. Thiel, eds., *Kants transzendente Deduktion der Kategorien: Neue Interpretationen/Kant’s Transcendental Deduction of the Categories: New Interpretations* (Berlin, de Gruyter), 000–000.
- , 2020c. ‘Kant, Hegel and the Historicity of Pure Reason’. In: M.F. Bykova & K.R. Westphal, eds., *The Palgrave Hegel Handbook* (London, Palgrave Macmillan (Springer Nature)), 45–64.
- , (2020d). *Kant’s Transcendental Deduction of the Categories: Critical Re-Examination, Elucidation and Corroboration. Kant’s Revised Second (b) Edition (1787), German Text with New Parallel Translation, for Students, Cognitive Scientists, Philosophers and Specialists*.
- Wettstein, Howard, 2004. *The Magic Prism: An Essay in the Philosophy of Language*. Oxford, Oxford University Press.
- Wick, Warner, 1951. ‘The “Political” Philosophy of Logical Empiricism’. *Philosophical Studies* 2.4:49–57.
- Will, Frederick L., 1968. ‘Thoughts and Things’. Presidential Address to the Western (now Central) Division of the American Philosophical Association; rpt. in: *idem.*, (1997), 1–20.
- , 1997. K.R. Westphal, ed., *Pragmatism and Realism*, Foreword by Alasdair MacIntyre. Lanham, Md, Rowman & Littlefield.
- Williams, Michael, 2006. ‘Science and Sensibility: McDowell and Sellars on Perceptual Experience’. *European Journal of Philosophy* 14.2:302–325.
- , 2013. ‘Skepticism, Evidence and Entitlement’. *Philosophy and Phenomenological Research* 87.1:36–71.
- Williamson, Timothy, 2000. *Knowledge and its Limits*. Oxford, Oxford University Press.
- Williamson, Timothy, 2006. ‘Conceptual Truth’. *Proceedings and Addresses of the Aristotelian Society*, sup. vol. 80:1–41.
- , 2009a. ‘Replies to Critics’. In: Greenough & Pritchard (2009), 279–384.
- , 2009b. ‘Reply to Charles Travis’. In: Greenough & Pritchard (2009), 377–384.
- , 2015. Review of Peter Unger, *Empty Ideas*. *The Times Literary Supplement* 5833 (16 Jan. 2015), 22–23.
- Wimsatt, William C., 2000. ‘Emergence As Non-Aggregativity and the Biases of Reductionisms’. *Foundations of Science* 5.3:269–297.
- , 2006. ‘Aggregate, composed, and evolved systems: Reductionistic heuristics as means to more holistic theories’. *Biology and Philosophy* 21:667–702; doi: 10.1007/s10539-006-9059-1.
- , 2007. *Re-engineering Philosophy for Limited Beings: Piecewise Approximations to Reality*. Cambridge, Mass., Harvard University Press.
- Winkler, Kenneth, 2010. ‘Kant, the Empiricists, and the Enterprise of Deduction’. In: P. Guyer, ed., *The Cambridge Companion to the Critique of Pure Reason* (Cambridge, Cambridge University Press), 41–72.

