

CONTENTS

List of Illustrations	xvii
Acknowledgments	xix
Foreword	xxi
Introduction	xxiii
Chapter One MUL.APIN	1
1.1 The Text	1
1.2 Form	2
1.3 Date of Composition	3
1.4 MUL.APIN and the Scribal Tradition	6
1.5 Sequence in MUL.APIN	7
1.5.1 Sequence: Procedural Considerations	8
1.6 Mesopotamians and Moderns	10
1.7 Analytic Considerations: Why We Chose MUL.APIN	12
1.8 Conclusion	14
Chapter Two Writing and Conceptual Change	15
2.1 The Cuneiform Scribal Tradition	16
2.1.1 The Cuneiform Lists and Conceptions of Language	17
2.2 Writing, Cognition, and Culture	18
2.2.1 Literacy and the Brain	19
2.2.2 Naturalistic Approaches	20
2.2.3 Cognitive Evolution	21
2.2.4 Cultural Variation	23
2.2.5 Cultural Transmission	24
2.3 Writing and Conceptual Change	25
2.3.1 Writing and Rationality	26
2.3.2 The Greeks and the “Great Divide”	26
2.3.3 Moderns, Media, and Materialism	30
2.3.4 Pragmatics and the Uses of Writing	32
2.3.5 Permanence, Memory, and the Archival Uses of Texts	33

2.4	A Model of Writing and Conceptual Change	35
2.4.1	Writing and Cultural Transmission	35
2.4.2	Writing as Communication	36
2.4.3	Writing Recalibrates Inferential Environments	38
2.4.4	Writing and Rationality	40
2.5	Conclusion: Summary of Pre-Analytic Assumptions	42
Chapter Three Terms of Analysis		45
3.1	The Language of Space and Time	45
3.1.1	The Language of Space	46
3.1.2	Coordinating Systems or Frames of Reference	47
3.1.3	The Language of Time	48
3.2	Deixis, Indexical Expressions, and Context	51
3.3	Categories and Concepts	53
3.3.1	Kinds of Concepts	53
3.4	Naming	54
3.5	Definition	55
3.5.1	Stipulative Definition	56
3.6	Assumptions and Axioms	58
3.7	Rhetorical Concerns	58
Chapter Four MUL.APIN: Text and Analysis		61
A Note on the Form of the Akkadian Text of MUL.APIN		61
4.1	Section a, MUL.APIN I i 1–ii 35	63
4.1.1	Astronomical Content	63
4.1.2	Textual Form	63
4.1.3	Translated Text	64
4.1.4	Analysis	66
4.1.4.1	Discourse Forms: List Structure	66
4.1.4.2	Discourse Forms: Time and Space	66
4.1.4.3	Minor Textual Form: The Planets	67
4.1.5	Categories	68
4.2	Sections b–d, MUL.APIN I ii 36–I iii 12	69
4.2.1	Astronomical Content	69
4.2.2	Textual Form	69
4.2.3	Translated Text	69
4.2.4	Analysis	72

4.2.4.1	Discourse Forms: Time and Space	72
4.2.4.1.1	Discourse Forms: Section b	72
4.2.4.1.2	Discourse Forms: Section c	72
4.2.4.1.3	Discourse Forms: Section d	73
4.2.4.1.4	Minor Textual Form in Section b	73
4.2.5	Categories	74
4.3	Intermediate Section, MUL.APIN I iii 49–50	74
4.3.1	Astronomical Content	74
4.3.2	Translated Text	74
4.3.3	Analysis	75
4.3.3.1	Discourse Forms: Time and Space, Generalized Description	75
4.3.3.2	Rhetorical Device: Proto-Axioms	75
4.3.3.3	Rhetorical Function: Transition	76
4.3.4	Categories	76
4.4	Section e, MUL.APIN I iv 1–30	76
4.4.1	Subsection e-1, MUL.APIN I iv 1–9	76
4.4.1.1	Astronomical Content	76
4.4.1.2	Textual Form	76
4.4.1.3	Translated Text	77
4.4.1.4	Analysis	77
4.4.1.4.1	Rhetorical Devices: Introduction and Conclusion	77
4.4.1.4.2	Rhetorical Devices: Direct Address	78
4.4.1.4.3	Discourse Devices: Continuous Discourse	78
4.4.1.4.4	Discourse Forms: Space and Time, Multiple Marking	79
4.4.1.4.5	Generalizations	79
4.4.1.5	Categories	79
4.4.2	Subsection e-2, MUL.APIN I iv 10–30	79
4.4.2.1	Astronomical Content	79
4.4.2.2	Textual Form	80

