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BOOK REVIEWS


What constitutes comprehension? Suppose A remarks to B, in a sneering manner, “He turned out to be a real friend”. Unless B recognises that “he” is meant to refer to a specific individual C, and that the real import of A’s comment is pretty much the opposite of its literal meaning, B can hardly be said to have understood what A said in the sense in which we usually use the term. If B showed a failure to apprehend either of these aspects of the utterance, for instance, A could rightly say “No, you don’t understand me”, and elaborate upon the original utterance.

Comprehension, as the term is commonly comprehended, thus embraces a certain amount more than merely processing the literal meaning of a sentence – at least some components of it will routinely require reference to the discourse context. Yet by far the majority of experimental psycholinguistic studies of language comprehension have investigated the processing of isolated sentences in the absence of context.

This book is entirely concerned with the comprehension of language, and it is a pleasant surprise to find that it does not ignore the question of whether the vast majority of comprehension studies have in fact been inappropriately designed. Moreover, the collection provides an unusually broad sampling of the kind of research on language understanding currently in progress in psycholinguistics, from studies of syntactic and lexical processing during the comprehension of isolated sentences through studies of sentence comprehension in context to an AI parsing model (of an idiosyncratic type, it is true, but one which specifically lays claim to psychological reality).

Levelt and d’Arcais originated the book in a special seminar on sentence comprehension at the International Congress of Psychology in the summer of 1976. The inevitable publication lag has meant that several chapters have been overtaken by later research in some respects. In a sense the contribution to suffer most from this problem must be Levelt’s own chapter, a survey of sentence perception studies from 1970 to 1976; but in fact this remains an outstandingly useful paper. Hundreds of papers are included in the survey, and the cross-classification under multiple headings (measurement techniques employed versus variables investigated, for instance) makes it easy to use the paper for a number of different purposes. Moreover, it turns out to be even
better than it looks at first glance. For instance, our current knowledge of the processing of lexical ambiguity suggests that all readings of an ambiguous word are momentarily activated when the word is heard, irrespective of context (Swinney 1979), but that this multiple activation does not cause a general processing decrement (Mehler et al. 1978; Newman and Dell 1978). Levelt, writing before these latest findings were published, reached the same conclusion. So although the review is no longer quite up to date, and the issues with which it deals are no longer the currently most debated questions – for instance, the current opposition between serial modular versus interactive models had not been delineated by 1976 – it is as good an account of that period of comprehension research as one could wish, and should be put into the hands of all beginning graduate students in psycholinguistics – it could save them a lot of work.

Most of the remaining chapters report original experimental work. Nooteboom, discussing the use of prosodic cues in the understanding of language, informs us that if we are forced to listen to two speakers simultaneously, only very slight differences in pitch will enable us to distinguish between the two voices; and that perception of a phoneme segment can be _delayed_ until information contained in the following segments allows us to determine whether the segment in question was short or long. Wright and Wilcox report a series of inter-connected experiments designed to isolate and investigate independently the subcomponents of the task of reading and carrying out simple instructions. They were able to discover, for instance, that when two or three instructions following one another had the same surface form, the later ones became easier to process (though no easier to perform), a finding which could be of importance to the compilers of cookery books, do-it-yourself manuals and the like.

Three of the chapters, those of d’Arcais, Marslen-Wilson, Tyler and Seidenberg, and Carroll, Tanenhaus and Bever, deal with more theoretical issues in sentence processing. The first argues that the clause is an important unit of syntactic processing and that, other things being equal, main clauses are easier to process than subordinate clauses. The second, constructing something of a straw man and smashing it decisively down, argues that the importance of the clause as a syntactic unit does not therefore imply that semantic information contained in the clause must await processing until the syntactic unit as a whole has been isolated. The third concentrates on the propositional structure of utterances and how cues to what the authors call “functionally complete” units enable the hearer to identify potential propositional units.

A chapter by Pynte forms one more contribution to the extensive psycholinguistic literature on ambiguity (see Levelt’s review for an indication of how impressively large this literature had become by 1976). Pynte’s contribution is noteworthy because it reports studies carried out in French using sentences such as “le nouveau garde la porte”, in which all words beyond the first are
ambiguous. Such sentences in English ("the tall can hit") are much less satisfactory because English lacks the useful function word ambiguities of French. Disappointingly, Pynte's experiments failed to reach an unambiguous conclusion, but his attempt is an object lesson in what should happen more often in psycholinguistics. Too much psycholinguistic research has concerned itself exclusively with English, and has sometimes come up against insuperable confounds resulting from the structure of the language. In many cases these confounds could be avoided by conducting the experiments in another language. (See, for instance, Frauenfelder et al. 1980, on relative clause processing, exploiting the possibility to vary subject versus object relatives while holding word order constant that is available in French but not in English.) Early experimental psycholinguistic work often involved cross-linguistic observations exploiting the differences to be found between languages (e.g. Forster 1966), but such work somehow fell into disuse (so that of the more than 200 studies referred to in Levelt's survey, only five deal with languages other than English, and none of these make cross-linguistic comparisons). It is to be hoped that the recent revival of interest in striking capital out of differences between languages (e.g. Lukatela et al. 1980) will continue.

