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H. H. Clark and E. V. Clark: *Psychology and Language: An Introduction to Psycholinguistics*. New York: Harcourt Brace Jovanovich, 1977.

D. J. Foss and D. T. Hakes: *Psycholinguistics: An Introduction to the Psychology of Language*. Englewood Cliffs, N.J.: Prentice-Hall, 1978.

D. S. Palermo: *Psychology of Language*. Dallas, Texas: Scott, Foresman, 1978.

Undergraduate psycholinguistics courses have been with us for years, but not so the ideal undergraduate psycholinguistics textbook. Quite the reverse: some perfectly awful pretenders have presented themselves. Suddenly, however, we are faced with an embarrassment of riches: three candidates, all of them authored by leading lights of the field. Which to choose is the question which this review will attempt to answer.

The possibilities for a title appear to be limited, comprising only variations on the phrases 'psychology of language', 'psycholinguistics' and 'introduction to'. Two of the three works under review, Clark and Clark (henceforth C&C) and Foss and Hakes (F&H) contrive in their titles to touch all bases; correspondingly these two are more comprehensive in scope than Palermo (P), which is skimpier in all respects. This will become clear from the sections to follow, in which the performance of the three contenders on central topics of psycholinguistics is compared in detail. The comparisons will also demonstrate that these are three very different books, not only in style and scope but in apparent purpose.

### **Linguistic background**

C&C's first chapter on 'the nature of language' is a basic introduction to some linguistic concepts, but at a very superficial level. It skips from topic to topic and covers nothing in depth. Moreover, it includes no linguistic theory of any kind. At other points in the book, however, a little linguistics is introduced as it is required. For instance, Chapter 5 (speech perception) contains an outline of basic phonological concepts; Fillmore's case grammar is given three pages of one of the child language chapters. There is no transformational grammar in the book at all, however. The term *transformation* is mentioned, indeed — but without definition and without theoretical justification, and oddly enough it is introduced in a chapter entitled 'memory for prose'.

Thus C&C have achieved the remarkable feat of writing a textbook of psycholinguistics, a discipline which has had a very close, often dependent relationship with linguistics throughout its existence, and ignoring the most influential body of modern linguistic work in its entirety.



F&H begin with a general chapter on language, narrower in scope than C&C's, followed by a chapter on the linguistic background to psycholinguistics. This contains a clear description of the sounds and syntactic structure of language, the classical arguments for the justification of transformational rules and a sketchy introduction of some concepts of semantics. In many ways F&H can be said to be a sort of undergraduates' Fodor, Bever and Garrett (1974); like Fodor, Bever and Garrett — but scaled appropriately to a more junior audience — they attempt to give the linguistic background necessary to understand the rationale of experimental psycholinguistic work.

P also has a general linguistics chapter; but it is quite different from F&H's. In line with P's overall approach, this chapter begins with the behaviourist position and brings the reader through the reactions to behaviourism and finally up to generative transformational grammar. Unfortunately, though, the arguments for transformational rules rather than phrase structure rules are not given, so that transformational grammar appears to be just an arbitrary model. The chapter concludes with short sections on semantics and phonology; the latter, unlike the corresponding sections in C&C and F&H, fails to point out that the phonetic transcriptions given are of American English pronunciation only — non-American users of the book beware.

### **History of psycholinguistics**

P is the only one of the three works under review to give explicit attention to this topic. He begins his book with an introductory discussion of the emergence of cognitive psychology and its place in the history of psychology, and consistently brings this sense of historical perspective to each of his topics. It will be clear from the discussion of the topics to follow that as a consequence of this he covers much more early psycholinguistic experimentation than do either of the other two books; since P is also shorter than the other two books, this means that later work is of necessity discussed in much less detail.

Neither C&C nor F&H pay much obeisance to bygone arguments. The derivational theory of complexity, for instance, receives only a brief mention in C&C, a rather more comprehensive treatment in F&H. Some work, however, is apparently more resistant to neglect than the rest: all three books describe the Hayes' (1951) attempt to teach language to a chimp; only P gives space to the Kelloggs' (1933) earlier effort.



**Biological background**

C&C make merely a passing nod to this topic: five pages mentioning lateralisation of brain function and some of the attempts to induce linguistic performance in apes.

F&H devote a whole chapter to a discussion of the same issues. P also has a complete chapter, covering the same territory with the addition of brief remarks about birds, bees and dolphins, and Lieberman's contentions about vocal tract evolution. The 'generalist' versus 'localist' positions in neurolinguistics are discussed purely in terms of representation in P, whereas F&H, more cautiously, discuss them as theories about the implications of aphasic symptomatology.