4.4.2.3	Translated Text	80
4.4.2.4	Analysis	81
4.4.2.4.1	Rhetorical Devices: Introduction, Direct Address	81
4.4.2.4.2	Dividing Lines	81
4.4.2.4.3	Discourse Forms: Space and Time, Multiple Marking	82
4.4.2.4.4	Generalizations	83
4.4.2.5	Categories	83
4.5	Section f, MUL.APIN I iv 31-II i 8	83
4.5.1	Subsection f-1, MUL.APIN I iv 31–39	84
4.5.1.1	Astronomical Content	84
4.5.1.2	Textual Form	85
4.5.1.3	Translated Text	85
4.5.1.4	Analysis	85
4.5.1.4.1	Rhetorical Devices: Introduction and Conclusion	85
4.5.1.4.2	Discourse Forms: Time and Space, Complex Descriptions	85
4.5.1.4.3	Generalizations	86
4.5.1.5	Categories	86
4.5.2	Subsection f-2, MUL.APIN II i 1–8	86
4.5.2.1	Astronomical Content	86
4.5.2.2	Textual Form	87
4.5.2.3	Translated Text	87
4.5.2.4	Analysis	87
4.5.2.4.1	Rhetorical Devices: Conclusion	87
4.5.2.4.2	Discourse Forms: Space and Time	87
4.5.2.4.3	Generalizations	87
4.5.2.5	Categories	88
4.6	Section g, MUL.APIN II i 9–24	88
4.6.1	Astronomical Content	88
4.6.2	Textual Form	88
4.6.3	Translated Text	89

4.6.4	Analysis	90
4.6.4.1	Rhetorical Devices: Conclusion, Direct Address	90
4.6.4.2	Discourse Forms: Space and Time	90
4.6.4.2.1	Complexity	91
4.6.4.2.2	Generalized Expressions....	91
4.6.4.3	Dividing Lines	91
4.6.5	Categories	92
4.7	Sections h and i, MUL.APIN II i 25–71; plus Gap A 1–7, from Section j	92
4.7.1	Subsection h-i-1, MUL.APIN II i 25–37	93
4.7.1.1	Astronomical Content	93
4.7.1.2	Textual Form	93
4.7.1.3	Translated Text	94
4.7.1.4	Analysis	94
4.7.1.4.1	Rhetorical Devices: Direct Address	94
4.7.1.4.2	Discourse Forms: Space and Time	95
4.7.1.4.3	Generalizations	95
4.7.1.5	Categories	95
4.7.2	Subsection h-i-2, MUL.APIN II i 38–43	95
4.7.2.1	Astronomical Content	95
4.7.2.2	Textual Form	95
4.7.2.3	Translated Text	96
4.7.2.4	Analysis	96
4.7.2.4.1	Rhetorical Devices: Conclusion, Direct Address	96
4.7.2.4.2	Discourse Forms: Space and Time	96
4.7.2.4.3	Generalizations	96
4.7.2.5	Categories	97
4.7.3	Subsection h-i-3, MUL.APIN II i 44–67	98
4.7.3.1	Astronomical Content	98
4.7.3.2	Textual Form	98
4.7.3.3	Translated Text	98

4.7.3.4	Analysis	100
4.7.3.4.1	Discourse Forms: Complexity	100
4.7.3.4.2	Discourse Forms: Space and Time	100
4.7.3.4.3	Generalizations	100
4.7.3.5	Categories	101
4.7.3.6	Minor Textual Form: Description of Mercury	101
4.7.4	Subsection h-i-4, MUL.APIN II i 68–71	101
4.7.4.1	Astronomical Content	101
4.7.4.2	Textual Form	102
4.7.4.3	Translated Text	102
4.7.4.4	Analysis	102
4.7.4.4.1	Rhetorical Devices: Direct Address, Procedures	102
4.7.4.4.2	Discourse Forms: Space and Time	102
4.7.4.4.3	Generalizations	103
4.7.4.5	Categories	103
4.7.5	Subsection j-1, Gap A 1–7	103
4.7.5.1	Astronomical Content	103
4.7.5.2	Textual Form	103
4.7.5.3	Translated Text	104
4.7.5.4	Analysis	104
4.7.5.4.1	Discourse Forms: Space and Time	104
4.7.5.4.2	Rhetorical Devices	104
4.7.5.4.3	Generalizations	104
4.8	Subsections j-2 and j-3, MUL.APIN II Gap A8-II ii 20	105
4.8.1	Subsection j-2, MUL.APIN II Gap A8-II ii 17	105
4.8.1.1	Astronomical Content	105
4.8.1.2	Textual Form	105
4.8.1.3	Translated Text	106
4.8.1.4	Analysis	107
4.8.1.4.1	Discourse Forms: Time and Space	107

