

Letter to the Editor

Dear Sir,

The idea that a notational device can of itself explain a body of observational data seems to be held by certain linguists. I have in mind, specifically, a recent paper by Walsh & Parker (*Journal of Phonetics*, 1981, 9, 305-308), which takes Raphael (*Journal of Phonetics*, 1975, 3, 25-33) to task for presuming to describe a physiological finding of his as an explanation for the greater length of vowels before voiced than before voiceless consonants in English. They advance, instead, the (to me) curious view that this greater duration *is* explained by calling it an effect "triggered" by an "abstract" property of the phonological set /b, d, g, . . ./ . Since this abstract property, [+voice], is said by them to have "a number of acoustic and articulatory correlates" (p. 306), one of them no doubt the longer vowel duration, this so-called explanation is quite circular. Raphael's study, seriously misrepresented by Walsh and Parker, aimed to find out whether the vowel length difference is attributable to a difference in the "motor command" for the vowel, to a difference only in the relative timing of vowel and consonant "commands", or to some combination of the two. It was, in Raphael's words, designed to investigate "the physiological activity which must underly durational differences, *no matter what their cause*" (p. 25; emphasis added by LL). For Walsh and Parker, however, it seems that to name is to explain. Only thus can we understand what they mean when they write, in the inflated style fashionable among linguists, that the abstract [\pm voice] feature "predicts" relative vowel duration.

Not only does either an abstract or an observable [\pm voice] feature dimension *not* explain vowel length variation, but it is surely prejudicial to assume that it is the longer vowel before /b, d, g, . . ./ that needs explaining rather than the shorter one before /p, t, k, . . ./, or that it is appropriate to deal with vowel duration without attention to the correlative consonant duration. Walsh and Parker are entirely correct when they emphasize that the [+voice] feature as conventionally defined by phoneticians is inadequate for identifying obstruents as members of the /b, d, g, . . ./ and /p, t, k, . . ./ sets. This long recognized fact is what motivated the once prevalent view that the two sets are more reliably distinguished by a difference of articulatory force ([\pm tense] or [\pm fortis]) than by one of voicing. Since a vowel is longer before a voiced consonant belonging to /b, d, g, . . ./, it may be that we learn to pronounce the longer vowel even before a "devoiced" consonant assigned to the same set, i.e. a consonant that may be otherwise identical phonetically with an abstractly and observably [-voice] consonant of the /p, t, k, . . ./ set. The fact that a vowel is longer before a voiced consonant does not imply that a vowel is longer *only* before a voiced consonant; vowel length differences do, after all, function distinctively in many languages. It may be true, on the other hand, that even in languages with distinctive vowel length there is a connection between vowel duration and consonant voicing.

Assuming that we are reluctant to regard the vowel duration difference that is preserved despite the voicelessness of /b, d, g, . . ./ as a case of a phonemic split in progress, we may speculate that vowel shortening is an effect of the devoicing gestures associated with /p, t, k . . ./, while the devoicing of /b, d, g, . . ./ has a very different etiology. This might be the case, in particular, where /b, d, g, . . ./ are phonetically voiceless even though adjacent to intervals associated with voiced segments. In such a context voicelessness could result from a cessation of glottal airflow with no change of the larynx from a [+voice] state. In that event physiological data would have an explanatory value not possessed by either acoustic data or by the abstract [+voice] feature. Moreover, it would make more understandable why

listeners label some consonants *b, d, g, . . .* despite their voicelessness, and why linguists prefer to transcribe them phonetically as [b̥, d̥, g̥, . . .] rather than [p, t, k, . . .].

*Department of Linguistics
University of Pennsylvania
and
Haskins Laboratories
New Haven
Connecticut
U.S.A.
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Leigh Lisker