- Wittgenstein, Ludwig, 1958. *Philosophical Investigations*, 2nd ed. G.E.M. Anscombe, tr. London, Macmillan; cited as 'PI', by Part, § numbers.
- , 1969. *On Certainty*. G.E.M. Anscombe & G.H. vonWright, eds.; D. Paul & G.E.M. Anscombe, trs. Oxford, Basil Blackwell; cited as 'OC'.
- , 1978. *Remarks on the Foundations of Mathematics*, 2nd rev. ed. G.H. vonWright, R. Rhees & G.E.M. Anscombe, eds.; G.E.M. Anscombe, tr. Cambridge, Mass.: M.I.T. Press; cited as 'RFM'.
- Wolff, Christian, 1736. *Philosophiae primae, sive Ontologia*, 2nd ed. Frankfurt [am Main] & Leipzig.
- Wolff, Michael 1992. *Das Korper-Seele-Problem. Kommentar zu Hegel, Enzyklopädie (1830)*, §389. Frankfurt am Main, Klostermann.
- , 1995. "Was ist formale Logik?" In: C. Fricke, P. König & T. Petersen, eds., *Das Recht der Vernunft. Kant und Hegel über Denken, Erkennen und Handeln* (Stuttgart, Frommann-Holzboog), 19–31.
- , 1998. "Erwiderung auf die Einwände von Ansgar Beckermann und Ulrich Nortmann". *Zeitschrift für philosophische Forschung* 52.3:435–59.
- , 2000. "Kantische Urteilstafel und vollständige Induktion: Nachtrag zu meiner Kontroverse mit Ulrich Nortmann". *Zeitschrift für Philosophische Forschung* 54.1:86–94.
- , 2009a. *Abhandlungen über die Prinzipien der Logik*, 2nd rev. ed. Frankfurt am Main, Klostermann.
- , 2009b. *Die Vollständigkeit der kantischen Urteilstafel*, 2nd ed. Frankfurt am Main, Klostermann.
- , 2017. 'Kant's Precise Table of Judgments' In: J. O'Shea, ed., *Kant's Critique of Pure Reason: A Critical Guide* (Cambridge: Cambridge University Press), 83–105.
- , 2013. 'Viele Logiken – Eine Vernunft. Warum der logische Pluralismus ein Irrtum ist'. *Methodus. International Journal for Modern Philosophy* 7:79–134.
- , forthcoming. 'Kant's Table of Judgments: Frege's Critique and Kant's Counterargument'.
- Wolff, Robert Paul, 1960. 'Hume's Theory of Mental Activity'. *The Philosophical Review* 69.3:289–310; rpt. in: V. Chapell, ed., *Hume: A Collection of Critical Essays* (New York: Double Day, 1966), 99–128.
- Woodward, James, 2011. 'Data and Phenomena: A Restatement and Defense'. *Synthese* 182:165–179; DOI: 10.1007/s11229-009-9618-5.
- Wright, Crispin, 1986. 'Does *Philosophical Investigations* I.258–60 Suggest a Cogent Argument against Private Language?' In: P. Pettit & J. McDowell, eds., *Subject, Thought, and Context* (Oxford, The Clarendon Press), 209–266.
- , 1992. *Truth and Objectivity*. Cambridge, Harvard University Press.
- , 1993. 'Realism: The Contemporary Debate – W(h)ither Now?' In: J. Haldane & C. Wright, eds., *Reality, Representation, and Projection* (New York, Oxford University Press), 63–84.
- Wundt, Wilhelm, 1907. *System der Philosophie*, 3 vols., 3rd rev. ed. Leipzig, Engelmann.
- Yandell, Keith, 1990. *Hume's 'Inexplicable Mystery': His Views on Religion*. Philadelphia, Temple University Press.
- Young, J. Michael, 1992. 'Functions of Thought and the Synthesis of Intuitions'. In: P. Guyer, ed., *The Cambridge Companion to Kant* (Cambridge, Cambridge University Press), 101–122.

- Zahavi, Dan, 2003. *Husserl's Phenomenology*. Stanford, Stanford University Press.
- , 2009. "Phänomenologie und Transzendentalphilosophie". In: G. Figal & H.-H. Gander, eds., *Heidegger und Husserl. Neue Perspektiven* (Frankfurt am Main, Klostermann), 73–99.
- Ziemke, Axel, 1992. *System und Subjekt. Biosystemforschung und Radikaler Konstruktivismus im Lichte der Hegelschen Logik*. Wiesbaden, Vieweg.
- , 1994. *Was ist Wahrnehmung? Versuch einer Operationalisierung von Denkformen der Hegelschen 'Phänomenologie' für kognitionswissenschaftliche Forschung*. Berlin, Duncker & Humblot.

Name Index

- Aristotle 79, 82, 88
Austin, J.L. 5, 11, 18, 41, 45, 51, 53,
93, 166, 231, 247, 248, 315
- Berkeley, George 138, 255, 279
Bernoulli, Johann (Jean) 260*n*, 291
Bouwsma, O.K. 34, 227
- Carnap, Rudolf 8, 9, 12, 19, 20,
22–23, 24, 25, 29, 52*n*, 62*n*, 79,
80, 82*n*, 92, 95, 118, 148, 155,
222, 230, 234, 235, 236, 238, 239,
249, 267*n*, 316*n*, 318, 332, 333
Cartwright, Nancy 283–284
Chalmers, Alan 330
- Davidson, Donald 17, 23, 27, 236,
255*n*, 317–318
Descartes, René 17, 19, 21, 22, 28,
32, 25*n*, 47, 82, 134, 136–138,
143, 145, 160, 164, 214–215,
217–218, 227, 270, 307, 326,
327–328
d'Holbach, Paul-Henri Thiry (Baron)
301, 330
Donnellan, Keith 5, 26, 95, 118, 166,
231, 247, 248
Dretske, Frederick I. 5, 12, 23–24, 33,
92, 93, 216*n*, 223, 268*n*, 316, 323,
327*n*, 328*n*, 329*n*
- Earman, John 181, 290, 299–300
Evans, Gareth 5, 11, 26, 33, 86, 116,
140, 166, 186, 193*n*, 201, 223,
231, 246, 248, 261–262,
265, 292
- Frege, Gottlob 7, 11, 12, 24, 25, 63,
84, 111, 120, 121, 226, 228, 231,
235, 247, 248
Friedman, Michael 240, 279–281
- Galilei, Galileo 20, 21, 82, 261*n*,
282, 328
Gettier, Edmund 1, 4, 17, 21, 23, 29,
35, 78, 91, 137, 148, 171, 237–238
Gibson, John (J.J.) 12, 215
Greenberg, Robert 12, 13, 73*n*,
92–97, 198*n*, 203*n*, 303–304
Gurwitsch, Aron 243–244
Guyer, Paul 3, 70*n*, 78, 123, 127, 157,
160–161, 165, 172–173, 191, 235,
239, 244, 245, 246, 306, 320
- Hare, Richard (R.M.) 22, 332
Harper, William 12, 86*n*, 139, 167,
181, 182, 199, 208, 215, 219, 234,
253, 254–261, 268*n*, 269, 270,
276, 277, 279, 281, 284, 285, 287,
289, 292, 308
Hegel, G.W.F. 18, 30–34, 38, 43, 88,
89, 91, 93, 139, 166, 231, 248,
290*n*, 295*n*, 333
Heidegger, Martin 244–245, 249*n*
Heraclitus 80*n*
Hobbes, Thomas 301, 330
Horgan, Terry 300*n*, 325*n*
Hume, David 24*n*, 29*n*, 34, 35, 41,
47, 48, 53, 63, 69, 77, 79, 80*n*,
99, 105, 107–110, 128–129, 135,
137*n*, 138, 139, 140, 141, 142,
143, 145–146, 153–154, 159,
161, 165, 168, 171, 172, 174, 175,
176, 178, 183, 191, 192–196, 203,
204*n*, 214, 216, 217, 219, 220,
232, 236, 237, 238, 240, 241, 242,
243–245, 249, 255, 266*n*, 279,
317, 318, 323–324, 327, 332
Husserl, Edmund 242–245, 249*n*
- Kaplan, David 5, 7, 93, 94, 95, 231,
248, 267*n*, 280, 281
Kuhn, Thomas 247, 261