The one AI chapter in the book is an account by Riesbeck and Schank of a parsing system which forms part of the larger language processing system developed by Schank and his co-workers. It is clearly written, with the psychologist in mind, and contains well worked out examples of how the parser operates. The authors go out on a limb at the end of their paper by making explicitly testable psychological predictions from their model (albeit of a very general kind). However, their contribution is unnecessarily hard to follow for one simple reason: the reader's acquaintance with the semantic base on which the parser functions, Schank's conceptual dependency system, is assumed throughout, and backed up by only brief citations to other works. Technical terms such as PTRANS are used without any definition. It seems to the present reviewer that it is an unwarranted assumption for the likely readership of this book that they will be familiar with CD, or for that matter even recognise a CD representation when they see one.

The final chapter in the book is one by Clark which contains no new experiments, but argues for a particular view of comprehension, specifically, that outlined in the introductory paragraph to this review. Clark is concerned to take a middle line between those who would restrict comprehension to the literal processing of the sentence (e.g. "he turned out to be a real friend" without pronominal instantiation or computation of conveyed irony), and those who would include all the hearer's knowledge which happens to be brought into play by A's use of this particular sentence (e.g. B's acquaintance with the occurrence which prompted A's remark). The existence of differing points of view on this issue also concerns Levelt in his review; he comes to the rather gloomy conclusion that some groups of psycholinguists will probably
never agree: particularly those who customarily investigate the processing of isolated sentences using simultaneous measurement tasks versus those who use verification tasks (e.g. judging whether a sentence correctly describes a picture). The former will always continue to accuse the latter of not studying comprehension pure and simple because verification tasks contain other components – comparison and verification – besides comprehension.

There is surely, however, a case to be made for all types of research. Certainly it is clear that comprehension as we understand it in everyday use typically involves more than the identification of the literal meaning of a sentence; but it is not clear that this fact in itself necessarily invalidates studies of comprehension which have investigated the processing of sentences in isolation. In fact, Clark’s paper in the present volume indirectly provides a splendid argument in support of just the kind of research from which he wishes to disassociate himself. One of the examples he uses to illustrate how hearers draw inferences beyond the literal meaning of the sentence in comprehension is the indirect request; his model of the processing of indirect requests assumes that the direct interpretation of the utterance is computed first, and then, if this does not seem adequate in the context, further assumptions are constructed about the speaker’s intentions. Similarly, in the case of definite reference, Clark proposes that the description of the intended referent is computed first, and if no entity conforming to this description can be located in memory, additional assumptions are generated. In each case the first stage in processing comprises computation of the literal meaning of the utterance. If computation of the literal meaning of the utterance is a necessary stage in any sentence comprehension operation, then, it surely makes eminent sense to study it in isolation. It would be wrong to say that the study of sentence processing in isolation will tell us all there is to be known about the process of comprehension; but it will give us valuable insight into a vital part of the process. The more that a complex task such as comprehension can be broken down into subcomponents which can be analysed and described independently, the more we will eventually know about the task as a whole and the more useful, in terms of potential application, the knowledge will be.

Anne Cutler
Experimental Psychology
Sussex University
Brighton, UK

References


Anne Cutler is a psycholinguist whose research has concerned sentence comprehension and production in general, the processing of prosody and the implications of speech errors in particular. A Ph.D. at Texas and a stint at M.I.T. preceded her current research fellowship at the University of Sussex.


Metaphor, traditionally the domain of literary and poetic theory, has recently attracted the increasing attention of linguists, philosophers and even psychologists, who have begun to consider metaphor an interesting testing ground for more general views on language, meaning and conceptualisation (see, for example, Ortony 1979; Sacks 1979).

A traditional approach, rooted in the classical rhetoric from Aristotle to Quintillian, views metaphor essentially as a “figure” of discourse, an ornament of expression, and therefore limits the analysis of metaphor to poetic language. Yet this position has come increasingly under attack. By the eighteenth century, Jeremy Bentham had already observed the pervasiveness of metaphor in everyday language; in our century almost all analyses of metaphor claim that metaphorical processes are present in all linguistic manifestations and that metaphor is essential in our conceptualisation of things (see Jespersen 1922; Whorf 1939; Richards 1936; Langer 1942).

Even if it doesn’t explicitly mention this tradition, Metaphors we live by, by Lakoff and Johnson (L&J), is rooted in it, and probably represents the most radical statement to date. From their perspective metaphor becomes a matter of central concern not only in everyday language, but, first of all, in our conceptual system, in the very structure of our thought: “The way we think, what we experience, and what we do every day is very much a matter of metaphor”.

Two basic assumptions underlie the work of L&J. First, metaphor is not a matter of language, but of thought processes. Second, there is a homology between thought and language, the conceptual system and the linguistic