# Contents

*Acknowledgments*  

**Part I. Epistemic Friction**  

1. Epistemic Friction and Freedom  
   1.1 Epistemic Friction and its Roots in Kant, Wittgenstein, and McDowell  
   1.2 The Present Conception of Epistemic Friction  
   1.3 Epistemic Freedom  
   1.4 Between Friction and Freedom  
2. A Sustainable Epistemic Methodology  
   2.1 Epistemic Friction and the Illusion of Foundationalism  
   2.2 From Foundationalism to *Foundational Holism*  

**Part II. A Dynamic Model of Knowledge**  

3. Quine’s Model of Knowledge: An Inner Tension  
   3.1 The Initial Promise of Quine’s Model  
   3.2 An Inner Problem in Quine’s Model  
   3.3 Objections and Responses  
   3.4 Dummett’s Solution to the Inner Problem  
   3.5 A New Solution  
4. Dynamic Model—Two Dimensions of Change  
   4.1 Contextual Dynamic  
   4.2 Temporal-Developmental Dynamic  
5. Reality, Intellect, Realism  
   5.1 The Basic Epistemic Situation  
   5.2 Reality: Beyond Platonism and Nominalism  
   5.3 Intellect: Beyond Apriorism and Empiricism  
   5.4 Robust yet Non-Rigid Realism  
6. Differences with Quine  
   6.1 Contrasts with Quine’s Model  
   6.2 Immunity to Criticisms of Quine’s Model  

**Part III. The Structure of Truth**  

7. A Substantivist Theory of Truth  
   7.1 A Substantivist (as Opposed to Deflationist) Methodology  
   7.2 The Unity and Disunity of Truth: Challenges and Strategies
8. Basic Principles of Truth
   8.1 The Fundamental Principle of Truth 162
   8.2 Ramifications for Skepticism 175
   8.3 The “Manifold” Correspondence Principle 186
   8.4 Application to Mathematics (A New Theory of Mathematical Truth) 192
   8.5 The Logicality Principle (Tarski’s Theory of Truth in Perspective) 218

Part IV. An Outline of a Foundation for Logic

9. The Foundational Problem of Logic 239
   9.1 The Foundational Problem of Logic as a Methodological Problem 239
   9.2 Analysis of the Problem and Alleged Remedies 243
   9.3 Solution: The Foundational-Holistic Methodology 250

10. An Outline of a Foundation for Logic 253
    10.1 What is Logic’s Task in our System of Knowledge? 254
    10.2 Is Logic Grounded in the Mind or in the World? 255
    10.3 Why does Logic Require a Grounding in the World? 260
    10.4 What Specific Features of the World is Logic Grounded in?—The
        Formality Thesis 271
    10.5 From Formality to Generality, Necessity, Topic Neutrality, Strong
        Normativity, Quasi-Apriori, and More 288
    10.6 Source of the Normativity of Logic, Tarski’s Problem, Truth and
        Logical Truth, and Other Issues 294
    10.7 Questions and Objections: Logical Constants, Invariance, Generality,
        and Necessity 302
    10.8 Logic and Mathematics: An Alternative to Logicism 320
    10.9 On the Possibility of Error and Revision in Logic 327
    10.10 The Scope of Logic 331

Conclusion: Toward Freedom 339

References 343
Index 359
1

Epistemic Friction and Freedom

My starting point is the observation that every rational act involves both freedom and constraint: freedom to act and set rational standards for our actions, and constraints imposed by our environment on the one hand and our standards of rationality on the other. The development of a system of knowledge—a body of disciplines and theories seeking knowledge of various aspects of the world (in a broad sense of the word)—is also a rational enterprise, and as such it, too, requires both freedom and constraint. Freedom, here, is freedom to actively engage in epistemic pursuits: set up our epistemic goals, choose the subject matter of our investigations, ask questions, select and apply epistemic norms, design research programs, construct epistemic tools, do experiments, make calculations, draw conclusions, devise strategies, make practical and theoretical decisions, etc. And constraint is constraint coming from two sources, the world and the mind. The world as the object or target of our theories restricts what we can truly say about it, and the mind restricts our theories both voluntarily and involuntarily: voluntarily, through our chosen goals, standards, and decisions, and involuntarily, through our makeup and built-in limitations. We may say that neither freedom without constraint nor constraint without freedom can give rise to knowledge. Freedom alone cannot distinguish knowledge from phantasm; constraint by itself would leave us cognitively inert.

1 Two terminological notes:

(i) System of Knowledge: Throughout this essay I use the notion of system of knowledge as a partially idealized notion indicating the collection of disciplines that constitute our integrated body of theoretical knowledge.

(ii) Theory: I use the notion of theory in a broad, everyday sense. (For example, I do not limit “theory” to “axiomatic theory”.) In addition, I sometimes use “model” (as in “model of knowledge”) as synonymous to “theory” (“theory of knowledge”), and I do not draw a sharp distinction between a theory and its parts (e.g., the present essay develops both a single theory of knowledge, truth, and logic, and three interconnected theories, each devoted to one of these topics).