- LaPlace, Pierre Simon de 167, 180–181, 290–292, 300–301, 313, 321
- Leibniz, Gottfried Wilhelm von 33, 35, 44, 45, 51, 82, 86, 94, 106, 140, 154, 158, 159, 166, 172, 191, 210, 216*n*, 238, 244, 248, 260, 264, 322
- Lewis, Clarence Irving (C.I.) 4, 18, 20, 38, 43, 62–72, 75*n*, 80–82, 86, 92, 130*n*, 215, 230, 233, 234, 266, 275, 280*n*
- Lewis, David 122
- Lighthill, Sir James 166, 181, 290, 291, 308
- Locke, John 135, 137*n*, 138, 322
- Mach, Ernst 282–283
- McCarty, Richard 288*n*, 303, 305*n*, 309*n*, 317*n*, 319–322
- McDowell, John 62*n*, 88–93, 96*n*, 97, 149, 151, 216*n*, 219, 222–226
- Meinong, Alexius 243
- Melnick, Arthur 34*n*, 65, 96*n*, 98*n*, 103, 140, 141*n*, 185*n*, 219–220, 233*n*, 235*n*, 316
- Merleau-Ponty, Maurice 12
- Mettrie, Julien Offray de la 301, 330
- Newton, Sir Isaac 3, 5, 94, 158, 166, 180–181, 182, 253–261, 267–272, 274, 276–281, 283–287, 289, 312*n*, 290, 291, 292, 321, 323
- Nietzsche, Friedrich 238, 246–247
- Ockham 82, 88
- Parmenides 80*n*
- Parrini, Paolo 8*n*, 130*n*
- Perice, Charles Sanders (C.S.) * 81
- Perry, John 5, 166, 186*n*
- Prinz, Jesse 317*n*, 233, 322–324
- Quine, W.V.O. 12, 13, 17, 24, 27, 28, 47, 48*n*, 63*n*, 82*n*, 93, 96, 116–118, 121, 129*n*, 135*n*, 141*n*, 216*n*, 223, 226, 231, 236, 243, 248, 262, 294–295*n*, 315
- Reichenbach, Hans 10
- Rorty, Richard 17, 27, 29, 57*n*, 73*n*, 183, 184, 185, 189*n*, 193*n*, 226
- Russell, Bertrand 24, 28, 29*n*, 31, 46–48, 51–52, 62*n*, 63, 64, 72*n*, 99, 117–118, 121, 135, 140, 264, 283*n*, 294*n*, 301, 315
- Scharff, Robert 98, 245
- Schlick, Moritz 62*n*, 255*n*
- Sellars, Roy Wood 62*n*, 64
- Sellars, Wilfrid 4, 10, 62, 63, 78*n*, 79–93, 114*n*, 130, 151, 213, 215, 219–226, 235, 237, 316*n*, 329, 332–333
- Sextus Empiricus 135, 136, 143
- Sherover, Charles 244*n*
- Spohn, Wolfgang 215, 216*n*
- Strawson, Sir Peter F. 4, 11, 29, 62, 72–79, 81, 82, 86*n*, 93, 98, 165, 171, 183*n*, 184, 198*n*, 215, 235, 237, 239, 331
- Stroud, Barry 17, 46, 79*n*, 98, 99, 143, 155, 171, 183, 192*n*, 193*n*, 238
- Tempier, Étienne 21, 22, 29, 61, 66, 92, 120, 130*n*, 137, 148, 155, 182, 215, 216, 218, 225, 228, 229–230, 235, 269, 270, 328, 332
- Tetens, Johann N. 104, 105, 113, 115, 130*n*, 139, 142*n*, 154, 162, 232, 239, 242, 245, 246, 248, 295*n*, 306, 333
- Thales 42
- Toulmin, Stephen 63, 80, 130, 230, 333
- Travis, Charles 5, 6–10, 12, 39, 41*n*, 93, 96, 118, 166, 216*n*, 231, 248, 315
- Unger, Peter 122, 249
- van Fraassen, Bastian C. (Bas) 5, 10, 253, 261, 267, 272–229, 282, 283, 284–286
- Waismann, Frederick 41, 44, 45, 51, 305
- Will, Frederick L. 18, 41, 53*n*, 245
- Williamson, Timothy 1, 6–7, 10, 12, 41*n*, 47, 122, 230, 232, 249
- Wittgenstein, Ludwig 1, 4, 5, 18, 38–41, 43–61, 72*n*, 84, 85, 89*n*, 166, 189*n*
- Wolff, Christian 163, 218
- Wolff, Michael 20, 38*n*, 52*n*, 83*n*, 92, 97, 104, 111, 113, 124, 154, 163, 197, 200*n*, 233, 266, 299, 308*n*
- Wright, Crispin 39, 44, 60

