

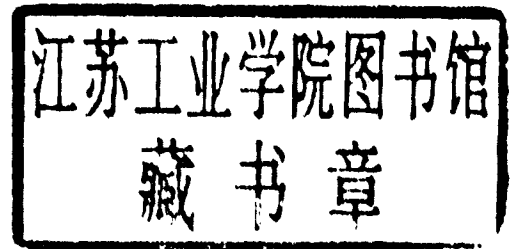
Steven E. Weisler and Slavko Milekic

Theory of Language



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Steven E. Weisler ■ Slavko Milekic



A Bradford Book

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Theory of Language

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Preface

Theory of Language was originally conceived as a CD-ROM-based introduction to linguistic theory with the aim of providing students with a “digital learning environment” in which to investigate linguistic theory. Our goal was to develop an application that encouraged exploration, hypothesis testing, argumentation, and lively discussion; critical ingredients in an inquiry-based approach to teaching science. We also shared the conviction that presenting real data, demonstrating actual results, and challenging students to build their own analyses would be facilitated by the tools available in the multimedia repertoire, helping to make more apparent what it is that fascinates linguists about language and theory.

As this project developed, we engaged many of the fundamental questions that all textbook authors consider: How should the material be organized? What level of difficulty should we seek? How do we present analyses that seem to change in the time it takes to write about them? Because we were working in a computational environment, novel solutions to familiar problems sometimes emerged, and many of these ideas suggested new ways to approach the design of a conventional textbook as well. For example, the availability of hypertext in multimedia applications encouraged us to write the text on several levels, with historical context, conflicting analyses, and in-depth discussions running parallel to the “main” discussion. The desire to promote interaction between the student and the program led us to make broad use of questions based on linguistic data; to provide a rich, easily accessed glossary; and to alter the rhetorical style of the text so that it did less telling and more showing.

The book you hold in your hand is the result of incorporating the materials and pedagogical strategies developed for *Theory of Language: CD-ROM Edition* into a (somewhat unconventional) textbook. The book is designed to be used either on its own, or in conjunction with the electronic version. Both contain the complete text, along with questions, and a glossary (although digital edition adds expert interviews, a tree building and analysis module, a transcription tutorial, and other electronic features). The text is designed for beginning- and intermediate-level undergraduate classes in linguistic theory, but with a judicious selection of the more advanced materials presented in the “In Detail” commentaries, the level of presentation can be adjusted in either direction to a considerable degree.

The authors thank their colleagues Donald Shankweiler, David Caplan, Marcus Raichle, Harold Goodglass, Peter Friesen, Tom Wasow, Ivan Sag, Peter Sells, John Rickford, Tom Roeper, Lyn Frazier, Mark Feinstein, and Noam Chomsky for their advice and commentary. We also acknowledge a large debt to our students who played important roles on this project over the last four years, especially Wil, Jim, Chas, Matt, Seth, Matt, Killer, Alan, Diane, and Anne. We are particularly indebted to our editor at MIT Press, Amy Brand, for her willingness to explore with us the uncharted waters of educational software, and to Ellen Rooney who undertook the challenging job of designing a book layout for *Theory of Language* with patience and creativity.

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Steve Weisler thanks the other members and former members of the School of Cognitive Science at Hampshire, especially Rich Muller (who originally conceived *Theory of Language: CD-ROM Edition*), Mark Feinstein, Lee Spector, Neil Stillings, and Stephen Laurence for help all along the way. Wil Doane has contributed technical, stylistic, and linguistic advice that has been crucial to the success of this work. Maureen Mahoney provided the emotional support and intellectual encouragement that made it possible for me to carry out this project; quietly, seamlessly, lovingly.

