The sounds of the world's languages By Peter Ladefoged and Ian Maddieson (review)

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This book points the way to this success by showing in microcosm (if such a term can be used of a single volume of this length) the directions the theory was already taking and the enthusiasm of those drawn to it as early as 1991.

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The sounds of the world's languages. By PETER LADEFOGED and IAN MADDIESON. Oxford Cambridge, MA: Blackwell, 1996. Pp. xxi, 426. Paper $31.95.

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This book truly lives up to its name—it is a catalog, probably pretty close to complete, of all the sounds known to occur in all the languages of the world. There is, of course, a possibility, recognized by the authors, that lurking around the next corner will be a sound that will fill in a gap in the IPA chart. Certainly the recent discovery of the linguolabial stops in Vao (18–19, with stills from videotapes) indicates that there are more things in heaven and earth than were dreamt of in the first edition of Ladefoged's basic textbook. However, with the increasing knowledge we now have of cultures previously unknown to western science, the chances of this book needing radical revision in the near future are quite small.

The book is based on the database of sounds assembled at UCLA and known as the UCLA Phonetic Segment Inventory Database (UPSID) plus the accumulated knowledge of the authors and the phonetics laboratory at UCLA.

Since this book is a description of the possibilities of human speech sounds it does not take major theoretical stances on many current PHONOLOGICAL as opposed to strictly PHONETIC issues, such as binary vs. unary features, nor does it provide definitive answers to some of the vexing questions of feature geometry, such as how many place nodes there are or whether other types of features should be gathered into nodes, although there are some suggestions for the issue of overarching place features.

The book is organized around the traditional phonetic categories—places of articulation, stops, nasals, fricatives, laterals, rhotics, clicks, vowels, and multiple articulatory gestures (double closures and secondary articulations). Each chapter contains a description of all the possibilities known to occur in the database. While the description is primarily framed in traditional articulatory phonetic terms, there is considerable reliance as well on acoustic data (a random flip through the book reveals lots of spectrograms and small bits of waveforms). There is also a considerable number of palatograms and representations derived from other, more exotic measurement systems (oral and pharyngeal pressure, lip position, x-rays, and videotapes).

It is difficult to know how to proceed in reviewing this book—an instant standard reference work that belongs on the desk of every linguist who has an interest in what sounds human languages make use of. Although in most instances the book does not take strong stands on

controversial theoretical issues, the authors state explicitly that they have been influenced by geometric phonology (see, for example, McCarthy 1988). Consequently, they divide the total set of possible points of articulation into five major zones: labial, coronal, dorsal, radical, and laryngeal. These zones subsume a total of seventeen possibilities, and in one grand chart (40–41) the authors summarize all possible sets of contrasts that they have been able to find among the 289 possibilities. From this chart and from arguments made, for example, by Halle (1983) and Sagey (1990), they observe that within a given manner of articulation (say stops or nasals), languages overwhelmingly choose only one from each zone.

One way to place this claim into a broader theoretical background would be to point out that in general, within each zone there are more and less frequent points of articulation. For example, while the dorsal zone includes palatal, velar, and uvular possibilities, the velar is, of course, far and away the most common. One could argue that for each major articulator there is a prototypical exemplar—bilabial for stops, velar for dorsals—with other choices being less advantageous. It is likely that there are articulatory and acoustic reasons why each zone has a preferred center (and the authors seem sympathetic both to arguments on acoustic distinctiveness and quantal boundaries, citing the work of Stevens (Stevens & Keyser 1989, Stevens 1989) and to arguments from 'ease of articulation', citing the work of Lindblom (Lindblom & Maddieson 1988), although they do not, surprisingly, refer to the long tradition of European phoneticians such as Sievers and Grammont on precisely this subject. The concept of acoustically and articulatorily defined prototypicality principles can be used to explain a number of phonological parameters (see Nathan 1989, 1995), and this volume would serve as an excellent source book for an extended study of this question.

