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# Early expressive vocabulary predicts phonological skills in Finnish children at 3;6.



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## Background

Lexical and phonological development have been shown to interact in early development. Bidirectional simultaneous associations have been suggested after one-word period<sup>1</sup>. However, studies on longitudinal associations between early lexicon and later phonological development in representative groups are scarce.

## Aim of the present study

1. Does previous (at 2;0) and/or simultaneous lexical ability associate with phonological skills at 3;6?
2. How much of the phonological skills at 3;6 can be explained by previous (at 2;0) and/or simultaneous (at 3;6) lexical ability?
3. Do children with small lexicon size at 2;0 have weaker phonological skills at 3;6 than children with typical/large lexicon size?

This study is part of the norming study of the Finnish short form version of the MacArthur Communicative Development Inventories (Sanaseula-Study)

## Results

	Mean	SD	Min-Max
CDI at 2;0	271	149	10-528
BNT at 3;6	22.5	6.07	10-35
FPT at 3;6	142	16	77-164

- Both previous and simultaneous lexical ability were significantly associated with FPT score at 3;6 (previous:  $r=.44$ ,  $p<.001$ ; simultaneous:  $r=.28$ ,  $p<.05$ )
- Lexical ability at 2;0 explained 20% of the FPT score at 3;6, whereas lexical ability at 3;6 did not explain the FPT score significantly ( $F(2,64)=8.951$ ,  $P<0.001$ ),  $R=0.19$ . intercept: 124.25,  $CDI + 0.041$  and  $BNT + 0.028$ .  $CDI$  (ANOVA  $p<0.001$ ),  $BNT$  (ANOVA,  $p>0.1$ .)
- Children with small lexicon size at 2;0 had significantly weaker phonological skills at 3;6 than children with typical-large lexicon size at 2;0 ( $W=127.5$ ,  $p<0.001$ )

## Subjects and methods

A group of 67 Finnish-speaking, healthy children whose language development was followed longitudinally between 2;0 and 3;6.

At 2;0

Standardised Finnish version of the MacArthur Communicative Development Inventory (Long form; CDI)<sup>2</sup>

At 3;6

Boston Naming Test (BNT)<sup>3</sup>

Finnish Phonology Test (FPT)<sup>4</sup>  
A total score calculated from paradigmatic and phonotactic score

## Analysis:

- Spearman's correlation coefficient values were used to analyse associations.
- Multiple linear regression model was used to analyse predictive value of lexical abilities at 2;0 and 3;6. Outcome variable: total score of FPT. Both predictors (CDI and BNT) were included in the same model.
- Comparison of the phonological skills at 3;6 between children with small /typical-large lexicon size at 2;0
- Small lexicon size at 2;0 <82 words (<17 percentile of the group)

## Discussion and conclusions

Both previous and simultaneous lexical ability were significantly associated with phonological skills at 3;6 in this fair large group of Finnish children. Early lexical ability at 2;0 explained a reasonable amount of later phonological skills. Children with small lexicon size at 2;0 had weaker phonological skills at 3;6 than children with typical-large lexicon size at 2;0.

The present findings align with the bidirectional model<sup>1</sup> for phonological and lexical development, but only partially, since simultaneous lexical ability did not predict FPT score at 3;6. Our findings suggest that early lexicon provides a basis for later phonological development, but the association between lexicon and phonology diminishes as children grow.

Clinical implication: supporting both lexicon and phonology during intervention may benefit both language domains.

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