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Note to the Teacher

Theory of Language and its electronic counterpart *Theory of Language: CD-ROM Edition* are intended to provide an introduction to linguistic theory from the perspective of the contemporary generative tradition. In the six chapters of this text (Introduction; Sounds; Words; Sentences; Meaning; and Brain and Language), we introduce and develop detailed analyses of a wide range of linguistic phenomena with extended theoretical discussions, a presentation of alternative points of view (for example, minimalist, nonminimalist, and nontransformational approaches to filler-gap dependencies), and an emphasis on hypothesis testing and theory construction.

The first four chapters of *Theory of Language* cover topics in phonetics, phonology, morphology, and syntax, presenting this material in a historical context, and providing enough detail to allow the excitement of doing real linguistic analysis to come through. The third chapter (Words) and the final two chapters (Meaning and Brain and Language) approach language from the broader perspective of cognitive science, incorporating philosophical, psychological, and neurolinguistic perspectives.

Even a casual perusal of the text reveals a somewhat unconventional organization, motivated by our desire to bring linguistics alive for the beginning student, and inspired by our work on *Theory of Language: CD-ROM Edition*. You will find extended commentaries, historical discussions, controversial debates, graphical illustrations and frequent questions running alongside the “main” text. Although the main text is intended to be read sequentially, and does not depend on these sidebar discussions (which often are only tangentially related to the main material), this auxiliary material considerably enriches the presentation. In many classroom circumstances, reading through the supporting material will deepen the impression made by the text and greatly expand the student’s grasp of the details of analysis and the motivations for the theory. The Pro and Con sections can be especially provocative, since each of these commentaries is written as if its point of view is correct (putting students in the position of resolving the debate).

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1. Introduction

1.1 The Pervasiveness of Language

How many social activities can you think of that do not involve language in any way? It is difficult to think of many examples, because language is a part of virtually every aspect of human interaction. Whether we are reading the newspaper, giving a speech, conversing, listening to the lyrics of a song, or muttering to ourselves, we use language. Some researchers have even suggested that our thoughts are cast in terms of the language we speak (Whorf 1956; Bloom 1981; see also Fodor 1975:56).

Precisely because language is pervasive, it seems an unlikely candidate for scholarly inquiry. We tend to take our linguistic ability for granted, scarcely noticing its nature or use. However, as cognitive scientists have discovered, the investigation of an organism's most basic abilities and skills often lends the greatest insights into its nature (Chomsky 1968:24). In this spirit, we note that normal bodily functions such as respiration, digestion, and circulation are central topics for biologists.

The study of language is also motivated by an even more compelling consideration: Language may distinguish humans from all other organisms (Chomsky 1968:6). Consequently, by studying language we hope to uncover some of the fundamental properties of human nature. One of our goals in this inquiry is to determine the most fruitful theoretical perspectives and best analytic methods to advance our investigation.

What would you consider to be some other "basic" properties of human beings? Are any of these so important that an organism lacking them would not count as human?

How many academic disciplines that you are familiar with are concerned with the study of language? Can you list some of these for which matters of language are particularly important?

People often report that they think in the language that they speak. But the concept of thinking itself needs clarification before we can evaluate this claim. Thinking crucially involves unconscious operations. Consequently, we do not have introspective access to our thought processes. We should not expect to be any more aware of the essential nature of our cognition than of our

internal digestive processes. Perhaps thoughts are merely translated into a linguistic form as they make their way into consciousness. Thus, the so-called "language of thought" may be *nonisomorphic* to linguistic representation (see Fodor 1975).

