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Autore	Brasoveanu Adrian
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Nota di contenuto	Chapter 1. Introduction -- Chapter 2. The ACT-R cognitive architecture and its pyactr implementation -- Chapter 3. The basics of syntactic parsing in ACT-R -- Chapter 4. Syntax as a Cognitive Process: Left-corner parsing with visual & motor interfaces -- Chapter 5. Brief introduction to Bayesian methods and pymc3 for linguists -- Chapter 6. Modeling linguistic performance -- Chapter 7. Competence-performance models for lexical access and syntactic parsing -- Chapter 8. Semantics as a cognitive process I: Discourse Representation Structures in declarative memory -- Chapter 9. Semantics as a cognitive process II: Active search for cataphora antecedents and the semantics of conditionals -- Chapter 10. Future directions.
Sommario/riassunto	This open access book introduces a general framework that allows natural language researchers to enhance existing competence theories with fully specified performance and processing components. Gradually developing increasingly complex and cognitively realistic competence-performance models, it provides running code for these models and shows how to fit them to real-time experimental data. This

computational cognitive modeling approach opens up exciting new directions for research in formal semantics, and linguistics more generally, and offers new ways of (re)connecting semantics and the broader field of cognitive science. The approach of this book is novel in more ways than one. Assuming the mental architecture and procedural modalities of Anderson’s ACT-R framework, it presents fine-grained computational models of human language processing tasks which make detailed quantitative predictions that can be checked against the results of self-paced reading and other psycho-linguistic experiments. All models are presented as computer programs that readers can run on their own computer and on inputs of their choice, thereby learning to design, program and run their own models. But even for readers who won't do all that, the book will show how such detailed, quantitatively predicting modeling of linguistic processes is possible. A methodological breakthrough and a must for anyone concerned about the future of linguistics! (Hans Kamp) This book constitutes a major step forward in linguistics and psycholinguistics. It constitutes a unique synthesis of several different research traditions: computational models of psycholinguistic processes, and formal models of semantics and discourse processing. The work also introduces a sophisticated python-based software environment for modeling linguistic processes. This book has the potential to revolutionize not only formal models of linguistics, but also models of language processing more generally. (Shravan Vasishth) .