Foundations of Language (Brain, Meaning, Grammar, Evolution)

Ray Jackendoff (2002)
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Foundations of Language shows one of the most fundamental new thinkings in linguistics since Noam Chomsky's *Aspects of the Theory of Syntax* in 1965. *Foundations of Language* opens up vivid new perspectives on every major aspect of language and communication: grammar vocabulary, learning, origins of language, and the relationship of language and thought to the real world. It puts linguistics at the centre of the search for understanding human nature and human cognition.

In my opinion, the author presents in this book a broad survey in linguistics, introducing his personal perspective in the field of theoretical linguistics. Ray Jackendoff proposes a new holistic theory of the relation between the sounds, structure, and meaning of language and their relation to the mind and the brain. Jackendoff goes on to defend a radical conception of how the brain stores and processes language, and how grammar relies on parallel generative systems that are integrated through interface components. The interdisciplinary approach of *Foundations of Language* makes the book specially up to date, recognizing the interaction of psychology, neuroscience, biology, and philosophy, setting a groundbreaking agenda for close co-operation of these knowledge areas.

According to the author, this book has been written with three concentric audiences in mind, being the most central, of course, linguistics of all specialities and all persuasions. The next ring includes those disciplines that look to linguistics for theoretical models: psycholinguistics, neurolinguistics, language acquisition and computational linguistics. The outer ring includes all those having some professional concern with languages, including psychologists, cognitive scientists, neuroscientists, philosophers of language and philosophers of mind, and, perhaps, evolutionary biologists.

The general structure of the book has been designed to be read and re-read by anyone seriously interested in the state of the art of research on language. The book is divided into three parts:

Part I, 'Psychological and Biological Foundations', lays out the fundamental issues that motivate generative linguistics. First, in the interests of recognising what a theory of language is responsible for, Chapter 1, 'The Complexity of Linguistic Structure', is devoted to briefly presenting the structure associated with a simple sentence of English -a wealth of structure that is well-established independent of any doctrinal considerations. Then, the author presents a discussion based on the three basic tenets of generative linguistics that he thinks have stood the test of time: mentalism combinatoriality and nativism. Thus, in chapter 2, 'Language as a Mental Phenomenon', he states and develops the idea that language is instantiated in the minds and therefore the brains of the language users, so that linguistics is to be regarded as a branch of psychology. In chapter 3, 'Combinatoriality', after recalling the infinite number of new sentences that can be generated and understood out of a finite set of generative rules, Jackendoff discusses some problems that combinatoriality poses for popular theories of semantic memory and neural nets. Chapter 4, 'Universal Grammar', deals with Chomsky's idea of a cognitive specialization 'wired' into us through human evolution so that we can actually dedicate specific resources to language learning during our childhood.

Part II, 'Architectural Foundations', contains the theoretical core of the book, which is the point where it diverges from standard generative theory. The author tries to move linguistic theory itself closer to the possibility of explanation in terms of the brain, by embracing its complexity and reorganizing its architecture accordingly. Chapter 5, 'The Parallel Architecture', exposes the traditional assumptions that the author finds mistaken and move him to develop alternatives: syntax is not the only source of grammatical organization, but there are other parallel sources such as phonology and semantics. The three major components of linguistic structure are the product of these independent generative systems, and each one is further subdivided into independent tiers. Chapter 6, 'Lexical Storage Versus Online Construction', analyzes the lexicon and its role as part of the interface components between these different generative sources. Chapter 7, 'Implications for Processing', reviews language perception and production through the parallel model. Chapter 8, 'An Evolutionary Perspective on the Architecture', exposes how language learning capacity through human evolution could have been incremental if the parallel model is considered, and how these stages are reflected in the organization of present-day language.

Part III, 'Semantic and Conceptual Foundations', is devoted to working out foundations of semantics in a manner compatible with the goals of generative linguistics, incorporating insofar as possible the insights of several approaches, including traditional philosophy of language, logic and formal semantics, lexical semantics of various stripes, cognitive grammar, psycholinguistic and neurolinguistics approaches, and the author's own conceptual semantics and related work. Chapter 9, 'Semantics as a Mentalistic Enterprise', discusses semantic theory in mentalistic terms as well as its compatibility with generative grammar. Chapter 10, 'Reference and Truth', considers the trends in perceptual psychology and formulates the relation between linguistic expressions and the real world as conceptualized by the language user. Chapter 11, 'Lexical Semantics', addresses the issue of lexical decomposition, and chapter 12, 'Phrasal Semantics', develops a theory of phrasal composition. Finally, a brief epilogue in chapter 13, 'Concluding Remarks', attempts to pull everything together by establishing relationships among the different concepts presented in the book.

In general terms, Jackendoff supports in a moderate and reasonable way with some of the critics of Chomsky's many controversial claims. *Foundations of Language* is an updated well written work, that clearly provides a valuable and interesting account of the Chomskian approach to linguistics. Jackendoff considers that this school of thought should reform itself in order to better respond to some of the intellectual challenges that it currently faces, providing some clues and new contributions to the understanding of the brain architecture. In this sense, Jackendoff's approach brings new views on this matter, and joins in a complementary way the work developed by cognitive linguistics.

This book is readable, stylish, and accessible to a wide readership. In addition, it provides new insights on the evolution of language, thought, and communication. It also becomes an asset to all linguists (particularly psycholinguists, neurolinguists, and computational linguists), neuroscientists, cognitive psychologists, evolutionary psychologists, philosophers of language, philosophers of mind, and all those interested in the role of language in human development, cognition, and communication. In summary, this book can be considered as a landmark in linguistics and cognitive science.

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