

CROSS-LINGUISTIC EVIDENCE ON THE EXTENT AND LIMIT OF INDIVIDUAL VARIATION IN PHONOLOGICAL DEVELOPMENT

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Let me begin by describing four types of variation that could occur during children's phonological development:

1. intra-child variation: the production of different phonetic forms for the same word, or the inconsistent use of a particular phonological process across words by an individual child;
2. inter-child variation: the production of different phonetic forms or different phonological processes by different children at a comparable stage of development;
3. intra-language variation: the occurrence of different developmental stages or patterns by children learning the same language;
4. inter-language variation: the existence of phonological processes for all children learning a particular sound pattern in one language distinct from those used by all children learning a similar pattern in another language.

We need to determine, first, do all four possibilities actually occur in development? and second, what is the extent and limits of each? Here I will briefly demonstrate that the first three exist, and then comment on what it means to look for inter-language variation.

Intra-child variation, or the use of varying phonetic forms by the same child has been noted for a long time in phonological diaries. Recently, investigators have attempted to document and explain this occurrence. A succinct and plausible description of what may be occurring is expressed in Klein (1977, 159): "It appears then, that the amount of variation in a child's productions may be a function of the type and variety of processes a child has available and applies in modifying words as he/she attempts to say them".

The existence of inter-child variation is also well-documented. Children learning the same words and sounds at comparable periods of development will often show varying ways to produce them, seemingly due to preferences for particular sounds or syllabic shapes, e.g. Priestley (1977). Klein (1977) has dealt with one such pattern at length, that of a preference for reducing syllables versus

one for syllable expansion as in reduplication. Ferguson, in several papers, has referred to such alternatives as individual strategies and suggests that the extent of variation may be quite great. For example, Ferguson and Farwell (1975, 437) in a study on the phonological development of three children during the first 50 words conclude: "each of the three children is exhibiting a unique path of development, with its individual strategies and preferences and an idiosyncratic lexicon".

The occurrence of inter-child variation at any stage implies the existence of intra-language variation, i.e. different developmental stages or paths. Elsewhere, however, (Ingram 1974b, 1978) I have argued that one needs to be cautious about claims of wide-spread variation and alternative stages. Even though variation in the production of specific words and the use of phonological processes may occur, a broader view may indicate that this variation is simply part of a more general pattern. Regarding phonological processes, I suggest that children may follow them in varying degrees (Ingram, 1974b). For variations that result from preference for certain sounds, it may also be that more similar or general patterns are discernible once sound classes are observed (Ingram, 1978).

So far, little research has been done on inter-language variation, with the prevailing position being that most cross-linguistic data will be similar to intra-language findings. In my earlier study of general phonological processes (Ingram, 1974a), I observed that these tended to occur with children acquiring different languages, a point also made in regard to the less obvious process of fronting (Ingram, 1974b). While these claims deal with aspects of development shared by children, similar ones can be found for variations between children. In Ingram et al. (to appear), we studied the acquisition of English word-initial fricatives and affricates across 73 children, determining their individual preferences. Most generally, one could say that when preferences occurred, they were for either labial, alveolar, or palatal productions. This three-way possibility was also observed in Ingram (in press) for three French children, Elie-Paul (Vinson, 1915), Fernande (Roussey, 1899-1900), and Suzanne (Deville, 1890-91) as found in their substitution summarized in table 1.

Table 1

Substitution patterns for French fricatives by three French-learning children

Adult Sound	Substitutions		
	Elie-Paul (1;11)	Fernande (2;4)	Suzanne (1;11)
/f/	-	s	f
/v/	-	s	v
/s/	ʃ	s	s(t)
/z/	ʃ	-	z
/ʃ/	ʃ	s	s
/ʒ/	ʃ	s	ʒ

Is there, then, inter-language variation, i.e. the existence of distinct phonological processes for learners of one language that do not occur for learners of another language? To begin, there are two simplistic extremes that reduce the issue to a trivial one. On the one side, we can say that children are all genetically prepared to learn language, and consequently all have the same processing mechanisms available. In this case, no inter-language variation is possible, for it may simply be that the proper circumstances for a particular process do not apply. For example, a child will not show simplification of consonant clusters in learning a language that does not have them. The other situation is to say that all languages are phonologically different, so that of course children will show differences across languages because there are distinct phonetic inventories and phonological patterns to be learned.

There is, however, a middle ground between these two where variation may be viewed in a non-trivial fashion. This is where there are cases when two languages appear to present children with similar phonological patterns, but children do not deal with them in the same way. A closer analysis should provide insight into the multiple conditions that occur in a particular language which lead to different learning patterns across languages.

Let me provide two examples of such patterns. In English, there is a common process of velar assimilation where an alveolar consonant will assimilate to a following stop if it is velar, e.g.

Jennika 1;7 duck [gʌk]; 2;2 tickle [gigu]. This occurs in both CVCs where the sounds are within a syllable, and in CVCV words where the assimilating sounds cross a syllable boundary. I have examined extensive data from the three French children mentioned above and have not found instances of this process. Possible explanations are that potential instances are rare, and that the different timing pattern of French inhibits its occurrence. Nonetheless, one can locate places where it could occur, given our current understanding of the process.

A second example concerns a process that all three French children show quite widely, but which is not found in English learning children with any frequency. This is the process of consonant denasalization where a nasal consonant will denasalize in harmony with a nonnasal obstruent, e.g. Fernande mange 'eat' [baʃ]; menton 'chin' [ba:to:]; marcher 'walk' [base]. Table 2 presents data indicating how dominant the pattern is for the three French children under discussion.

Table 2

Proportion of occurrence of denasalization for three French children at varying ages

age	Suzanne	age	Fernande	age	Elie-Paul
1;0-1;7	.00 (0/1)	1;4-1;9	1.00 (5/5)	2;1	.50 (2/4)
1;8	.67 (4/6)	1;10-2;0	.83 (5/6)	2;2-2;5	1.00 (7/7)
1;9	.67 (6/9)	2;1-2;3	1.00 (8/8)	2;6-3;0	.25 (2/8)
1;10	.50 (6/12)	2;4-2;7	.25 (1/5)		
1;11	.43 (6/14)	2;8-2;10	.00 (0/7)		
2;0	.19 (3/16)				

Like the previous example, one can cite some factors that might contribute to its nonoccurrence in English, but potential cases do arise.

Data like these suggest that inter-language variation occurs, and that we need to seek more instances of it. Once more are found, they should show that phonological acquisition is the complex interaction of several conditions in the adult language, and that phonological processes will need to be described in much more detail

than exists to date. Also, they indicate that the study of acquisition in only one language may yield a restrictive, and possibly misleading, view of the language learning process.

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