The development of phonological templates

Phonological templates are idiosyncratic child production patterns typically developed in the period of single word use and often maintained or further developed through the first months of word combination, after which they fade out of use. When a child attempts to say an adult word that fits a vocal pattern that he has already practiced, either in babbling or early words, the word form is ‘selected’ (i.e., attempted at least partially on phonological grounds, although the selection is unconscious or implicit). When the child attempts adult words whose forms fall outside of his practiced patterns, he may ‘adapt’ the forms to fit his pattern or template. Reliance on such a template typically results in many of a child’s word forms becoming similar but also less like the adult target.

The first identifiable words that a child produces are generally relatively accurate (‘selected’). Segments may be omitted, such as word-final consonants or one member of a consonant cluster or diphthong, or substituted (stop for fricative, for example), but the linear sequence and length in syllables of the target is generally retained in the child form. Accordingly, the earliest target words are themselves simple in structure, limited largely to stops, nasals, glottals, glides, and open syllables – that is, to the phonetic elements most often found in babbling (e.g., baby [pepe] or [baepe], hi [hai], bang [ba]). These first words appear to be learned as separate ‘items’, unrelated to one another, and they generally include the most frequently and consistently produced consonants of the child’s contemporaneous babble. The ‘selection’ of such words to attempt early on can be taken to reflect the child’s implicit sensitivity to the match between his existing vocal patterns and an adult word frequently used in situations of high interest.

Once the child has established an output lexicon of 10 to 50 words or more he may attempt more challenging adult word forms by generalizing one or more of the patterns that occur in his early words. Here, rather than drawing on the experience of a match, the child projects his own well-practiced output routine onto adult words that require a more or less radical ‘adaptation’ (metathesis, or reordering of segments, consonant harmony, or assimilation across different syllables or word positions, syllable omission) if they are to be accommodated within the child’s system. For example, T. M. S. Priestly reported in his classic 1977 study that, having accumulated an expressive vocabulary of over 100 words, his son began to produce disyllabic words with codas (CVCVC) according to the template <CVjVC>: e.g., peanut [piaj], tiger [tajak]. Since the trajectory is from early accurate to later less accurate words – with a later return to accuracy (after 4 months, in Priestly’s study) – the development follows the same kind of U-shaped curve often seen in the acquisition of morphology. This has been interpreted as a process of systematization or first phonological organization.

The process underlying the development of a template can be understood in at least two ways. On the one hand, we can see the child as working from an internal schema abstracted away from his experience of actually producing any given word. On the other hand, we can conceptualize the process as the simple extension of a motoric routine or procedure, in which the child’s intent to repeat a familiar adult word triggers the motoric ‘readiness’ or ‘motor memory’ that has successfully achieved word production in his previous experience. Under either interpretation, the template permits further word learning and use without exceeding the child’s existing phonetic or motoric resources, and indeed the existence of such a readily available production routine can support attention to and memory for increasing numbers of
words. Furthermore, the experience of attempting a wider range of adult word forms may stimulate the development of new, more complex phonological patterns, even while the child’s existing patterns continue to constrain his output. The child’s ‘discovery’ of the power of the template – the increased flexibility in word production afforded by the freedom to adapt adult word forms to existing production resources – has often been taken to result in more rapid lexical learning, but this has not been demonstrated in quantitative terms.

The use of templates cannot readily be established for all children, nor can the timing of template use be predicted by age or lexical or syntactic advance. On the other hand, the templates used are similar, both within and across languages: Children everywhere are constrained by the same limitations on articulation, speech planning and memory for segmental strings in a time of rapid lexical advance. The challenges include within-word changes in consonantal place and/or manner, vocalic or consonantal sequences and words of more than two syllables. However, frequency of occurrence and rhythmic or accentual patterning in the adult language also shape templates: Whereas English templates are typically monosyllabic and may include diphthongs or codas, in most European languages disyllabic templates with open syllables are characteristic. The templates arrived at by children learning languages with iambic accent or medial geminates often neglect the onset consonant, which is omitted (<VCV>) or assimilated to the medial consonant (harmony). Finally, either consonantal or vocalic melodies (labial-first, coronal-second; low first vowel followed by higher second vowel) may characterize templates. Since template use has so far been investigated in only about 100 children learning a dozen of the world’s 6000 or more languages, much remains to be learned about these early stepping-stones to phonology.

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See also: Morphological development, phonological development, phonological processes in lexical development.

Further Readings