Subject Index

Note: This index of subjects aims to complement, not to replicate, information provided by the Analytical Table of Contents and by the Name Index.

- access internalism *see* internalism, access
- action, causal theory of (human behaviour) 25, 175, 182, 317–322, 324; freedom of 3, 4*n*, 5, 10, 149–152, 166–167, 288–313
- affinity, of sensory manifold 35–38, 55–59, 70–71, 186–189, 195–197, 199, 201
- affordance, perceptual (Gibson) *see* perception
- agency, freedom of *see* action, causal theory
- alternatives, relevant *see* justification
- Analyses of Experience 3, 55, 65, 67*n*, 74, 97, 109, 127–128, 147–150, 157–163, 165, 171–182, 190–192, 203–210, 214, 219–220, 222, 226, 234–236, 244, 249–250, 288, 290, 306, 320, 331
- analysis, conceptual 1, 6, 9–10, 17, 21–23, 29, 35, 42, 63, 72, 76, 78, 79, 83, 87, 155, 163, 164, 166, 229, 235, 238, 239, 314, 318, 327, 328, 329, 330, 332–333; Paradox of 21–22, 332; *see also* explication, conceptual
- analytic judgment 164, 228–229, *cf.* 47, 63, 66, 82*n*; transcendental argument (*see* transcendental, argument); truth (*see* truth, analytic)
- Analytic of Principles 105, 113, 115, 126, 152, 153–230, 263
- argument, transcendental *see* transcendental, argument
- Aristotle's Condition (Travis) *see* truth
- ascription *see* judgment; reference, singular cognitive, Thesis of
- attraction, gravitational *see* gravitational, gravity
- Cartesianism 3, 5, 6, 32, 34, 47–48, 49, 53*n*, 58, 60–61, 65, 92, 99, 125, 134–135, 137, 138, 142–144, 149, 155, 158, 171, 179–180, 196, 202, 215, 216*n*, 217, 219, 222, 225, 227, 237, 238, 245, 253, 268–269, 270, 287, 313, 326–327, 331
- causal action 278, 281, *cf.* interaction, gravitation; activity 113, 158, 179, 190–191, 197, 217, 227, 308; agnosticism 260, 288, 307; beliefs 107, 145–147, 159, 192–194, 249, *cf.* porter; determinism 3, 5, 10, 150, 166–167, 180–182, 189–190, 218–219, 288–292, 299–302, 308–309, 312–314, 318–321, 330; explanation 96, 167, 253–287; general (transcendental) *vs* specific ('metaphysical') causal principle 167, 174, 181–182, 191, 218–219, 226, *cf.* 107; integrity (of particulars) 98, 113, 125, 146, 158, 161, 203, 205, 207–208, 214–215, 220–222, 278, 289, *cf.* 109; interaction 114, 124, 126, 147–149, 157–159, 165, 172–174, 179–180, 191, 207–209, 212, 215, 220, 240, 289, 306, 319, *cf.* gravity; judgment(s) 3, 5, 11–12,

