Briefly Noted

Syntactic Categories and Grammatical Relations: The Cognitive Organization of Information

William Croft
(University of Michigan)

Chicago: The University of Chicago Press, 1991, xiii + 331 pp. Hardbound, ISBN 0-226-12089-9, $70.00; paperbound, ISBN 0-226-12090-2, $34.95

Seeking to develop the first satisfying universal definition of basic grammatical units of the major syntactic categories such as "noun," "verb," and "adjective" and of the principal grammatical relations, "subject," "object," and "oblique," William Croft employs the methods of cross-linguistic or typological analysis and cognitive linguistics.

Drawing evidence from a wide variety of languages, Croft shows that the traditional semantic definitions for the major syntactic categories (e.g., nouns denote persons and things) represent the unmarked correlation or "prototype" for the syntactic functions of reference, predications, and modification. Turning to recent work in cognitive linguistics and discourse analysis, Croft argues that the syntactic functions represent universal ways of conceptualizing experience for the purpose of communicating information in language.

Croft then applies this hypothesis to grammatical relations between the verb and its dependent subject, object, and oblique noun phrases, arguing that one cannot account for cross-linguistic patterns of marking using semantic roles such as "agent" or "instrument." He proposes instead an "idealized (prototypical) cognitive model" of verb-meaning based on causal relations among participants in the action that human beings use in conceptualizing events, which largely determines the choice of subject, object, and oblique forms.—*From the publisher's announcement*

Entities and Indices

M.J. Cresswell
(Victoria University of Wellington)

Dordrecht: Kluwer Academic Publishers, 1990, xi + 274 pp.
(Studies in Linguistics and Philosophy 41)
Hardbound, ISBN 0-7923-0966-9, $79.00, £45.00, Dfl 130.00

How is one to represent the meaning of a sentence such as *Everyone who is actually rich might have been poor*? Cresswell's thesis is that natural language is ontologically committed to possible worlds, which play a similar kind of semantic role to that played by times. In particular, there are sentences that require evaluation at a sequence of possible worlds rather than just a single world.—*G.H.*

Logic, Language, and Meaning
Volume I: Introduction to Logic
Volume II: Intensional Logic and Logical Grammar

L.T.F. Gamut (pseud.) (Johan van Benthem, Jeroen Groenendijk, Dick de Jongh, Martin Stokhof, and Henk Verkuyl)
(Universities of Groningen, Amsterdam, and Utrecht)

Chicago: The University of Chicago Press, 1991, Vol I: xiv + 282 pp.,
Vol II: xvi + 349 pp.
Vol I: Hardbound, ISBN 0-226-28084-5, $55.00; paperbound, ISBN 0-226-28085-3, $19.95
Vol II: Hardbound, ISBN 0-226-28086-1, $60.00; paperbound, ISBN 0-226-28088-8, $24.95

Editor's note: The following is excerpted from Barbara Partee's enthusiastic foreword to this book.[1]
[This is] the first comprehensive introduction to logic, language, and meaning that includes on the one hand a very fine introduction to logic, starting from the beginning, and on the other hand brings up at every point connections to the study of meaning in natural language, and thus serves as an excellent introduction and logical background to many of the central concerns of semantics and the philosophy of language as well.

This book is pedagogically beautifully designed, with the central developments very carefully introduced and richly augmented with examples and exercises, and with a wealth of related optional material that can be included or omitted for different kinds of courses (or self-teaching) for which the book could very well be used: I could imagine tailoring very fine but slightly different courses from it for inclusion in a linguistics curricu-

lum, a philosophy curriculum, a cognitive science curriculum, or an AI/computational linguistics program. ... I think the authors have done a superb job of combining pedagogical user-friendliness with the greatest attention to rigor where it matters.

One very noticeable difference from familiar introductory logic texts is the inclusion of accessible introductions to many nonstandard topics in logic, ranging from approaches to presupposition and many-valued logics to issues in the foundations of model theory, and a wide range of more advanced (but still very accessible) topics in Volume II. The book thereby gives the student an invaluable perspective on the field of logic as an active area of growth, development, and controversy, and not simply a repository of a single set of eternal axioms and theorems. Volume II provides an outstanding introduction to the interdisciplinary concerns of logic and semantics, including a good introduction to the basics of Montague grammar and model-theoretic semantics more generally.

I first became acquainted with this book in its Dutch version during a sabbatical leave in the Netherlands in 1982–83. ... I started lobbying then for it to be translated into English, and I'm delighted that this has become a reality. I hope English-speaking teachers and students will appreciate the book as much as I anticipate they will.—*Barbara H. Partee, University of Massachusetts, Amherst*

Anaphora and Quantification in Situation Semantics

Jean Mark Gawron and Stanley Peters
(Hewlett Packard Laboratories and Stanford University)

Stanford: Center for the Study of Language and Information, 1990, xi + 187 pp.
(CSLI Lecture Notes 19)
(Distributed by The University of Chicago Press)
Hardbound, ISBN 0-937073-49-0, $37.50;
paperbound, ISBN 0-937073-48-2, $15.95

"This book is an investigation into the semantics of quantification and anaphora with third-person singular pronouns. Our goal will be to determine what consequences an adequate semantic account of both phenomena has for our general theories of quantification and anaphoric relations. We will defend the claim that the distinctions that need to be made at the level of content are too rich for

a theory that attempts to capture quantificational and anaphoric ambiguities in syntactic representations through such devices as NP-indexing and tree geometry."—*From the authors' introduction*

Aspects of Speech Technology

Mervyn A. Jack and John Laver (editors)
(Centre for Speech Technology Research, University of Edinburgh)

Edinburgh University Press, 1988,
viii + 291 pp.
(Edinburgh Information Technology Series 4)
(Distributed in the U.S. by Columbia University Press)
Hardbound, ISBN 0-85224-568-8, $55.00

Mervyn Jack and John Laver have edited a compact reference work that covers recent core areas of speech technology. The intent is to provide a critical tutorial discussion along with a comprehensive bibliographical source. At the time of publication (1988) the editors and all the contributing authors were members of the Centre for Speech Technology Research at Edinburgh University.

