

**THE EFFECT OF DEVELOPMENTAL PACE ON DEVELOPMENTAL PATH:  
A STUDY ON PHONOLOGY-MORPHOLOGY INTERFACE**

The talk will address the issue of phonology-morphology interface in language acquisition, showing how phonological development affects the order at which Hebrew verb inflectional suffixes appear in the children's speech. This effect, however, is attested only when the pace of phonological development is slow relative to the pace of morphological development. That is, as the title indicates, I will show that the pace of phonological developmental may affect the path of morphological development.

I will present data from two typically Hebrew-acquiring children, SR (boy) and RM (girl), who minimally differed in their morphological development: SR acquired the plural suffix *-im* before the first person suffix *-ti*, while RM acquired these two suffixes in the opposite order. Assuming Armon-Lotem's (2006) morpho-syntactic theory, SR's developmental path is predicted, while RM's deviation from this path is puzzling.

To solve this puzzle, the phonological development of the two children has been examined, in particular the acquisition of word final codas. As it turned out, both children started producing the codaful suffix *-im* at the stage where they reached about 90% faithful codas (i.e. did not delete target final codas). The difference between the children was in the synchronization between the phonological and morphological development (1). SR synchronized between these two modules, as he started producing verb inflectional suffixes at the point where he reached 90% faithful codas. RM exhibited a-synchronization between the two modules, as she started producing verb inflectional suffixes before she reached 90% faithful codas. Prior to this point, she produced only suffixes without a coda, including the codaless *-ti* but excluding the codaful *-im*.

(1) Phonology-Morphology (a-)synchronization

	P-I	P-II	P-III	P-IV	P-V	P-VI	P-VII
SR: Phonology			90% FC				
Morphology	(-i)		<i>-a, -im</i>		<i>-et</i>		<i>-ti</i>
RM: Phonology					90% FC		
Morphology	<i>-i</i>		<i>-a</i>	<i>-ti</i>	<i>-im, -et</i>		

P = period, determined by the number of attempted verbs, 10 new verbs for each period.  
FC = faithful codas.

As shown below, the children differed not only in the order at which they started producing the two suffixes (2a) but also in the quantity of these suffixes, determined by the number of production types per session (2b).

(2) Quantitative data

	SR		RM	
	<i>-im</i> >	<i>-ti</i>	<i>-im</i> <	<i>-ti</i>
a. First production (Period)	P-III	P-VII	P-V	P-IV
(Age)	1;06.02	1;09.00	1;11.18	1;10.28
b. Type per session (N)	64	38	53	117
(%)*	26%	15%	10%	23%

\*Percentages are calculated from all the suffixes produced in 18 periods (up to 2;02.22 for SR and 2;05.29 for RM), which correspond to 184 attempted verb types for each child.

In the spirit of Optimality Theory (Prince and Smolensky 1993/2004), I will account for the different developmental paths and the (a-)synchronization between phonology and morphology in terms of constraint ranking and reranking. I will assume the phonological constraint NO CODA, which prohibits codas, and the morphological constraint FAITH AFFIX, which requires the production of a particular affix in the order assigned by the morpho-syntax. In the initial ranking, the phonological constraint is above the morphological one (NO CODA >> FAITH AFFIX), and therefore only codaless suffixes can be produced. Only when NO CODA is demoted (yielding FAITH AFFIX >> NO CODA) the codaful suffixes can be produced.

Assuming the suffixes should appear in the children's speech in a universally fixed order, the difference inter-child variation is limited to how early/late in the morphological development NO CODA is demoted below FAITH AFFIX.

This study provide further support to the claim that phonology plays a crucial role in morphological development (e.g. function words in English – Gerken 1996, Demuth and McCullough 2009; determiners in French – Demuth and Tremblay 2008; articles in Spanish and German – Lleó 2001, nouns class markers in Sesotho – Demuth 1994, tense in Hebrew SLI children – Owen et al. 2001). It goes, however, a step further, emphasizing the effect of developmental pace in whether the role of phonology is materialized. That is, inter-child variation is due to developmental pace.

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