The chimp language projects also elicit a cautious response from F&H, who point out the major difficulties in interpreting the results. P is more openly sceptical of the likelihood of apes ever attaining communication skills that could properly be called linguistic. C&C, however, at the close of their two and a half pages on the subject, blithely declare that the chimp studies suggest that 'human language doesn't seem to be beyond the grasp of other species' (p. 523).

**Comprehension**

C&C have four chapters under this heading. The first contains an eccentric description of the comprehension process in terms of strategies. These strategies — some 'syntactic', some 'semantic' — are cobbled together from a number of sources, Bever (1970) and Kimball (1973) on the one hand and a variety of linguists on the other. The strategies are not all of comparable status; thus some encapsulate generalisations about listeners' behaviour (e.g. number five: try to attach each new word to the constituent that came just before), whereas others reflect generalisations about English (e.g. number fourteen: look for given information to precede new information unless the sentence is marked otherwise). In view of the recent revival of interest in parsing strategies (e.g. Frazier and Fodor, 1978), with the consequent likelihood that these will become an essential ingredient of psycholinguistic courses for the next few years, it is a definite plus for C&C that the strategy approach is so strongly emphasised; but it is a pity that it is treated in such a particularly disjointed fashion.

This chapter also contains a noteworthy sentence, remarkable really for its beginning: 'Fodor (1971) and Schank (1972) have suggested ...' (p. 75). Even more remarkably, this extraordinary juxtaposition is in fact justified.



C&C's following chapters describe (i) the 'utilisation' of sentences — processing of speech acts and presuppositions, question-answering, the verification of sentences, etc.; (ii) memory for sentences and stories; and (iii) speech perception (although this latter chapter, its title notwithstanding, sells the speech perception work very short indeed). The memory chapter is notable mainly for omitting the work of Bransford and Franks (1971). Since this experiment provides a simple but brilliantly effective classroom demonstration, it is doubtful whether there is a single undergraduate psycholinguistic course which does not include it. (It will become obvious to the reader, if it is not obvious already, that C&C do not always put things where one would expect them, therefore I should point out that Bransford and Franks' work is not described anywhere else in the book either. F&H and P both give an account of it.)

F&H's three comprehension chapters begin with one on speech perception which is thorough and very good. It is regrettable, however, that the case for categorical perception was put so strongly and that none of the recent arguments against it were cited. The following chapters, on sentence comprehension and on memory and comprehension, are likewise sound accounts of most of the relevant work in these areas. The sentence verification work is not covered, though, and only a skimpy account of the early 1970's approaches to parsing strategies is given.

P's three chapters are divided roughly the same way as are F&H's. The speech perception chapter is less thorough than F&H's, but includes a section on infant speech perception. The sentence comprehension chapter, as might be expected, covers a substantially greater amount of early psycholinguistic work than either of the other two books gives space to, including miniature linguistic systems, Yngve's depth hypothesis and information processing theory. The overall effect is of something like a museum of antiquated theories, though the arguments against each position are clearly put. A section on ambiguity in this chapter is particularly superficial, and notably prey to a fault to be found also elsewhere in P, the citation of studies without explanation of *why* they support a given position (e.g. 'Olson and MacKay [1974] have provided further evidence using other experimental procedures that this is the case', p. 132).

P's chapter on semantic processing is quite comprehensive. Again it begins with yesterday's arguments (e.g. is meaning an  $r_m$ ?), but it manages to cover a large number of experiments before concluding with a rather unconnected attempt to sketch the philosophical background to the theoretical position represented by experiments on context effects: a Platonic rather than Aristotelian position.



## **Production**

C&C devote two chapters to this topic, one entitled 'plans' and the other 'execution'. The former contains a hefty dose of sociolinguistics plus a jumble of background linguistic facts (e.g. the distribution of articles and pronouns) and a very few relevant psycholinguistic studies. The second is a quite thorough treatment of the available literature on hesitations, interjections, slips of the tongue, tongue-twisters and the tip-of-the-tongue phenomenon. C&C do not seem to be quite sure, it appears, whether speech errors are common or rare: on p. 264 they write, in reference to Maclay and Osgood's (1959) corpus of spontaneous speech: 'it comes as no surprise that there were thousands of errors'. But ten pages later they claim that collecting speech errors is 'a difficult job because of their rarity'. (They were right first time. Speech errors are not only not rare, they are so common that even the most dedicated collectors overlook the vast majority of slips they hear.)

F&H also have a chapter on production plans followed by a chapter on execution. The content of the former, however, includes most of what C&C incorporate in their second chapter: choice of words, hesitations, slips of the tongue (the TOT phenomenon was discussed in connection with lexical access under 'memory and comprehension'). They also include arguments for and against the application of transformations as mental operations in production, and conclude with a model of the production process. Their second production chapter is concerned with the physiology of articulation, including a brief treatment of articulatory development and a section on temporal patterning.

