

PIERRE DELATTRE: **Studies in Comparative Phonetics.** Groos, Heidelberg 1981. 133 pp.; DM 29.-. ISBN 3-87276-227-3.

Reviewing a posthumously published book imposes a special obligation on the reviewer to take great care in interpreting the author. While feeling the burden of such a responsibility, I take it to be important that archival journals in our field call the attention of the reading public to what will surely be the last collection of papers by the late distinguished

scholar PIERRE DELATTRE. This is my conviction even though my friendship with DELATTRE and my intellectual debt to him would surely have prevented me from accepting such a task in his lifetime.

The editor of this book, BERTIL MALMBERG, has carefully chosen four previously published papers, two with co-authors, for reprinting, and he has provided a very interesting introduction of his own. Although MALMBERG does say that the papers have appeared previously, he does not give the sources. This is an omission that I shall remedy in my comments on each of the papers. In fact, all of them appeared in the *International Review of Applied Linguistics* in the period 1968–71. The fact that this is a journal not regularly followed by most phoneticians and other workers in speech research, makes this collection all the more useful. I found the original sources by consulting the bibliography of DELATTRE's works in the book published in his memory [VALDMAN, 1972].

It is important here to give some attention to MALMBERG's introduction, 'Pierre Delattre and Modern Phonetics', since it was written by a person whose views on the man and his scientific setting must be taken very seriously. Although the reader will find this introduction stimulating and informative, he, along with me, may be puzzled and even distressed by MALMBERG's insistence that DELATTRE, in spite of earlier scepticism, had become 'convinced of the necessity of the two principles of economy and binarism'. He goes on to make much of a 'fruitful and intimate collaboration' between DELATTRE and the late ROMAN JAKOBSON. It is true that the two men knew each other and no doubt had much respect for each other, as evidenced by the section entitled 'To the Memory of Pierre Delattre' in the recent book by JAKOBSON and LINDA WAUGH [1979]. In that passage (p. 81), JAKOBSON's 3-day visit to DELATTRE in Santa Barbara, California is said to have yielded 'a plan for a joint, systematic outline of the psychoacoustic correlates of the system of distinctive features'. Such hearsay reports of private conversations and unrecorded public statements notwithstanding, familiarity with DELATTRE's publications, especially those within the covers of this volume, would not lead a dispassionate uncommitted reader to the belief that DELATTRE's attachment to the notion of binary distinctive features was anything more than a willingness not to dismiss such arguments out of hand. That is, when he speaks of, e.g., 'spread' or 'back-rounded' vowels in French in the book under review (p. 82), one might bend over backwards to see binarism lurking between the lines, but the more obvious reading yields merely a traditional phonetic descriptive label.

JAKOBSON and WAUGH [1979, p. 81] tell us that DELATTRE advocated the slogan 'economize and binarize' in his invited paper at the 1967 Sixth International Congress of Phonetic Sciences in Prague. Having been present for this paper, I do recall that DELATTRE presented his talk with his usual charming flair for the dramatic that made his detailed studies of acoustic cues so much more palatable. Frankly, I cannot recall whether he made such a statement in his oral paper, but in neither the English-language published version of the paper [DELATTRE, 1968] nor in the proceedings of the congress [DELATTRE, 1970] does such a sentiment appear! Instead, for this reader at least, the message seems to be that anyone playing the phonological game of distinctive features must be phonetically sophisticated enough to understand that a posited distinctive feature is not likely to be revealed either by the articulatory behavior of the speaker or by his acoustic output. Underlying any such distinctive feature is considerable physical complexity. Summing up the problem, he says [1970, p. 46], '... si les traits pertinents sont des signaux perceptuels qu'on ne peut pressentir qu'indirectement à travers leurs corrélatifs acoustiques et articulatoires, et que les corrélatifs articulatoires ne peuvent être spécifiés qu'une fois accompli l'isolement des corrélatifs acoustiques, il n'est peut-être pas possible de toucher les traits pertinents qu'en arrivant à une connaissance suffisante de ce qui est distinctif dans les signaux acoustiques'. It is very tempting to interpret this as a warning to the phonologist to make claims about distinctive features only after having found what features of the speech signal carry the communicative burden.

I shall now make brief mention of the four papers one by one. Since these papers have all appeared before, it may be enough just to give some highlights and a few critical remarks. Without easy access at this time to the *International Review of Applied Linguistics*, I shall depend on VALDMAN [1972] to provide bibliographical information on the original publications.

The first paper, written with MICHEL MONNOT [DELATTRE and MONNOT, 1968], is 'The Role of Duration in the Identification of French Nasal Vowels'. This is an intriguing experimental study of a trading relation between acoustic cues: nasal resonance versus vowel duration. In French, as is well known, the system of oral vowels is classically described as containing a small subset of vowels minimally distinguished from nonoral counterparts by the simple phonetic feature of nasality. In this paper we find strong analytic support for earlier observations that concomitant with nasality is greater vowel duration. Indeed, experiments with speech synthesis show that this difference in duration is a sufficient acoustic cue to the distinction. Short variants of synthetic vowels with weak simulation of nasal resonance were heard as oral, and long variants, as nasal. The authors speculate in an interesting way about the future of the distinction in French.