- 87, 147–149, 160–161, 171–173, 181–182, 190–192, 207, 219–220, 235–237; knowledge 150, 167, *cf.* explanation; law 3, 23, 75, 128*n*, 167, 203, 240–241, 281, 304, 308–309, 318, 321, 323, *cf.* 303; locutions 150, 309, 320, 324; modalities 96, 112, 128, 203, 214, 220; naturalism 3, 6, 23–25, 301, 312–313, 316, 317, 325, 330; necessity *de re* 92, 95–97; power 75, 146, 163, *cf.* activity, gravity, interaction; principle(s) 107–108, 127, 172–230; principle *vs* law 3, 167, 321, 330; process 80*n*, 128*n*, 147, 191, 193, 196, 204, 214, 236, 242, 244, 250, 267, 288, 291, 313, 321, 323; realism 1, 3, 5, 182, 253–261, 267, 285; reliability (theories) 23–25, 139–140, 268*n*, 316*n*, 317–324; theory of action (*see* action, causal theory of); theory of mind 25, 317–324; theory of reference 322–324
- causality, ‘event causality’ (Hume) 108, 148, 194, 216, 236–237, 229–250, 279; regularity theory of 236, 259, 278–283; transeunt 159–161, 172–173, 191, 219, 236, 263–264
- cause, concept of 107–109, *cf.* Analogies of Experience, causal judgment(s)
- ceteris paribus* clause(s) 96, 273–275
- choice, free 68, 150, 288, 296–299, 302–311, 315–316; *cf.* action, freedom of
- cognitive significance *see* reference, singular cognitive, Thesis of
- concept(s), determinable 33–34, 153, 157, 248, 262, 265, 324; empirical, open texture of 41, 44–45, 48, 58, 92, 148, 225, 305; empiricism (*see* empiricism); intension *vs* extension *vs* extension 28, 71, 82*n*, 83–85, 95, 97, 106, 117–118, 156, 229, 232, 240–242, 248, 249, 265, *cf.* 5, 25–26, 33; possession 1, 3, 76–77, 79*n*, 105, 148, 166, 183*n*, 194, 239; use of (*see* Deduction, Transcendental; explication, conceptual; reference, singular cognitive, Thesis of)
- conceptual analysis *see* analysis, conceptual; explication, conceptual
- consciousness, apperception *vs* perception 35–36, 57*n*, 98, 109–110, 124–125, 143, 149, 154, 161, 162, 164–168, 175–180, 182, 188*n*, 189, 192–193, 195–196, 201, 204, 207, 208*n*, 216*n*, 232, 263*n*, 289, 319 (*see also* I think); hard problem of 325–330
- constitutive principle(s) *see* principle(s)
- corpuscularism 158
- Deduction, empirical 106; objective *vs* subjective 110, 180, 307; Transcendental, of the Categories 4*n*, 38, 55, 64, 67–68, 70, 72–74, 77*n*, 80, 89*n*, 98, 110, 114–118, 126, 147, 166–167, 179*n*, 188*n*, 192, 196–197*n*, 197, 210–213, 226, 263, 264*n*, 307, 331
- deixis *see* reference
- description(s), definite (grammatical *vs* referential) 25–28, 33, 86, 95, 106, 117–118, 120–122, 140, 154, 185, 264, 283*n*, 293, 294–295*n*; descriptive semantics (Carnap) 12, 118, 236; non-modal descriptive terms 215, 216*n*, 221–222; two uses of 25–26, 118–119, 247–248, 315
- dynamics *vs* kinematics 268, 279–282, *cf.* 272–279
- empiricism, concept 34, 68, 77, 107, 129, 140–141, 192–193, 204*n*, 233, 243, 322–324; constructive 5, 10, 253, 267, 272–287; Humean 34, 35, 63, 77, 107–109, 128, 135, 153, 159–161, 203, 215, 216, 243, 249–250, 327; logical 63, 79, 235–236, 255*n*; meaning 63, 233; reductionist 19–20; Quinean 27*n*, 47, 63*n*, 82*n*, 93, 117–118, 121, 135*n*, 223, 231–232, 248, 294*n*; semantic 8–9, 47; verification 5, 41, 63, 68, 232–233
- epistemology, ‘knowledge first’ (Williamson) 1, 6–7, 10, 12, 47, 79, 230, 232; post-Gettier 1, 4, 91; pre-Gettier 21, 23, 137; virtue 12, 24
- event causation, *cf.* causality

