

# Contents

1	The project	1
1.1	Plural phenomena	1
1.2	Plurals in mathematics and logic	4
1.3	Strategies for a logic of plurals	7
1.4	Manoeuvres of a conservative logician: a case study	9
1.5	Plan of the book	12
2	History	15
2.1	Distributive and collective predication	16
2.2	Mill	19
2.3	Frege	20
2.4	Leśniewski	22
2.5	Russell	25
2.6	Russell to Boolos	30
3	Changing the subject	33
3.1	Changing the subject to sets	34
3.2	Uniformity	35
3.3	Against the naive version of changing the subject	37
3.4	Changing the subject <i>and</i> the predicate	37
3.5	The pain of paradox	40
3.6	Changing the subject is simply not on	42
3.7	Changing the subject in practice	42
	Appendix. Events to the rescue?	44
4	Predicative analyses	51
4.1	Russell's theory of plural descriptions	52
4.2	Other predicative analyses	56
4.3	The equivocity objection	58
4.4	Boolos's 'reciprocal illumination'	60
4.5	Boolos's second-order representation of plurals	61
4.6	Boolos and equivocity	63
4.7	Rumfitt's purified Boolosian scheme	64
	Appendix. Dummett and Frege on plurals	65

5	Terms—singular and plural	73
5.1	Terms	74
5.2	Varieties of singular term	76
5.3	Varieties of plural term	78
5.4	The Russellian idea of singular term	80
5.5	Nested terms	83
5.6	Empty terms	86
5.7	Predication	89
6	The indeterminacy of plural denotation	93
6.1	Two accounts of denotation	94
6.2	Plural descriptions: some elementary facts	95
6.3	Which account is correct?	96
6.4	Dissenting voices I	97
6.5	Free relatives and wh-questions	99
6.6	Dissenting voices II	101
6.7	Indeterminacy	102
7	Some basic ideas of plural logic	105
7.1	Variables and quantification	106
7.2	Inclusion	108
7.3	Distributive predicates	112
7.4	Collective predicates	113
8	Plural descriptions	119
8.1	A theory of descriptions	120
8.2	Formalizing the theory, definability, and ineliminability	123
8.3	Exercises for the reader	125
8.4	Superplurals	127
	Appendix. Sharvy's theory of descriptions	129
9	Multivalued functions	139
9.1	Varieties of function	140
9.2	Mathematicians and logicians	143
9.3	Functions and relations	145
9.4	The ambiguity objection	147
9.5	Proposals for eliminating them	150
10	Lists	153
10.1	Lists as terms	153
10.2	Term-forming 'and'	154

---

10.3	Lists as strings	158
10.4	Places and positions	162
10.5	Terms vs strings in the literature	165
10.6	Analyses assessed	167
	Appendix. In defence of multigrade predicates	172
11	Singular logic	181
11.1	Topic neutrality	182
11.2	Syntax	189
11.3	Axioms	191
11.4	Metatheorems	192
11.5	Semantics	193
	Appendix. Soundness and completeness proofs	197
12	Mid-plural logic	207
12.1	Ideas	208
12.2	Syntax	211
12.3	Axioms	212
12.4	Metatheorems	213
12.5	Semantics	214
12.6	Relation of mid-plural logic to singular logic	218
12.7	The algebra of plurals	219
	Appendix. Soundness and completeness proofs	222
13	Full plural logic	233
13.1	Syntax	233
13.2	Semantics	235
13.3	Expressive power	236
13.4	Partial axiomatization	240
13.5	Comprehension	242
13.6	Choice	243
14	Cantorian set theory	245
14.1	Plurals and sets	246
14.2	Cantor's collections	248
14.3	The empty set	250
14.4	Singletons	254
14.5	Ur-elements	258
14.6	A superstructure, not a foundation	260
14.7	Iterative Cantorian set theory	264
14.8	Using the plural in developing conventional set theory	269

Postscript: unfinished business	273
1 Pseudo-singular terms	273
2 Higher-level plural logic	275
3 Higher-order plural logic	279
4 Functions and empty terms	283
5 Other topics	287
<i>Principal symbols</i>	293
<i>Glossary</i>	295
<i>References</i>	301
<i>Index</i>	313