Contents of Volume 1

INTRODUCTION *page*

§1 *Historical Background* 1
§2 *The Need for a Logic of Significance* 5
§3 *Nonsignificance, Falsity and The Ungrammatical* 8
§4 *The Proposed Logic* 15

PART I

CONTEXT LOGIC

CHAPTER 1 THE SEMANTIC THEORY

1.1 Initial Problems 21
1.2 Sentences and their Use 23
1.3 True and False Sentences 24
1.4 Significant and Nonsignificant Sentences 29
1.5 Incomplete Sentences 32
1.6 Comparable Semantic Values 34
1.7 The Meaning of Sentences 35
§1 *The Background Language* 35
§2 *The Context* 39
1.8 Criteria of Nonsignificance 42

CHAPTER 2 ELEMENTS OF THE SENTENTIAL THEORY

2.1 Sentential Variables and Constants 44
2.2 Connectives and Semi-well-formed Formulae 46
2.3 Context Variables and Constants 47
2.4 The Sentential Quotation Function 49
2.5 The Relation between Sentences and Statements 54

2.6 The Logic of Statements, **SL** 62
2.7 The Logic of Statement-Yielding Sentences, **RSL** 68
2.8 Extended Statement Logic, **ESL** 73
2.9 The Basic Well-formed Formulae of Context Logic, **CL** 76
2.10 The Nature of the Basic Formulae 79
2.11 The Formal Basis of **CL** 81
2.12 Properties of Sentences 90
2.13 The Statement-Yielding Relation, Statement Identity and the Statement Function 92
2.14 Truth and Falsity 104
2.15 The Valuation Function and the Derived Sentential Range 110
2.16 The Reduced Sentential Range 117
2.17 Strong Extensional Equivalence 118
2.18 Further Developments 119

CHAPTER 3 ELEMENTS OF THE PREDICATE AND QUANTIFICATION THEORY

3.1 Syntactical and Semantical Preliminaries 120
3.2 Constants, Subjects and Predicates 123
3.3 Place-holders, Arguments, Parameters and Variables: Their Values and Ranges 134
3.4 Operators: Quantifiers and Descriptions 146
3.5 The Syntax of Context Logic, and Identity 152
3.6 Aboutness and Items, and other Contractions 172
3.7 Predicates, Properties and Universals 191
3.8 Derived Ranges and Significance Essentialism 200
§1 *Significance Ranges* 201
§2 *Truth and Falsity Ranges* 204
§3 *Secondary Item Ranges* 205
§4 *Significance Essentialism* 208
3.9 Separating Incompleteness from the Varieties of Nonsense 212

PART II

THE PRINCIPLES OF SIGNIFICANCE

CHAPTER 4 TOWARDS A LOGIC OF SIGNIFICANCE

4.1 The Method to be Adopted 219
4.2 The Standard Method 223
4.3 Deficiencies of the Standard Method 225
4.4 Ideal Languages 231
4.5 The Scope of Logic and the Anti-Logic Campaign 234
4.6 The Irreducibility of Nonsignificance 237
4.7 Degrees of Significance 246
4.8 Conventionalist and Contingency Objections 248

CHAPTER 5 SENTENTIAL SIGNIFICANCE LOGICS I: THE MATRIX APPROACH

5.1 Extensional Connectives 256
5.2 Extended Classical Connectives 258
5.3 Classical Significance Connectives 260
5.4 Strong Regular Significance Connectives 265
5.5 Designated Values: **S** and **C** Logics 273
5.6 The Problem of Consistency for Matrix Logics 276
5.7 Sorted Variables 293
5.8 Stage 0: The Logics $\mathbf{S}_0$ and $\mathbf{C}_0$ 295
5.9 Stage 1: The Logics $\mathbf{S}_1$ and $\mathbf{C}_1$ 305
5.10 Stage 2: The Logics $\mathbf{S}_2$ and $\mathbf{C}_2$ 312
5.11 Stage 3: The Logics $\mathbf{S}_3$ and $\mathbf{C}_3$ 323
5.12 Stage 4: Alternative Interpretations of $\mathbf{S}_3$ and $\mathbf{C}_3$, and the 4-Logics 335
5.13 Stage 5: The Logics $\mathbf{S}_5$ and $\mathbf{C}_5$ 345
5.14 Stage 6: The Logics $\mathbf{S}_6$ and $\mathbf{C}_6$ 355