- explication, conceptual 1–2, 6, 9–10, 22–23, 66, 79, 82–83, 94, 155, 163, 164, 166, 192, 228–230, 238, 239–240, 305, 314, 318, 328–329, 332, 333
- extensionalism (Quine) 28, 72, 82, 243, 248, *cf.* 72
- externalism, epistemological:
 justificatory (*see* justification);
 mental content 2, 3, 37, 134, 135, 149, 165, 171–179, 186–189, 194, 197, 199, 201, 217, 218, 219, 227;
 semantic 2, 3, 9, 22, 58, 134, 171, 175, 332; *see also* justification, externalism
- fallibilism *see* justification
- force(s), causal 158, 212, 267, 332;
 distance 270, 291; psychological 319–320; transeunt (*see* causality); *see also* gravity
- framework, linguistic (Carnap) 9–10, 20; internal *vs* external questions 9, 267*n*
- freedom *see* action
- free fall 257, 261*n*, 267–268
- gravitational, gravity (force) 3, 5, 158, 163, 182, 253–260, 267–270, 276*n*, 277–286, 291, 292
- hylozoism 180, 181, 219
- idealism, transcendental *see* transcendental, idealism
- impression(s), sensory (Hume) 34, 108–109, 142, 146, 153, 176, 178, 195–196, 209, 213–214, 245, 249*n*, 323, 324, *cf.* 297
- induction 69, 107, 168, 240–242, 253–255, 317, 332; *see also* Rule 4
- infallibilism *see* justification
- internalism, access 2, 21, 32, 58, 180, 327; Cartesian 3, 6, 32, 49, 58, 200, 215, 225, 237, 239, 312; justificatory (*see* justification); mental content 58, 134, 219, 225, 312–313, 326–328; semantic 47, 49
- intentionality 83, 86, 88*n*, 93, 183–228; *see also* objective reality, objective validity (Kant)
- I think (Kant) 58*n*, 115, 124, 165, 187–188*n*, 195, 199
- judgment, considered 1, 6, 10, 25, 149, 152, 192, 230, 311, 321, 334; normative constitution of 150–151, 288, 305–306, 315–316; *s of* perception (*see* perception); *s*, Table of, 83, 96, 104, 111–113, 115, 124, 197, 263
- justification, cognitive 1, 6, 17, 18, 19*n*, 20, 23, 26–28, 77–78, 82, 105, 119–121, 128–129, 166–167, 192; coherence 78, 120, 193, *cf.* 108; deductivism (*see* infallibilism); corrigibility 41, 134*n*, 218, 220, 225, 326, *cf.* 22, 240, 332; defeat(ers) 10, 34, 120, 179, 214, 216, 227, 230, 234, 266, 270–271, 286; evidence, sensory-perceptual 24, 34, 98, 112, 120, 150–151, 214–215, 254–255; externalism 2, 9, 49, 58, 72, 135, 237–238, 239; fallibilism 11, 65, 91, 95, 98, 130, 137, 148, 164, 171, 230; ‘historical’ (*i.e.*, empirical, *historia*) 137; ideals 194, 229, 260–261, 270–271, 276*n*, 287; infallibilism 5, 18–21, 41, 47–48, 61, 66, 86, 91–93, 130*n*, 134–135, 137–138, 145, 155, 164, 202, 214–215, 229, 233–235; internalism 17, 21, 27, 49, 58, 134, 184, 215; K-K principle 21, 180; logical implication 240; proper (cognitive) functions 24, 150–151, 323; relevant alternatives 20, 130*n*, 278, 234–235, 271*n*; reliabilism 23–25, 32, 110, 114, 125, 137, 143, 151, 153, 200, 215, 226, 250, 268*n*, 316*n*, 322–323, *cf.* 146; *scientia* 20–21, 66, 72, 86, 137–138, 218–219, 228–230, 234, 269–272, 328; scientific, *e.g.*, classical mechanics (Newton), 253–287; testimony 233, 267
- Kaplan’s *caveat* 267*n*, 280*n*
- knowledge, factors (aspects) of 1; justified true belief (JTB) analysis of 1, 17; *see also* justification; reference, singular cognitive, Thesis of
- language, syntax, semantics, pragmatics (Morris) 236
- logic, Aristotelian 104, 110–112, 128; formal 20, 52*n*, 233, 266; general 111, 113, 123, 171,