The second paper, written with MARGARET HOHENBERG [DELATTRE and HOHENBERG, 1968], is 'Duration as a Cue to the Tense/Lax Distinction in German Unstressed Vowels'. Traditionally, it has been observed that the German vowel system contains two sets of vowels, exemplified by such word-pairs as *biete/bitte* and *Kehle/Kelle*, said to be distinguished by relative length, although, at least for some of the minimal pairs, there is also a discernible difference in quality. Wishing to avoid assigning phonemic responsibility to either feature, the authors use the terms 'tense' and 'lax' as cover terms but, at the outset (p. 41, f.n. 2) warn the reader that no implication about muscular tension is intended. Anyway, it seems from the sources cited, that dissatisfaction with the status of vowel duration as a satisfactory basis for the distinction arose from the conviction that it was not present in unstressed vowels. The research reported here, however, shows that even in unstressed German vowels, a duration ratio of roughly 3:2 is to be found between the two categories; furthermore, listening tests with synthetic speech, in which vowel durations and vowel formant frequencies, as well as the durations of postvocalic consonant constrictions, were experimentally manipulated, easily demonstrated the overwhelming importance of vowel duration as a perceptual cue to the distinction. Regrettably, the authors appear to contradict themselves (p. 60) by saying, under result number 3, that the two cues of vowel length and vowel color contribute equally well to the distinction in unstressed position, and then, under result number 4, by showing how much more striking and reliable is the duration of the vocalic stretch! That is, the other variables in question certainly have an effect, but they are rather easily overridden by vowel length. A more forthright conclusion to this paper might have insisted on the dominance of duration as a physical underpinning to this feature of German phonology. Indeed, with such results in hand, the authors could have avoided the terms 'tense' and 'lax' in the title of their paper. After all, it is commonly found in the phonetic literature that clear-cut situations of distinctive vowel length by and large show concomitant differences of vowel color in at least part of the vowel system. It seems very likely, as a matter of fact, that any phonemic distinction closely examined by the experimentalist would reveal that even if a single phonetic dimension, perhaps the one singled out by the phonologist, is dominant, others will also carry perceptually useful information.

The third paper [DELATTRE, 1969] is 'An Acoustic and Articulatory Study of Vowel Reduction in Four Languages'. Acoustic and articulatory data are presented for medial vowels under weak stress in English, German, Spanish and French. This interesting study is marred by a failure to point out a major difference between English and the other three languages. In such word-pairs as *disable/disability* and *abolish/abolition*, orthographic a and o in the second members of the pairs represent schwa, i.e., reduction of the vowels, if you will, of the first members of the pairs and loss of contrast. The dialect recorded is not mentioned, so it is possible that for at least some of the unstressed English vowels in the sample,

'full' vowels are used. It is not surprising, of course, that the plots of formant frequencies and x-ray profiles show much more vowel reduction for English than for the other languages. The results include some interesting differences across these languages in the nature of the vowel reduction observed. It is, by the way, misleading to say at the bottom of page 74 that the IPA charts show only tongue height and fronting; rounding is also a dimension of the charts, whether one uses the old separate charts of primary and secondary cardinal vowels or merges them conveniently into one three-dimensional chart.

The final paper in the book, printed as part I and part II [DELATTRE, 1971], is 'Consonant Gemination in Four Languages: An Acoustic, Perceptual, and Radiographic Study'. As implied by the title, this study, which draws upon German, English, French and Spanish for its material, is methodologically very elaborate. It examines gemination both at word boundaries and within words. The latter condition, word-internal gemination, is not found in English, and in the other three languages it applies only to /r/. (Of course, in German, as in *Beharrung/Behaarung*, it should have been pointed out, with a reference to the second paper in this book, that this gemination might best – or at least conventionally – be viewed as part of the vowel length distinction, although in the other languages of concern here, differences in vowel duration predictably co-occur with phonologically relevant consonant length distinctions.) The choice of languages having only /r/ for word-internal gemination complicates the matter, since, as shown in this paper, not only relative duration but also other articulatory differences play a role in a way that might not be found in a language like Italian, in which gemination within the word is found in consonants in which apparently a closure or constriction can simply be held longer. If, however, one makes allowances for phonologically confusing statements here and there, it is possible to derive much enlightening information about the production and perception of this contrast.

BERTIL MALMBERG and Julius Groos Verlag are to be complimented for their efforts in compiling and publishing this book. Had PIERRE DELATTRE been alive to edit it himself, even with the provocative essay by MALMBERG included, no doubt he would have wanted to clarify not only the points I have raised but many more that he himself would have wished to reconsider in retrospect. This handy collection of some of his last research studies should certainly be on the reading list of all students of experimental phonetics.

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