One area where the phonetic and phonological communities have traditionally been at odds involves the stop series of the Indian subcontinent which in earlier work (such as the classic textbook) L has referred to as 'murmured'. In this work the authors come to agree with the traditional nineteenth century view that these stops are kinds of aspirated stops (although they do not go so far as to call them 'voiced aspirated'. In so doing they come to agree with Hurch's (1988) view that aspiration constitutes a delay in a return to modal voicing (thus unifying both 'voiceless' and 'voiced' aspiration).

The sole area where the authors take a strong theoretical stand that phonologists might quarrel with deals with vowel height, a traditional area for debate in any case. They note that while the IPA permits as many as seven levels, they 'doubt that any language uses this full range, but there are clearly more than three levels of the auditory property height' (289). (The argument that height is a purely auditory property will be familiar to anyone who has read L's introductory text although there is, of course, also a massive literature on the subject.)

The language they cite as requiring more than three contrasting heights is Danish, where there are 'four front vowels that contrast simply in height' (289). They also cite a Bavarian dialect which appears to have five heights. However, while the low back unrounded vowel (transcribed [a]) has a significantly higher F1 than the other low vowels, they all additionally contrast—there are a low front vowel (transcribed [æ]), a low front rounded vowel (transcribed [œ]), and a back rounded vowel (transcribed [ɒ]). Thus the extra 'lowness' is predictable (using Donegan's and others' features it would constitute the sole 'colorless' vowel, being neither palatal nor labial). This still leaves Danish with four, however. But curiously they cite, only in passing, that English and German contrast BOTH /eɪ/ vs. /ɛ/ and /i/ vs. /ɪ/, but they state that these are 'distinguished by variations of the major vowel qualities height and backness'. This would seem to be a claim for a need for at least one more height (the /e/ : /ɛ/ contrast already exists in Danish), but they do not argue for six: /i : ɪ : e : ɛ : æ : a/. This discussion, incidentally, occurs in a section of the chapter on the feature tense/lax, which they do not feel a need for.

The evidence for an additional vowel feature of some kind, probably the one traditionally referred to as tense/lax incidentally, goes beyond the fact that the vast majority of languages of the world seem to make do with two or three heights, while four and higher numbers seem rare and nonprototypical. Extensive research over many years by Labov (summarized in Labov 1994) shows that there are two clearly definable classes of vowels in English, which he calls peripheral

and nonperipheral. These classes define themselves in English dialects by their differential behavior in ongoing processes of sound change. The peripheral vowels in general rise while the nonperipheral ones fall. In addition, for American English, at least, the peripheral vowels have all developed colored off-glides (the source of the infamous /y/ and /w/ glides in the Trager-Smith transcription), while the nonperipheral ones have in general developed colorless ə-off-glides: 'bead' [biid] vs. 'bid' [bɪəd], for example. Similarly, in Quebec French the high vowels [i,y,u] have developed lax counterparts [ɪ, ʏ, ʊ] in closed syllables, and a process of lax harmony spreads the lax feature leftwards across the rest of the word: *abusif* [abʏ'zif] 'abusive', *inutile* [ɪnʏ'tsɪl] 'useless'. The close relationship between vowels that appear to be adjacent in height 'within a zone' (much as we find between related members of the major articulatory zones) suggests that there is a single feature controlling this relationship, and tense/lax still seems the best available suggestion, despite the unease of the phonetics community.

With the exception of the issue of tenseness, I am unable to present a single significant criticism of this book. On the back of the paperback edition John Goldsmith, Michael Kenstowicz, William Hardcastle, and W. Barry are all quoted praising this book as something that needs to be on everyone's bookshelf. I can only endorse the nomination.

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Writing and literacy in Chinese, Korean and Japanese. By INSUP TAYLOR and M. MARTIN TAYLOR. Amsterdam & Philadelphia: John Benjamins, 1995. Pp. 412. $68.00.

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Chinese characters are called *hanzi* in China, *kanji* in Japan, and *hancha* in Korea. About two-thirds of characters contain phonetic elements which Chinese speakers find accessible enough to read and write exclusively in characters. Non-Chinese-speakers, Koreans, and Japanese who borrowed the classical Chinese script a millennium ago have developed highly efficient syllabaries to supplement the characters, which are still used for a decreasing number of culturally