- 239; mathematical (Frege) 111, 228–229; negation, not truth-functional 96, 112, 129, 308*n*; principle of bivalence 7, 8, 9, 52, 129, 308; principle of excluded middle 7, 129; transcendental 113–115, 171–172, 238
- logical constants 1, 52*n*, 106*n*, 110, 156*n*, 228–229; contents (Sellars) 83, 85; necessity, broad 29, 130, 164; orthodoxy 7, 10, 12, 29*n*, 47, 117, 230, 274
- measurement procedures, establishing 8, 10; Newton's 253–261
- metaphysics 46; analytic 27*n*, 122, 232, 249, 250, 278*n*, 301, 309, *cf.* 332; Critical (Kant) 181, 218–219, 286, 318; descriptive (Strawson) 76–77, 79, 81*n*; modal 12, 96; transcendent 29, 83, 96, 97, 122, 140, 158, 160, 163, 166, 198, 254, 266, 333; transcendental idealism 58*n*
- method, changed, of thinking (Kant) 6, 18, 42, 48, 54*n*, 98–99, 231, 305, 329, 331; constructivism 122, 132–133; *see also* conceptual analysis; explication, conceptual; Rule 4; transcendental reflection
- mind-body problem 136–137
- modality, causal 97, 112, 128, 203, 214–215, 220–221, 277–278; *de re* (Greenberg) 93–97; epistemic (cognitive) 92, 97, 112–114, 128, 157, 214, 220, 278, 319; logical 64, 97; meta-linguistic (Sellars) 87; modal intuitions 278; transcendental 87, 97–98, 128, 161–163, 203, 278
- mode of presentation (*Sinn*, *Art des Gegebenseins*; Frege) 11, 84, *cf.* 120, 121, 247–248
- novelty, *vs* innovation, philosophical 10, 332–333
- objective reality, objective validity 155, 163, 183, 232, 295–296, 307, *also see* reality, formal *vs* objective
- occasionalism 157, 159, 175
- open texture (of empirical concepts) *see* concept
- orthodoxy, logical 7, 10, 12, 29*n*, 47, 117, 230, 274
- perception, affordance(s) (Gibson) 11, 12, 215; discriminatory 5, 11–12, 26–27, 34, 55, 104, 114, 116*n*, 124, 126–127, 148, 160–161, 165, 167, 172–173, 175–179, 182, 191–192, 194, 200–216, 220–224, 234–235, 236–237, 244, 246, 250, 288, 306, 307, 314, *cf.* 146, 249; embodied 2, 71, 202, 215, 302; indirect (representational) theory of 135–138; judgments of 167–168; perceptual-motoric 11–12, 65, 68, 69, 114, 115, 124, 127, 161, 165, 174–175, 192, 202–203, 207, 212, 214, 215, 217, 220–221, 234, 243; sensory re-ference 12, 127, 202–204, 206, 214–215
- philosophy, historical character of 10, 21*n*, 79–80, 82*n*, 98, 250, 284, 312*n*, 313, 320, 325, 327–329, 332–333, *cf.* 138, 245, 261
- porter (Hume) 127–128, 145, 153, 161, 175, 192, 211, 216, 236, 243–244, 249
- pragmatics (language) 12, 236, 249, 272, *cf.* conceptual explication, Thesis of Singular Cognitive Reference
- presentation, mode of (Frege) *see* mode of presentation
- principle(s), Analytic of, *see* Analytic of Principles; constitutive *vs* regulative (use of) 69, 150, 167, 174, 181–182, 207, 234, 250, 288, 290–292, 296*n*, 299–301, 308, 310, 313–314, 318–319, 321, 330–331; General Causal Principle 107, 150; Specific Causal Principle 107, 167, 174, 181–182, 191, 219, 216, 226, 319; of Sufficient Reason 290–292, 299, 314, 330; transcendental causal principle 150, 167, 174, 218, 226; *vs* causal law 167, 300, 318, 321; *see also* Analogies of Experience
- proof, regressive 2–3, *cf.* *ratio cognoscendi*; transcendental (*see* transcendental, proof)
- pseudo-problem(s) 3, 168, *cf.* 192, 194, 230, 312–313, 322, 325, 329
- psychologism (Frege) 12, 24, 143, 171, 226, 235, 237, 249*n*, *cf.* 150–151
- psychology, associationist 34, 63, 109, 153–154, 193*n*, 215, 243,