CHAPTER 6 SENTENTIAL SIGNIFICANCE LOGICS II: THE AXIOMATIC APPROACH

6.1 Stage 0: Axiomatic Formulations of 0-Systems 368
6.2 Stage 1: Axiomatic Formulations of 1-Systems 373
6.3 Stage 2: Axiomatic Formulations of 2-Systems 391
6.4 Stage 3: Axiomatic Formulations of 3-Systems 406
6.5 Stage 4: Axiomatic Formulations of 4-Systems 409
6.6 Stage 5: Axiomatic Formulations of 5-Systems 413
6.7 Stage 6: Axiomatic Formulations of 6-Systems 415

CHAPTER 7 INTENSIONAL AND QUANTIFIED SIGNIFICANCE LOGICS

7.1 Extending Sentential Significance Logics 431

7.2 Intensional Superstructures 435
§1 *Inadequacies of Extensional Significance Logics: Non-value-functional Connectives* 435
§2 *Set-up and Situational Semantics* 442
§3 *Accounting for Specific Properties of Intensional Connectives* 448
§4 *Multiply Modal Significance Logics* 452
§5 *Soundness and Completeness Theorems* 457
§6 *Decidability* 461
§7 *Generalizations, and the Intensionality of Connectives* 463
§8 *The Context Interpretation of Set-ups and the Addition of Context* 466

7.3 Quantified Significance Logics: the Interpretation of Quantifiers 469

7.4 Kinds of Quantified Significance Logics 475

7.5 On the Quantification Logic of *Principia Mathematica* 477
§1 *The Logic* $\mathbf{PM}_1$ 479
§2 *The Logic* $\mathbf{PM}_2$ 481
§3 *The Criteria of Significance in Principia Mathematica* 482
§4 *A Significance Semantics for* $\mathbf{PM}_2$ 483
§5 *The Logic* $\mathbf{PS}_1$ 485

7.6 Many-sorted Significance Logics 485

7.7 The Quantificational System $\mathbf{QS}_6$ 493
§1 *The Syntax and Contractional Semantics*
§2 *The Postulational Theory* 496

§3 *Skolem-Löwenheim and Completeness Theorems* 502
§4 *Compatibility and Interpolation Theorems* 510
§5 *Generalized Quantified Significance Theories* 517

7.8 Quantification Logics with Alternative Sentential Bases 518
§1 *The Quantification Logic* $\mathbf{QS_4}$ 518
§2 *The Restricted Quantification Logics* $\mathbf{QS_5}$ *and* $\mathbf{QS_3}$ 520
§3 *The Restricted Quantification Logic* $\mathbf{QS_2}$ 522
§4 *The Quantification Logic* **QL** *with alternative quantifiers* 525

7.9 Developments of Quantified Significance Logics 528
§1 **SA**, *a Significance Arithmetic; and the Theory of Partial Recursive Functions* 528
§2 *Significant Subjects, Special Subjects and Existence:* $\mathbf{QS_6E}$ 529
§3 *Quantified Significance Logic with Leibniz Identity:* $\mathbf{QS_6E}\approx$ 533
§4 *Contextually Defined Definite Descriptions in* $\mathbf{QS_6E}\approx$ 537
§5 *The Logic of Classes and Relations in* $\mathbf{QS_6E}\approx$ 538
§6 *Restricted Variables and Restricted Quantifiers* 541

7.10 Quantified Multiply Modal Significance Logics 545

7.11 Further Enlarged Quantified Significance Logics 553
§1 *Logics Based on an Any-Operator:* $\xi\mathbf{S_6}$ 553
§2 *Definite Descriptions in* $\xi\mathbf{S_6E}\approx$ 558
§3 *Modalisation:* $\xi\mathbf{IS_6}$, *etc.* 560
§4 *General Intensional Logics, Context and Pragmatics* 563

7.12 Second-Stage Quantified Significance Logics 566
§1 *Interpretational Problems* 566
§2 *A Semantics for* $\mathbf{2QS_6}$ 576
§3 *The Postulational Theory for* $\mathbf{2QS_6}$ 577
§4 *Soundness, Completeness and Löwenheim-Skolem Theorems for* $\mathbf{2QS_6}$ 579
§5 *The Extended Assertoric Logic* $\mathbf{ES_6}$, *and the Consistency of* $\mathbf{2QS_6}$ 584

7.13 Developments of Second-Stage Quantified Significance Logics 587
§1 *Further Second-Stage Logics* 587
§2 *The Weakness of Completeness: Extensions of* $\mathbf{2QS_6}$ *by Abstraction* 589
§3 *Extensions of Second-Stage Logics* 592
§4 *Reductions of Second-Stage Logics to Many-Sorted Significance Logics* 598

§5 *Applications of Normally Interpreted Second-Stage Logics and their Extensions: Class Theory and Number Theory* 602

§6 *On Identity* 606

7.14 The Structure of Categories 614

BIBLIOGRAPHY 637

An index for both volumes is given in Volume 2.