P appends one and a half pages of superficial remarks on speech production to his Chapter 3, which is otherwise concerned with speech perception.

## **Acquisition**

C&C devote four chapters to language acquisition, although the fourth, 'meaning in child language', appears not in the section headed 'acquisition' but under 'meaning and thought'. F&H give three chapters to the subject, P two. The basic facts of syntactic and semantic development as an introductory psycholinguistic course needs them are adequately covered by all three. C&C provides by far the best account of the acquisition of phonology which is hardly touched upon by the other two works (in F&H it receives a few pages at the end of the second production chapter, in P one page under morphophonemic development). It is odd, though,



that C&C use phonetic transcription at one point (p. 388), but a few pages later (p. 393) use a highly misleading system of vowel transcription where phonetic transcription would easily have provided clarification.

The case for and against pivot grammar is put most explicitly in P, as might be expected; C&C mention it briefly (in line with C&C's general aversion to describing linguistic rules of any kind, the reader is not actually told what a pivot grammar is), and F&H not at all. Only F&H, though, discuss learning to read. Only C&C discuss the development of speech act competence. F&H ignore Berko's (1958) work on the acquisition of morphology which is included by C&C and by P.

It is not surprising to find that the evidence against E. Clark's (1973) featural theory of word meaning development is given rather more attentive coverage in F&H and P than in C&C. Even the finding that children show correct comprehension of words which are overextended in production is manoevered to an appearance of support for Clark's position (C&C: 496–7).

### Further topics

Both F&H and C&C have comprehensive discussions of the relation between language and thought, which in C&C extends to cover a sketchy description, bolstered by very little psycholinguistic evidence whatever, of various heterogeneous linguistic and psychological theories and findings. The first of their four chapters on 'meaning and thought', for instance, covers *inter alia* markedness theory, multidimensional scaling analyses, and procedural semantics; the second has more on procedures, semantic network theory, and adjective ordering, among other topics. The third chapter is the one already referred to on the acquisition of meaning, and it is followed by the most scrappy chapter of all — as if all the topics C&C had not found a corner for elsewhere in the book (kinship terms, perceptual categories, the brief mention of lateralisation and chimp language mentioned above, word order, etc.) had been dumped into this final chapter as a last resort. The one topic which is discussed in F&H but not in C&C (surprisingly, in view of C&C's avowed concern with communicative phenomena, and their demonstrated partiality towards sociolinguistics) is dialect diversity, exemplified by the structure of Black English.

F&H also include a chapter on reading, which covers the visual end of the reading process, lexical access (without, however, discussing frequency effects, which were briefly treated in the sentence comprehension chapter), and the evidence for and against phonological recoding in reading; it



concludes with a model of the reading process. F&H are in fact alone in even mentioning the formidable body of psycholinguistic studies of word recognition.

### General remarks

Stylistic preferences are highly subjective; nevertheless I report that I found C&C very hard to read. Its text is fragmented into short paragraphs, which frequently have no obvious continuity. This often gives the effect of a febrile fluttering from topic to topic; at other times, however, the reader feels that points are made in excruciating detail (see for instance the discussion of Linde and Labov [1975] on pp. 233–6, where the description of a quite simple experiment stretches over more than three pages with no less than four subheadings). C&C do not set out to develop arguments at length, presenting and weighing diverse sets of evidence in sequence and arriving eventually at a conclusion; they prefer to make pithy pocket-sized points one after the other. This pop approach is also reflected in the sometimes rather gimmicky illustrations. A further trick they have, which I found particularly annoying, is to refer to entities with arbitrary numerical values (e.g. '*Light* [ $E_{57}$ ,  $E_8$ ] specifies that  $E_{57}$ , so characterised, lit  $E_8$ , so characterised', p. 47). Even in this they are not consistent, however, and frequently lapse back into x's and y's.

In all matters of style F&H and P are far more traditional — nothing innovative, just plain old textbooks.

For entertainment value, only C&C have made an explicit effort, with a number of jokes, some delightful *New Yorker* cartoons, and the occasional bit of fun in their bibliography and glossary. However F&H also provide some more subtle entertainment both by the occasional display of a fine line in dry humour ('No human language [is] built from sounds made by rubbing the legs together. This is one of the characteristics that distinguishes us from crickets', p. 8) and by their example sentences, which are peopled with such characters as Herb and Eve, and Jerry, Tom and Merrill — a sort of bonus for the lecturer, in much the way that a writer of children's stories will include sophisticated puns for the benefit of the adult reading the stories aloud.

