Children as Phonologists*

Ignatius G. Mattingly†

Young children who have recently learned the English alphabet know not just the letters themselves (A, B, C...), but also the names of these letters ([ey], [biy], [siy]...). In most cases, the letter-name includes one of the sounds the letter can stand for ([ey], [b], [s]...). These children are also likely to know some standard consonant spellings not implied by the letter-names (C for [k], G for [g], H for [h], TH for [θ] or [ð]), though they are still innocent of most English spelling conventions, particularly those relating to vowels. Thus, they already control a rudimentary orthography, and can express in writing such commendable sentiments as

THIS SI WER MI DADAAA WRX B CWIYT
This is where my Daddy works. Be quiet.

Correctly suspecting that the study of such productions would be rewarding as well as amusing, Charles Read collected a substantial corpus of children’s ‘creative spelling’ for his Harvard Ph.D. dissertation (1970) and published an extended study in 1975. His new book, addressed both to psycholinguists and to teachers, presents his main earlier results, together with surveys of related research by other investigators.

Read’s most striking finding is that the children are insightful phoneticians. Thus, to write the voiced alveolar flap [ɾ] in letter, these children often use D, whose letter-name, [diy], beginning with a voiced alveolar stop, is phonetically closer to [ɾ] than T’s letter-name, [tiy], beginning with a voiceless alveolar stop. And to transcribe a vowel not specified by a letter-name, they usually use a letter with a phonetically similar name. For example, they use I to write not only its letter-name, [lay]: TIGER, tiger; LIK, like; MI, my; but also phonetically similar [ə]: GIT, got; CLIC, clock; RICET, rocket. (Conventional English orthography, on the other hand, often sacrifices phonetic consistency to preserve more abstract, ‘systematic phonemic’ correspondences, using t both for [əy] < /iː/: side, like; and for [i] < /iː/: tin, wit, thus preserving morphological relationships: sign, signal; divine, divinity (Chomsky & Halle, 1968)).

Read seems to think that the ability of these children to spell depends directly on their ability to hear the speech signal as a sequence of segments. He says that “the speller must be able to divide the stream of speech into the units which are represented by alphabetic spelling” (p. 107), and, citing Liberman, Liberman, Mattingly, and Shankweiler (1980), that “this segmentation is difficult for some
children and constitutes a major obstacle to learning to read and write....reading and writing are the only central linguistic skills which depend on [phonemic segmentation]. For everyday speaking and listening, language could be made up of unanalyzable words or syllables" (p.108).

But this comes perilously close to the view (cf. Ohman, 1979) that the phonological structure is psychologically real only for alphabetically literate speakers, despite an abundance of contrary evidence from phonological analyses of hundreds of languages for which no writing systems exist. I would prefer to believe that the perceptual processes of all normal speakers of all languages represent utterances cognitively as organizations of phonological elements. The complexities of the speech signal are thus beside the point. What Liberman et al. argued, taking this phonological organization to be segmental, was that the beginning reader's difficulty is simply to become aware of the represented segments. The reason for this difficulty is that, while syllables and words occur as representations of isolated utterances, making them easy to notice when they occur as parts of the representations of longer utterances, the same cannot be said for the segments, many of which do not occur in isolation. The experience of learning the alphabet, however, greatly encourages segmental awareness, as Read's creative spellers amply demonstrate.

But if various recent proposals in phonology are correct, the creative speller may have a further problem. It has been suggested that phonological representations actually comprise several tiers: perhaps a tier for oral consonants and vowels, a tier for prosodic elements, and a tier for nasality (Browman & Goldstein, 1987; Goldsmith, 1972; McCarthy, 1981). Elements on one tier associate with elements on other tiers, but not necessarily one-for-one. Therefore, phonological representations cannot always be parsed into segments. For example, in the production of the nasal-oral stop cluster in angry, velum lowering is followed by velum raising, but there is only one oral stop closure, not two. Thus, what is phonologically represented is a [+nasal] element and a [-nasal] element on the nasal tier, both associated with one [-continuant] element on the CV tier.

Considered as transcriptions of such representations, conventional alphabetic orthographies have to be crude compromises, for they have, as it were, only one tier to work with. Some phonological tiers (the prosodic tier, for example), are not transcribed at all, and the others are collapsed together, as if associations between elements on different tiers were always one-for-one. In the case of angry, English orthography transcribes the [-nasal] element and the associated dorsal [-continuant] element as g. To deal with the [+nasal] element, it pretends that, preceding the [-continuant] unit on the consonant-vowel tier, there is another, alveolar, [-continuant] element with which the [+nasal] associates, and transcribes this combination as n.

Being unfamiliar with the conventional orthography, creative spellers have to work out their own compromises. It is this which may explain a puzzling aspect of the writing of Read's own English-speaking subjects and of the Dutch children studied by Niski (1978) and van Rijnsoever (1979), whose findings Read reviews. Many of these children consistently omit 'preconsonantal nasals,' writing BOY, bumpy; NUBRS, numbers; PLAT, plant; AD and; SEK, strk; AGRE, angry. On the other hand, the French-speaking children studied by Gill (1980) always represent nasality, writing N or M for nasal consonants and vowel-letter + N for nasalized vowels.

The English-speaking children have no difficulty in auditorily discriminating minimal pairs such as sticker, stinker. So why do they not transcribe this difference in some way? Several alternative explanations are offered in this book and in Read (1975), and I suggest yet another: Confronted with an 'extra' element on the nasal tier, these children are making an orthographic compromise, though a more straightforward one than that of conventional spelling. They simply ignore this
element (just as they, like conventional spelling, ignore prosodic elements), rather than inventing a consonantal element for it to associate with. The French-speaking children do not have this problem, for, in French, nasal elements always associate one-for-one with consonant or vowel elements.

ACKNOWLEDGMENT

Support from NIH grant HD 01994 to Haskins Laboratories is gratefully acknowledged. Catherine P. Browman gave me helpful comments on an earlier version of this review.

REFERENCES


FOOTNOTES

*Contemporary Psychology, in press.
†Also Department of Linguistics, University of Connecticut.