## Contents

Acknowledgments		9
Introduction		13
Frege's Importance	13	
Frege's Argument and the Structure of This Book	17	
Frege's Fundamental Distinctions: Sense vs. Reference,		
Function vs. Object	18	
ONE Psychologism		25
The Substitution of Mental Entities for Abstract Ones	26	
The Preference for Descriptions of the Genesis of		
Mathematical and Logical Notions over Reductive		
Definitions	39	
The Treatment of Logic as the Science of Human Thinking;		
the Reduction of Truth to Acceptance	47	
Two Formalism: Thomae, Curry, and Hilbert		54
Game Formalism	55	
Curry's Formalism	65	
Hilbert's Finitism	76	
THREE Deductivism		105
The Frege-Hilbert Controversy	106	
The Nature of the Axiomatic Method	107	
Axioms vs. Definitions	110	
Consistency Proofs	115	
Summary and Evaluation	117	
Hilary Putnam's Deductivism	119	
Some General Considerations against Deductivism	131	
FOUR Mill's Empiricism		137
Mill's View	137	

## CONTENTS

Frege's Criticism of Mill	153
Is a Millian Account of Number Theory Possible?	157
FIVE Frege's Philosophy of Mathematics	161
General Considerations	161
Axioms, Definitions, Inference, and the Epistemology of	
Mathematics	171
Arithmetic	185
The Analysis of the Concept of Number	185
The Technical Solution	199
Set Theory	204
Criticisms of Frege's Theory	211
The Contradiction in Frege's System	211
The Circularity Objection	220
Logic vs. Set Theory	224
The Problem of Multiple Reductions	228
Concluding Remarks	233
Bibliography	235
Index	241