In this view, thoughts, which may be initially represented quite differently from language, are given linguistic form; for example, when

they are expressed. This analysis leaves open the question of whether, and to what extent, people who speak different languages think differently, a position sometimes known as the Whorfian Hypothesis (see Carroll 1956; Bloom 1981). ■

PRO 1.1

Although many animals have communication systems of varying degrees of complexity, only humans have language. Human language involves abstract vocabulary arbitrarily related to meanings. The patterns that underlie the structure of our words and sentences are not instantiated in the communication systems of other organisms. Human language is open-ended in its expressiveness and suitable for a wide range of purposes to a far greater extent than animal analogs. Finally, efforts to teach natural languages to non-human animals have been of limited success, suggesting that the ability to learn language, like the ability to use language, itself, is a species-specific ability of human beings. ■

CON 1.1

Human language is a communication system that shares many of its significant properties with other nonhuman communication systems. Although it is indisputable that human language has some distinctive properties (in the same sense that the human digestive system has characteristics that distinguish it from the digestive systems of other organisms), the differences are only a matter of degree. Indeed, how could it be otherwise, given that humans are genetically close to other mammals, and must have evolved their linguistic capacity by building on similar capacities of their ancestors — capacities that must also be present in contemporary organisms that are closely related phylogenetically? Finally, attempts to teach human language to other primates have offered evidence that central syntactic and semantic features of human language can be taught to some other organisms. ■

1.2 The Central Role of Language

To a large degree, even our most mundane activities depend on language. Although body language, gestures, and context provide considerable information, without language our ability to express ourselves would be considerably diminished.

1.3 Homo Loquens

Humans are rare among mammals by virtue of spending such a large percentage of each day vocalizing. Of course, other animals do vocalize in certain circumstances, but adult humans do so more frequently than most mammals. Moreover, humans are verbose only in some stages of *ontogeny*. Human infants, for example, especially prior to the age of six months, are prone to extended periods of silence.

How do people with severe hearing impairments manage to follow spoken conversations? Discuss the challenges that such speakers face in dealing with different kinds of speech sounds or dialects.

Biologists have suggested that many biological processes are associated with a particular period of ontogeny — they have an “onset” (when the process starts) and an “offset” (when it terminates). Can you think of a few other features of human development that can be characterized in these terms?

There are some mammals, however, that do not fit this profile, the dog being an excellent case in point. Dog barking is a very frequently displayed vocal signal that shares certain characteristics with language: It is produced across a wide range of eliciting circumstances. Since closely related species (such as the wolf) rarely if ever bark, these properties of the dog vocalization system stand out, raising important questions about communication systems and *phylogeny*. ■

IN DETAIL 1.3-A

Even when language does emerge, different features do so at different ontogenetic stages. Language development begins with the sound system, followed by the first words, usually by 10 to 15 months of age. One-word utterances are next, followed typically by "sentences" of one or two words in length. Language seems to unfold in stages, each with its own developmental schedule. Furthermore, linguistic features seem to be acquired in an order that holds cross-linguistically.

IN DETAIL 1.3-B

For example, the inventory of sounds that children use in their first utterances is remarkably similar from language to language, first words share common characteristics of sound and meaning, and many of children's mistakes emerge irrespective of the language being learned. Such considerations have led linguists to conclude that there must be a species-general, biologically-based language-learning ability that guides the acquisition of any natural language by all normally developing speakers. We will consider this theme in more detail below. ■

1.4 Language and Thought

Linguists and other cognitive scientists are centrally interested in understanding the relationship between language and thought. Do we think in language? Is thought simply nonvocal language, or is the linguistic system (partly) distinct from more general thought processes? Suppose we present you with a subtraction problem like:

$$1724 - 982 = ?$$

and a sentence like:

Please, don't understand this sentence!

Although you can avoid computing the difference for the subtraction problem, you cannot stop yourself from interpreting the sentence. Sentence interpretation and mathematical calculation are different with respect to their *automaticity*. This suggests that different cognitive systems are involved in each of these tasks (see Fodor 1983, Garfield 1987).

But before we can address these rather subtle questions in much detail, we must clarify what we mean by thought, and identify the aspects of language we are concerned with. The latter, especially, is a central goal of the study of linguistics.

Most cognitive processes that we loosely refer to as "thinking" are unconscious processes. Subjects' intuitions about how they think are probably just their beliefs about thinking rather than being about thinking itself. Discuss how one could develop an understanding of unconscious thought processes.