PHONEMES AND ELECTRONICS

I have been studying your recent articles on speech synthesizers with avid interest. I can't fault your authors on the electronics but it appears they have certain misconceptions about phonemes. The word does not refer to a single universally definable entity. It is a purely theoretical concept used for convenience in the formal analysis of language. It describes a set of phonetic bundles that may or may not be similar in all occurrences and supposed by the analyst to be subjectively interpreted as equivalents.

What the Votrax chip produces are limited approximations of some American English phonemes. The sounds are not sufficient to accurately reproduce what I call General Western American. The handling of the vowels leads me to believe that the table of sounds must have been worked out by someone from New England or the Midwest. The vowel surrogates combine phonemic distinctions with nonphonemic distinctions of length that depend on position. This is a sensible approach to one of the more characteristic features of English, but it should be remembered that these are *phonetic* representations, not phonemes pure and simple.

It is unfortunate that English has a particularly unique and complex phonology that poses a very severe challenge for anyone attempting to synthesize it adequately by electromechanical means. Anyone interested should consult the writings of Block and Trager.

An alternative approach to speech synthesis seems to me to be the use of a chip such as the SN76477 along with external oscillators and filters under microprocessor control.—*B. R. Pogue, Bowie, AZ*