The book has five chapters: two on speech recognition, one on speech synthesis, one on speaker verification, and one on helium speech. All the chapters share certain excellent qualities; they are well written, they give extensive bibliographic support, and the authors take the time to compare and evaluate competing approaches. Each chapter presents a balance of early and recent work and a balance of basic knowledge and applied practice. These are the strengths of the book, and I would recommend *Aspects of Speech Technology* to an advanced student who was interested in starting a project in one of these areas.

I would recommend it, however, with a word of caution. The two chapters on speech recognition, which together make up half the book, reflect the particular viewpoint that (1) pattern matching using dynamic programming techniques seems to be a short-term solution that is inextricably linked to word-based templates and therefore is not easily applicable to very large or open vocabularies; and (2) that we can anticipate the imminent emergence of high-accuracy speech recognition systems that identify sub-word phonetic units based on the kind of knowledge that has been accumulated over the last several

decades' work in acoustic phonetics. Even by 1986 or 1987, it should have been clear that there was no necessary link between dynamic programming pattern-matching algorithms and closed vocabulary applications, and that the prospect for high-performance speech recognition systems based on acoustic phonetic expertise was dim and getting dimmer. This renders the speech recognition portion of the book somewhat less useful than it might be. Still, one of the speech recognition chapters offers an excellent review of dynamic time warp (DTW) recognition theory and practice, and the other is a wonderfully comprehensive review of the acoustic characteristics of English consonants.—*Jared Bernstein, SRI International*

Applied Computer Translation [journal]

Tony McEnery (editor)
(Department of Computing, University of Lancaster)

Sigma Press (1 South Oak Lane, Wilmslow, Cheshire, England SK9 6AR), quarterly from January 1991
ISSN 0960-0825
Library and corporate subscriptions: £60.00 in the U.K., $120.00 elsewhere; individual subscriptions at half price.

"This journal aims to promote and examine three things, namely machine translation, computer-aided language learning, and the relationship of those two areas to one another and other relevant disciplines. As part of this, articles will be presented that will examine the past, present, and future of both disciplines. A main aim of the journal is to examine current work in a light of critical evaluation: the journal seeks applied work. However, in saying this it must be noted that there is also room for three other types of articles: an examination of theories, a discussion of current and future issues, and finally articles which set out to put a current issue in a very firm context, providing a good, solid review of an important field."—*From the editorial, issue 1(1)*

Autolexical Syntax: A Theory of Parallel Grammatical Representations

Jerrold M. Sadock
(University of Chicago)

Chicago: The University of Chicago Press, 1991, xii + 254 pp.
(Studies in Contemporary Linguistics)
Hardbound, ISBN 0-226-73344-0, $45.00;
paperbound, ISBN 0-226-73345-9, $22.50

"This book explores the hypothesis that natural-language expressions are organized along a number of simultaneous informational dimensions, in each of which the allowable structural patterns form a system that can be specified by a set of explicit rules. Each of these rule systems, which we may call a component, or module, is an autonomous grammar of a single informational dimension, and therefore, the organization of an expression in one module need not correspond to its organization in another, though there will be definite limits on the degree to which the various autonomous descriptions of a single natural-language expression can diverge from one another."—*From the author's introduction*

Meaning and Grammar: An Introduction to Semantics

Gennaro Chierchia and Sally McConnell-Ginet
(Cornell University)

Cambridge, MA: The MIT Press, 1990, xiii + 476 pp.
Hardbound, ISBN 0-262-03162-0, $29.95

"We focus on what has come to be known as logical, truth-conditional, or model-theoretic semantics," say the authors. This new textbook covers: what semantics is about; denotation, truth, and meaning; quantification and logical form; meaning in speech acts; intensionality; indexicality, discourse, and presupposition; lambda abstraction; word meaning; and generalized quantifiers.

Elsevier's Dictionary of Mathematical and Computational Linguistics

Yvan Venev
(UNESCO, Paris)

This is a dictionary for translation, not definition. Words and phrases are translated between English, French, and Russian, with phrases being entered under all their significant words. In all, there are 7697 entries, from *Abelian* and *aphasia* through to *vowel* and *zone bit*, covering terms from artificial intelligence, automata theory, computational linguistics, computer-assisted instruction, linguistics, logic, machine translation, mathematical linguistics, psycholinguistics, and many related areas.

To test the dictionary's coverage, I tried looking up all the technical terms from the tables of contents of a couple of issues of *Computational Linguistics*. I was successful with most of the terms, but found some surprising omissions: *pronoun, anaphora, phrase structure grammar* (not even *phrase* is given), and *parse tree* (not even *parse* is given, though *parsing* and *tree* are). — G.H.