All three books have summaries at the end of each chapter; F&H's summaries are the clearest. C&C and F&H also append further readings to each chapter; in general, C&C's suggestions are better, F&H's being sometimes a little idiosyncratic — although the one-year difference in publication date has worked to F&H's advantage in at least one instance: they are able to cite the excellent reviews of the speech perception



literature by Darwin (1976) and Studdert-Kennedy (1976), while C&C bemoan the lack of any such review. C&C has a very comprehensive bibliography of nearly twice the size of F&H's; P lists fewer references than either of the others, and, infuriatingly, gives references for each chapter at the end of the chapter rather than together at the end of the book. Many times I found myself vainly seeking a reference in the wrong list.

Finally, there are the usual minor inaccuracies. Names suffer, as they always do: Terbeek becomes Terbeck in P, Breskin becomes Beskin in C&C, and Lightbown becomes Lightbrown in F&H. In F&H, 'Darwin (1977)' (p. 362) should read 'Darwin (1976)', and — ahem — 'Cutler (1974)' (p. 104) should read 'Cutler (1975)'. The Miller and Isard studies referred to on pages 67 and 210 of C&C are two quite separate experiments, although only one reference is given in the index. (The study on page 67 is Miller and Isard [1964].)

The dates at which all three books went to press preceded their publication dates by many months; thus there are a number of notable omissions. Among these is the recent revelation of the effects of word length on phoneme-monitoring reaction time and its implication that the lexical ambiguity effect in phoneme-monitoring (discussed in all three books) was artifactual (Mehler, Segui and Carey, 1978). Marslen-Wilson's (e.g. 1976) work on the interaction of syntactic and semantic processes in sentence comprehension is not discussed in any of the three texts. Nor is Karmiloff-Smith's (1978) work on acquisition of determiners. Here it is in fact not the case that this work was not available to the authors at the time of writing, since all three books cite other papers from the same collection (the 1976 Stirling conference; indeed, authors of all three volumes were AT the conference).

## Conclusion

It will by now be obvious to the reader that of the three books under review I greatly prefer F&H. As a textbook for undergraduates it is to be preferred because of the expository structure of its chapters and the clarity with which its arguments are developed and resolved. C&C in contrast is entertaining but fragmentary, and leaves the undergraduate reader with no clear picture of the various topics under discussion; the construction of an overall framework becomes the task of the lecturer. F&H is to be preferred to P in turn because it is a more substantial book than the latter in all senses — wider in scope and more thorough in the treatment of individual issues. It is also more up-to-date; its arguments are easier to



follow; and it is usually more impartial in its treatment of controversial questions.

This is not to say that the other two books are not also useful. P's discussion of the history of psycholinguistics and his concern to place experimental issues into theoretical perspective are potentially valuable; it is probably the case that the majority of psycholinguistic courses include some discussion of these issues. The impressive list of references cited by C&C makes their book useful both to the student who wishes to read more widely and to the teacher preparing a course; oddly, the latter could also find value in the very disjointedness which makes C&C so unsuitable as a text, because this sometimes results in the association of separate issues in an original and thought-provoking way.

Perhaps, finally, C&C's lack of utility as a text results from the confusion which its authors, in contrast to F&H and P, seem to feel about their mission. Their book, with its consistent avoidance of all things syntactic, and its emphasis on communicative function, presents what amounts to a true alternative to the more customary approaches to psycholinguistics (represented by Fodor, Bever and Garrett [1974], for instance, or by F&H and P). Certainly C&C claim in their introduction that their intention is to present a view in which the communicative aspect of language is more heavily emphasised than it had been in previous works. Their attempt has largely failed, however, because a coherent viewpoint does not in the end emerge from their book. A charitable view might be that they have tried too hard to include all sorts of things that could possibly be relevant, so that they have ended up with an unmanageable jumble; a less friendly critic might feel that their viewpoint itself is an eclectic mix of unrelated linguistic and psychological approaches. In any case the attempt was probably doomed to failure in a textbook written at such a low level that, even had it been a powerful and cohesive statement, it could not have been taken as a serious argument for the authors' case.

F&H, which tries only to be a workmanlike undergraduate textbook, succeeds.

*University of Sussex*

ANNE CUTLER

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Rudolf Meringer and Carl Mayer: *Versprechen und Verlesen*. Reprinted as *Amsterdam Studies in the Theory and History of Linguistic Science II: Classics in Psycholinguistics Volume 2*. Edited with an Introduction and Appendix by A. Cutler and D. Fay. Amsterdam: John Benjamins B.V., 1978. xi + xv + 207 pp.

This reprinting of Meringer and Mayer's celebrated treatise is timely, since interest in speech production and speech errors, especially, has increased enormously in the last few years, not least because of the work of Cutler and Fay, the editors of this volume (see Fromkin, in press, for a collection of recent studies). Not only was *Versprechen und Verlesen* the first systematic collection of speech errors, it is still, in certain respects, the richest source of error data. Thus it is not surprising to find some modern studies based exclusively on it (Mackay, 1970; Celce-Murcia, 1973), or using it to validate a new corpus (Hotopf, 1968).