Contents

INTRODUC	TIO	N	1
Part I. THE	EOR	ETICAL ASPECTS OF LANGUAGE	
Chapter	1.	On syntactical categories	19
Chapter	2.	Logical syntax and semantics	38
Chapter	3.	Idioms	47
Chapter	4.	Intertranslatability of natural languages	56

Part II. ALGEBRAIC LINGUISTICS

Chapter	5.	A quasi-arithmetical notation for syntactic	
		description	61
Chapter	6.	Some linguistic obstacles to machine translation	75
Chapter	7.	(with E. Shamir) Finite state languages: Formal representations and adequacy problems	87
Chapter	8.	(with C. Gaifman and E. Shamir) On categorial and	
		phrase structure grammars	99
Chapter	9.	(with M. Perles and E. Shamir) On formal properties of simple phrase structure grammars	116

Part III. MACHINE TRANSLATION

Chapter 10.	The state of machine translation in 1951	153
Chapter 11.	Aims and methods in machine translation	166
Chapter 12.	A demonstration of the nonfeasibility of fully automatic high quality translation	174
Chapter 13.	The future of machine translation	180
Chapter 14.	Four lectures on algebraic linguistics and machine translation	185

x CONTENTS

Part IV. SEMANTIC INFORMATION

Chapter 15.	(with R. Carnap) An outline of a theory of semantic information	221
Chapter 16.	An examination of information theory	275
Chapter 17.	Semantic information and its measures	298
Part V. MECHA	NIZATION OF INFORMATION RETRIEVAL	
Chapter 18.	A logician's reaction to theorizing on information search systems	313
Chapter 19.	Theoretical aspects of the mechanization of litera- ture searching	330
Chapter 20.	Is information retrieval approaching a crisis?	365
References	••••••	373
Indexes		379