4.8.1.4.2	Rhetorical Devices: Summary Statement, Direct Address	107
4.8.1.4.3	Generalizations: Decision Rules Expressed as Conditionals	108
4.8.1.4.4	Rhetorical Devices: Mathematical Procedure	108
4.8.1.5	Categories	109
4.8.2	Subsection j-3, MUL.APIN II ii 18–20	110
4.8.2.1	Content and Analysis	110
4.8.2.2	Translated Text	110
4.9	Section k, MUL.APIN II ii 21–42	111
4.9.1	Astronomical Content	111
4.9.2	Textual Form	111
4.9.3	Translated Text	111
4.9.4	Analysis	112
4.9.4.1	Rhetorical Device: Table-Like Format	112
4.9.4.2	Rhetorical Devices: Direct Address, Summary Statement	113
4.9.5	Categories	113
4.10	Section L, MUL.APIN II ii 43–II iii 15	114
4.10.1	Astronomical Content	114
4.10.2	Textual Form	114
4.10.3	Translated Text	115
4.10.4	Analysis	116
4.10.4.1	Discourse Forms: Time and Space	116
4.10.4.2	Rhetorical Devices: Direct Address, Conclusion, Axiom	116
4.10.5	Categories	117
4.11	Section m, MUL.APIN II iii 16–iv 12	117
4.11.1	Content	117
4.11.2	Textual Form	118
4.11.3	Translated Text	118
4.11.4	Analysis	121
4.11.4.1	Rhetorical Devices: Omens	121

Chapter Five Summary of Results	123
5.1 The Language of Space and Time	123
5.2 Rhetorical Features: Introductions and Conclusions	125
5.3 Rhetorical Features: Direct Address	127
5.4 Natural Categories: An Emerging Taxonomy of Stars	128
5.5 Procedures and Procedural Categories	131
5.6 Definitions and Stipulation: Non-Natural Categories ...	133
5.7 Ancient Forms of Text Marking: DIŠ and Horizontal Rulings	135
5.8 Generalizations, Axioms, and Assumptions	137
Chapter Six Discussion: MUL.APIN, Writing, and Science	139
6.1 A Developmental Progression	139
6.2 Applying an Inferential Model to MUL.APIN	140
6.2.1 Textual Evidence for Recalibration: Rhetorical-Indexical Clusters	142
6.2.2 Summary: Rhetorical-Indexical Clusters	146
6.3 Textual Indicators of Logic and Rational Thought in MUL.APIN	148
6.3.1 An Incipient Taxonomy of Stars	148
6.3.2 Generalizations	150
6.3.3 Generalizations and the Text Marker DIŠ	150
6.3.4 Definitions: Content and Form	151
6.3.5 Summary: Categories, Generalizations, and Definition	154
Chapter Seven Further Thoughts: The Cognitive Functions of Writing in MUL.APIN	157
7.1 Writing and Dual-Process Models of Cognition	158
7.2 The Mind's Confrontation with Its Own Invention ...	160
7.3 Lists, Science, and Domains of Knowledge	161
7.4 A Cognitive Influence on the Organization of the Lists	162
7.5 <i>Listwissenschaft</i> : But Is It Science?	164
7.6 Star Lists and the Extended Function of Writing in MUL.APIN	165
7.7 Summary	167

Chapter Eight A Final Word: From List to Axiom	169
8.1 MUL.APIN and the Technical Handbook	
Tradition	169
8.2 The Omens and Anomalous Text	172
8.3 MUL.APIN, Science, and Rationality	173
 Bibliography	177
Appendix One The Translated Text of MUL.APIN	187
Appendix Two The Babylonian Month-Names	206
Appendix Three Tablet and Line Correspondences with Hunger & Pingree	207
Subject Index	209
Author Index	217
Akkadian and Sumerian Word Index	220
MUL.APIN Text Citation Index	221