
PHONETIC PATTERNS OF CONSONANT SUBSTITUTION

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Precision of utterance of a language depends upon the exactness of the articulation of consonants. Adult American English speech uses 23 single consonant phonemes, combined with twice as many vowels in myriad combinations. These are the word codes for transmitting meanings. A child with intelligence, hearing, a good verbal example, and a well organized body, learns these sound combinations and codes in an orderly sequence from his first year to maturity. The acoustic signal does not operate alone. Firm establishment of consonants in his early vocabulary is accomplished at least by seven years of age. In the course of this normal development, when certain consonants may not yet have become firmly established, other consonants may be substituted for them in a pattern we call Baby Talk. Thus, if a three-year-old infant had reason to say "My little sister thought you were washing," it might come out instead: *mai jItə fItə sət u wə wosin* (loose transcription). The five year old with no front teeth would say: *mai ? Itl θItə θət ju wə wəθɪŋ*. These phonetic substitutions are to be expected during the early years of speech development. They may be called normal substitutions appropriate to the ages and conditions indicated.

Not so the phonetic substitutions of persons whose normal development has been aborted. Early difficulty in perception of high pitched phonemes would result in this pattern, sometimes prolonged into adulthood: *mə Itl tItə tət ju və wəθɪŋ*. A dysfunctioning palate might cause these phonemic alterations: *mə Ihə hIhə kə hu wə haki*. This effect happens after prolonged hypertrophied tonsils have been removed: *mə !Ilə !Ilə θlə u wə wəθli*. Ataxia, this: *mə Ikə kIkə kə ku aki*. Phonemic patterns in mental retardation are difficult to predict. This is one sample: *ma Ikə fIdə ha du ahi*.

Almost all beginning talkers say *dis* for *this*. This substitution of *d* for *ð* and the omission of *s* shows in the pattern of baby talk. These little children are likely to say *wItə wəbIt* until they go to school and read about *little rabbits*. The substitution of *w* for *l* and for *r* is appropriate in the Baby Talk pattern.

A word about American Adult Usage is in order. The stretch of our geography and the speed of our existence have led us to short cuts, even in energy expended for phonetic articulation! Some people call the result "careless speech". It may be care-

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less teaching. Many of us substitute *n* for *ɳ* in the present participle, as *goin*, *kamən*. Progressively more of us call wheat *wit* and where *wet*, and what *wɔt*. And, especially in the west, we call garages *gəndʒəz*. The latter two substitutions have become so wide-spread in two generations of American speakers as to represent real phonetic change in American English speech.

Phonetically, we can trace the usual substitutions. Baby Talk gradually recedes from three to seven, the lisping substitution appears and disappears, and the adult pattern emerges. This sequence of development assumes that the children have enough intelligence and hearing to enable them to learn to speak. Hearing loss for high pitches results in sustained substitution of *t* for almost any phoneme. Mental retardation imposes bizarre patterns of phonemic substitution and omission. The great number of phonemes left out of the pattern is significant.

The normal pattern of substitution is appropriate to retarded children with IQ measurement of 70 and above. Below this point, however, and under circumstances critical to intelligent behavior, the patterns differ. Not only does the number of phonetic substitutions increase as the IQ becomes lower, but the character of the substitutions shows marked deterioration. The gradual imposition of *h* (sometimes *x* or *ç*) where it doesn't belong is unique to the retarded population.

Conditions that cause mental retardation contribute to the character of phonetic utterance. The familiar hearing loss that accompanies certain impairment cuts out from the verbal pattern all faint and high pitched sound, and peculiarly inserts the plosive *t* where it does not belong. Lack of stimulation, reward, or acceptable example, or inherited imperception of phonemic utterance contribute to undeveloped patterns of speaking. The peculiar sound of the mongoloid shows deviance from normal Baby Talk pattern, with much dependence upon *h*. So, also, does the utterance of those whose retardation results from traumatic accident. Other etiologic conditions produce distinctive patterns, and these patterns persevere through life.

Some patterns need not persevere. The patterns of children whose oro-pharyngeal structures are impeded by unaccustomed tissue growths can be corrected. And there is hope for the spastic child who cannot make himself understood. Simply by organizing his eating habits to develop a strong suck, as infants have, the spastic pattern is eliminated and spontaneous Baby Talk is heard. We can predict with security that the physical act of producing phonemes in coded verbal language depends upon basic functions that can be collected in four fundamentals, the foundation blocks of the pyramid of communication: intelligence, hearing, well-organized structures, and an environment conducive to speech, none of which act alone to produce speech. With this equipment, meaning develops which demands expression, first in gross physical action, then in melodies and stresses of voice and isolation of vowel values, in precision of utterance for phonemic articulation of words, and finally in complete language.