2. Compare the rather amusing confusion produced by the most prominent bibliography of the field published to date, Gazdar *et al.* (1987). The book is called *NLP in the 1980s* on the cover and title page, for The Outside World, so to speak. Inside the book, the list itself is called "CL in the 1980s," for The Inside World. In addition, it is computer-accessible as *CLBIB* at Stanford, and letter mail must be sent to *CLBIB* at the School of Cognitive Sciences, University of Sussex.
3. It is to be hoped that this tendency will continue to develop, similar to the line of growing insight shown in the sequence of (titles of) books by Nilsson: *Problem-Solving Methods in AI* (1971), *Principles of AI* (1980/1982), and *Logical Foundations of AI* (1987, with Genesereth).
4. In this survey of CL courses Winograd (1983) as the most frequently cited reference, with 23 citations in 51 courses described as 'only CL'; the most frequently cited references in all 76 courses (including 25 described as 'courses with topics other than CL')—46 courses within North America and 30 outside North America—are: Winograd 30, King 10, Tennant 8, Schank and Riesbeck 7 (Cohen 1986:4).
5. A quick sketch of the local context at our department: University entrance level in Europe is in general considered to be equivalent to American junior college graduation. Four years at a European university are comparable to junior and senior year plus graduate studies up to Master's thesis in the U.S. Students enter our seven-to-eight-quarter CL program after at least one year study at a language department, and they have to take (or to have taken) optionals for two additional quarters. The core program in the first two to three terms consists of classes in linguistics, formal logic, and computer science (that is, introductory programming and an introduction to formal languages and automata theory). Students used to take the Winograd course at some point around the end of the core program and the beginning of the advanced terms. We are currently engaged in incorporating it into the core program (as of Spring 1990).
6. Setting aside the fact that ATNs are admittedly in decline, it is surprising to see how the choice of a language can determine which subjects to treat: see my previous remark on the differences between the Prolog edition and the other two versions. Programming an ATN in Prolog is not so thoroughly perverse as Gazdar and Mellish think it is (p. 96), nor is it too difficult. Some of our students succeed in doing so without much contriving, and it looks like really nice Prolog.

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Kwee TjoeLiong (in the U.S.: *TjoeLiong Kwee*) is a mathematician and a lecturer at the Department of Computational Linguistics, University of Amsterdam, is teaching courses in programming and in computational linguistics, and is doing research on generation and on modeling and testing of linguistic theories. Kwee's address is: Department of Computational Linguistics, University of Amsterdam, Spuistraat 134, 1012 VB Amsterdam. The Netherlands. E-mail: tl@alf.let.uva.nl

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Modelisation du dialogue: Représentation de l'inference argumentative (Modeling Dialogue: Representation of Inferential Argumentation)

Jacques Moeschler
(Université de Genève)

Paris: Hermès, 1989, 266 p. (Langue, raisonnement, calcul)
Hardbound, ISBN 2-86601-191-0, FF 200

Reviewed by
Klaus Schubert
BSO/Research

The other day a professor of linguistics told me about one of his student's works:"It is very mathematical but intelligent." If you want to know what this little *but* means, implies, and reveals, read this book.

Jacques Moeschler, who is engaged in the linguistics of French at the University of Geneva, offers a model for recognizing and formally representing the structure of dialogues. His work is a contribution to the insufficiently explored field of discourse analysis in the original sense of the term, that is, the analysis of oral conversation. Moeschler's analyses are based on a corpus of French telephone conservations and similar materials, but many of his findings may apply even to the broader field of text linguistics.

A special focus in Moeschler's argumentation is on the ways that propositions are linked up to form a text or a dialogue. Many text grammarians distinguish various kinds of linkedness in dialogues (cf. de Beaugrande and Dressler's *Kohärenz* vs. *Kohäsion,* 1981: 3ff). Moeschler's terms are *pertinence* for the connectedness in the context and *coherence* for the connectedness in the discourse situation. The central element in Moeschler's reasoning, which gives the book its special interest and also its individual flavour in the current flood of text-linguistic studies, is the notion of *connecteur.* To put it simply, such connectors are function words or word groups that link up propositions logically, temporally, or otherwise. Examples (which, due to their very nature, normally cannot easily be glossed out of context) are *et, ou, ne pas, quand même,* and *alors.*