- 245, 323–324; behaviourist 47–48; clinical 309–310; cognitive 17, 24–25, 32, 63, 78, 150, 239, *cf.* 70; empirical 150; introspective 150, 175, 190, 288, 306–307, 309; neuro- 200; rational(ist) 149–150, 189–190, 306–307; scientific 225–226, 300*n*; transcendental 78, 239
- questions, external *vs* internal (Carnap) *see* framework, linguistic
- ratio cognoscendi*, *vs* *ratio essendi* 49*n*, 217; *see also* proof, regressive
- realisiren* (realise; Tetens) 104–106, 113, 115–116, 126, 128–129, 155, 163, 197–199, 227, 232, 240, 242, 245, 246, 248, 250, 264*n*, 295*n*, 333
- realism, causal 1, 3, 5, 93–97, 182, *cf.* scientific; Critical commonsense 2, 86, 88, 97, 142, 154, 200–219, 225, 289, *cf.* 41–42, 58–61, 62*n*, 64, 122; direct perceptual 86, 89–93, *cf.* 183; empirical (Kant) 201, 203*n*, 244; internal (Putnam) 226*n*; naive 31–32, 34, 38, 142; robust pragmatic 38, 67–69; scientific 3, 5, 8, 182, 253–287; transcendental 87*n*, *cf.* 232*n*, 289*n*; without empiricism (Wittgenstein) 5, 38, 43–54, 58
- reality, formal *vs* objective 307, *cf.* 224; *see also* objective reality
- reference (to particulars) 12; causal theory of 139–140, 316; deictic 6, 27–28, 79*n*, 97, 128, 129, 236, 239, 306; demonstrative 11, 25, 27; descriptions theory of 86, 121–122, 139–140, 154, 247–248, 283*n*, 295*n*; inscrutability of 47–48; scientific 283–285; self-reference 115 (*see also* I think); singular 25–26, 30–35, 76, 84–86, 94–95, 112, 223, 226, 244, 248, 295–296, 300, 323–327, *cf.* 202–205; singular cognitive, Thesis of 3, 5–6, 9, 11, 13, 25–28, 34, 86, 96, 98, 104, 115–122, 125, 128–129, 130*n*, 132, 139–141, 148, 154–155, 163, 166, 171, 172, 174–175, 176, 179, 181–182, 183*n*, 185–186, 189, 194, 197–201, 210, 227, 231–233, 234, 236, 240, 242, 246, 248–250, 253, 261–272, 274, 276–287, 290*n*, 292–294, 307–308, 312, 314–315, 333–334, *cf.* 126
- reflection, transcendental *see* transcendental, reflection
- Rule 4 of Natural Philosophy (Newton) 3, 5, 182, 253–256, 261, 267–274, 279, 280, 283, 284–286
- scepticism, Cartesian 34, 44, 60–61, 65, 72, 87, 143, 155, 217–218, 227; empirical 80–81; empiricist 232; global perceptual 10, 17, 18, 21, 27, 28, 34–35, 38, 42, 49*n*, 58, 60, 72, 91, 99, 130*n*, 135–137, 143–147, 155, 164–165, 166, 171, 179, 183–235, 237–239; Humean 60, 76–79, 138, 143, 172, 183*n*, 191, 192, 219, 232, 237, 317; modal 172, 191, 203, 232, 278, 317; Pyrrhonian (Sextus Empiricus) 135, 136, 143
- semantics, connotation *vs* denotation 25–28, 81, 84–86, 93, 94, 95, 97, 116, 117, 118–120, *cf.* 65; descriptive (Carnap) 12, 118, 236; meaning *vs* reference (*see* connotation *vs* denotation); *see also* concept; reference, singular cognitive, Thesis of
- sensory re-afference *see* perception
- speech, formal *vs* material mode 9, 28, 62, 79–80, 87, 332
- subreption, transcendental *see* transcendental, subreption
- transcendental: affinity 1, 5, 29, 54, 73*n*, 76–77, 79*n*, 166, 183, 184, 217, 218–219, 239, 329; argument 1, 5, 29, 54, 73, 76, 79*n*, 166, 183–184, 217, 239, 329; chaos (*see* affinity); deduction (*see* Deduction); freedom 302, 304; idealism 2, 4, 5, 38, 44*n*, 63, 64, 81, 87–88, 93–94, 96, 103, 116*n*, 131, 165, 166, 171, 181, 184, 201, 204, 232, 244, 248, 264*n*, 286, 289*n*, 298, 302, 312, 329; logic 83–84, 113, 155–160, 171–172, 197, 238, 245–246, 306, 319; metaphysics (ontology) 163,

- 198; method (*see* transcendental, reflection); psychology 78, 169, 239; power of imagination 110, 123, 154, 172, 189, 195, 210, 239, 324; power of judgment 165 (*see also* transcendental, logic); proof 2, 29, 49, 72, 130, 135, 144–149, 165, 171, 175–179, 184–230, 232, 262–264, 319; reflection 11, 29, 32, 35–38, 41–42, 50*n*, 54–61, 81–82, 109, 124–128, 140, 142, 144, 185–230, 239, 249–250, *cf.* 47, 314, 331–334; subreption 96, 167, 299, 300, 318, 321, 330; topic 28*n*; unity of apperception (*see* I think); *see also* affinity
- transcendent metaphysics *see* metaphysics
- transeunt causality *see* causality
- true, truth, 1, 17, 26, 41, 82, 83, 85, 90, 91, 95–96, 119, 272, 273, 274, 275, 277*n*, 283, 308, 311; analytic 10, 66–67, 229; *a priori* 68, 107; axiomatic 66; approximate 28, 34, 58, 119, 155, 166, 194, 210, 233, 253, 283, 294, 312, 315, 323; Aristotle's Condition (Travis) 6, 7, 9; conceptual 94 (*see also* truth, analytic); contingent (*see* factual); factual 85, 92; formal 66; logically contingent (*see* truth, synthetic); minimalism *vs* correspondence 60; platitude 9; and reference 118, 120–121, 128–129, 155, 166, 194, 210, 229, 266, 268, 271, 283–285, 293–294, 327; synthetic 20, 229; synthetic necessary 63, 80, 81, 83, 130, 146–147, 149, *cf.* 41, 44, 52, 53, 59–60, 97; truth tables 52*n*; truth-value 26, 34, 120, 274–275
- verificationism *see* empiricism
- virtue epistemology *see* epistemology



Taylor & Francis Group
an informa business



Taylor & Francis eBooks

www.taylorfrancis.com

A single destination for eBooks from Taylor & Francis with increased functionality and an improved user experience to meet the needs of our customers.

90,000+ eBooks of award-winning academic content in Humanities, Social Science, Science, Technology, Engineering, and Medical written by a global network of editors and authors.

TAYLOR & FRANCIS EBOOKS OFFERS:

A streamlined experience for our library customers

A single point of discovery for all of our eBook content

Improved search and discovery of content at both book and chapter level

REQUEST A FREE TRIAL
support@taylorfrancis.com

 Routledge
Taylor & Francis Group

 CRC Press
Taylor & Francis Group