

Contents

1	Introduction	7
2	General Philosophical Benefits	9
2.1	Intrinsic Interest	10
2.2	Communicating Intuitive Notion of Logical Possibility	12
2.3	Mathematics and Metasemantics	14
2.3.1	Motivating Realism about Independent Questions . . .	16
2.4	Reducing Access Worries	18
3	Potentialism and the Core Project	21
3.1	Burali-Forti and Potentialism	21
3.2	Blocking an Objection	25
3.3	Justifying Replacement	27
4	The Language of Logical Possibility	31
4.1	Logical Possibility with Subscripts	32
4.2	Contrast With Other Modal Notions	35
5	The Formal System I: Basic Rules	37
5.1	Rules Inherited from First Order Logic	37
5.2	Basic \diamond Rules	39
5.2.1	Content-restriction	39
5.2.2	Rules	43
5.3	Example: Pairing Lemma	48
5.4	\square Inf. Rules	51
6	The Formal System II	55

7 Example: Lemmas about Well-Orderings	63
7.1 Lemma A	63
7.2 Lemma B	68
8 Useful Corollaries to Axioms	73
8.1 Diamond Simplification Lemmas	73
8.2 \square Ignoring	75
8.3 \square Collapsing Lemma	76
8.4 Box Relabeling	81
8.5 Multiple Definitions Lemma	81
8.6 Simplified Choice	82
9 Inf. Lemma & Wrapping Trick	85
10 Potentialist Paraphrases	99
10.1 Describing Standard-Width Initial Segments	99
10.2 Describing Standard Models of the Natural Numbers	102
10.3 The Translation	103
10.4 Note about these translations	108
11 Vindication of FOL Inference	111
11.1 Translation Lemma	112
11.2 Vindication of FOL	116
12 Defense of the ZFC Axioms	125
12.1 Foundation and Other Easy Cases	126
12.2 Comprehension	137
12.3 Infinity	141
12.4 Replacement	144
A Set Theoretic Mimicry of Sentences in \mathcal{L}	151
B Recursive Definition and Isomorphism Lemma	153
B.1 Recursive Definition Lemma	153
B.2 Isomorphism Lemmas	155
C Helpful Facts about Hierarchies	165
C.1 On Isomorphisms Between Initial Segments	165
C.2 Isomorphism Agreement Lemmas	166
C.3 V Comprability Lemma	168
C.4 One More Layer Lemma	175

CONTENTS	5
----------	---

C.5 Hierarchy Extending Lemma	178
C.6 Mass Hierarchy-Combining Lemma	180
C.7 Fleshing out Lemma	187