The theoretical background of the work is to be sought in predicate logic and speech act theory. Among the major sources are works by Ducrot, Austin, and Grice. The book falls into three parts, of which the first is mainly dedicated to a predicate-logical analysis of the meaning of connectors. Although Moeschler pursues this analysis in much detail, the main object of his analysis remains the word itself, rather than some underlying semantic or logical representation. To my personal taste, this is the most important virtue of the book: Moeschler has understood that human language is richer than formal representations (cf. Schubert 1988a: 137–138). He gives this insight right in the introduction (p. 10), stating that in natural language, there are a large number of connectors that lack equiva-

lents in classical or nonclassical logical languages, and for which a logical translation into terms of logical constants is impossible ("*il existe un grand nombre de connecteurs en langue naturelle n'ayant pas de correspondants dans les langages logiques classiques ou non classiques et pour lesquels la traduction logique en termes de constante logique n'est pas possible*"). With these words Moeschler subscribes to the implicitness principle (Schubert 1988b), which basically says that an artificial representation has an inherently insufficient expressive power for rendering the full and unrestricted content of a text in a human language. Some of Moeschler's examples illustrate very well how the content of connector constructions is impoverished when rendered in predicate logic.

It would be a promising continuation of the work begun by Moeschler if his connector analyses were applied cross-linguistically and, in particular, in translation studies. The implicitness principle shows that expanding the scope of work in this way by no means requires any logical representation to be chosen as the main object of research rather than the words themselves. On the contrary, a cross-linguistic investigation of translation equivalences can, in my view, profit from an approach like Moeschler's.

Part 1 of the book analyzes the logical content of connectors, Part 2 discusses their function as markers of pertinence and, indirectly, of coherence, and Part 3 suggests a tree-structured discourse representation. This representation might be seen as one of many (for an overview of text models see Papegaaij and Schubert 1988: 13–14), if it were not for the specific view on connectors that underlies Moeschler's model. With the exception of a brief reference to scripts, the book at first sight does not seem to have any direct link to computational linguistics. Nevertheless, I am convinced that a study that approaches language at the grammatical and pragmatic level and leads toward a linguistically motivated formalization is worth the attention of computational linguists. I feel that materials of this kind are needed on a much larger scale than is currently available, to let computational linguists' skills in formalization and implementation be applied on a pertinent linguistic basis.

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Klaus Schubert holds a doctorate in General, Scandinavian, and Slavic Linguistics from the University of Kiel (Federal Republic of Germany). In 1985 he joined the DLT machine translation project at the BSO software house in Utrecht. Since 1989 he has been director of BSO/Research and leader of the DLT project. Schubert's address is: BSO/Research, Postbus 8348, NL-3503 RH Utrecht, The Netherlands. E-mail: schubert@dlt1.uucp

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Computational Linguistics: An International Handbook on Computer Oriented Language Research and Applications / Computerlinguistik: Ein internationales Handbuch zur computergestützten Sprachforschung und ihrer Anwendungen

István S. Bátori, Winfried Lenders, and Wolfgang Putschke (eds.)

Berlin: Walter de Gruyter, 1989, xxxiii + 933 pp.
(Handbooks of Linguistics and Communication Science 4 / Handbücher zur Sprach- und Kommunikations-wissenschaft)
Hardbound, ISBN 3-11-009792-3, DM 728.-

Reviewed by
Graeme Hirst
University of Toronto

First, the form of the book: The *Computational Linguistics Handbook* is very large. It contains 65 papers, organized in 12 sections, covering all aspects of computational linguistics in the widest sense of the term. It has nearly a thousand pages, most in two-column format, and weighs 2.2 kg. It's probably the first book in computational linguistics to include fold-out maps.

The book is in English and German: front matter is in both languages, and articles are in one or the other (about half in each language). One would have hoped that each article would be accompanied by at least a translation of the title and a short abstract in the other language, so that the unilingual user could judge the relevance of the article and possibly seek assistance with translation. But, unfortunately, only titles are translated, and only in the table of contents, not in the article itself. This makes browsing difficult for users who do not have some facility in both languages—and one of the values of the book is that it invites browsing.

The book is properly typeset throughout—there's no author's rough camera-ready copy here—which accounts at least in part for its high price. Nevertheless, typos (or copyediting infelicities) turn up a little more often than one would have hoped. And on a couple of occasions, the running heads are completely out of sync with the text.

Now the content: The goal of the *Computational Linguistics Handbook* (pp. xiv–xv) is to describe comprehensively the current state of research in the field, to survey the literature, to locate the field itself with respect to related disciplines and show its application in those fields, and to suggest how the field may be further developed. That's a big goal for a big book.

In the space for this review, I cannot even list each article