

# DO PHONOLOGICAL FACTORS EXPLAIN VARYING REALIZATIONS OF PRELEXICAL MORPHEMES BY CHILDREN WITH MODERATE HEARING LOSS?

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## BACKGROUND

Children with moderate hearing loss exhibit phonological difficulties that can persist until the age of seven (Moeller et al, 2010). They might impact the production of grammatical morphemes, and more specifically those whose form is phonologically complex, explaining the children's morphosyntactic delay (Norbury et al, 2001).

This delay is visible in the persisting use of non-target-like forms in prelexical positions. Veneziano & Clark (2016) show that the morphological and referential complexity of this position is acquired gradually by typically developing children.

## HYPOTHESIS

If only phonological factors influence the proportion of non-target-like forms, it would imply:

- (1) an effect of phonological complexity criteria (Kaye & Lowenstamm, 1981 ; Blevins, 1995) such as syllabic structure (presence of a coda, absence of an onset) on the proportion of non-target-like forms.
- (2) No influence of the syntactic position (preverbal or prenominal) on the proportion of non-target-like forms.

## METHODOLOGY

### Population

- Ten French speaking children
- Aged : 3;5 to 5;0
- 40 to 70dB of hearing loss
- Wearing their hearing aids

### Tasks

Two semi-natural language tasks, in interaction with one of their parents: a story-telling task; and a symbolic play activity, with standardized toys.

### Analysis

(1) Classification of the forms in prelexical position according to their similarity to the targeted form : (a) identical to the target (target-like); (b) different from the target (non-target-like); (c) omitted.

(2) Analysis of the syllabic structure of the targeted forms to assess whether the proportion of target-like or non-target-like forms were impacted by this variable. Criteria of complexity : presence of a coda, absence of an onset, linking

(3) Analysis of the syntactic position of the prelexical forms: prenominal or preverbal.

## THE IMPACT OF PHONOLOGICAL COMPLEXITY

In this corpus, 58,9% of the forms were target-like and 35,0% were not.

### CODA

If the targeted morpheme doesn't have a coda, the odds for the form to be produced similarly to the target are higher.

When the targeted morpheme has a coda, the probabilities to produce a target-like form are similar to the probabilities to produce a non-target-like form.

Figure 1 - Distribution of the type of production according to the presence of a coda in the targeted form

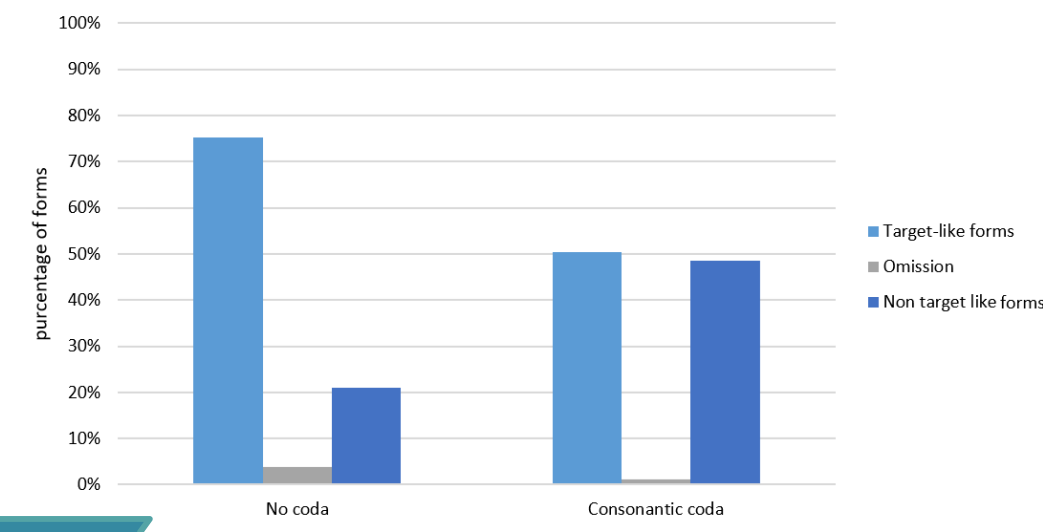
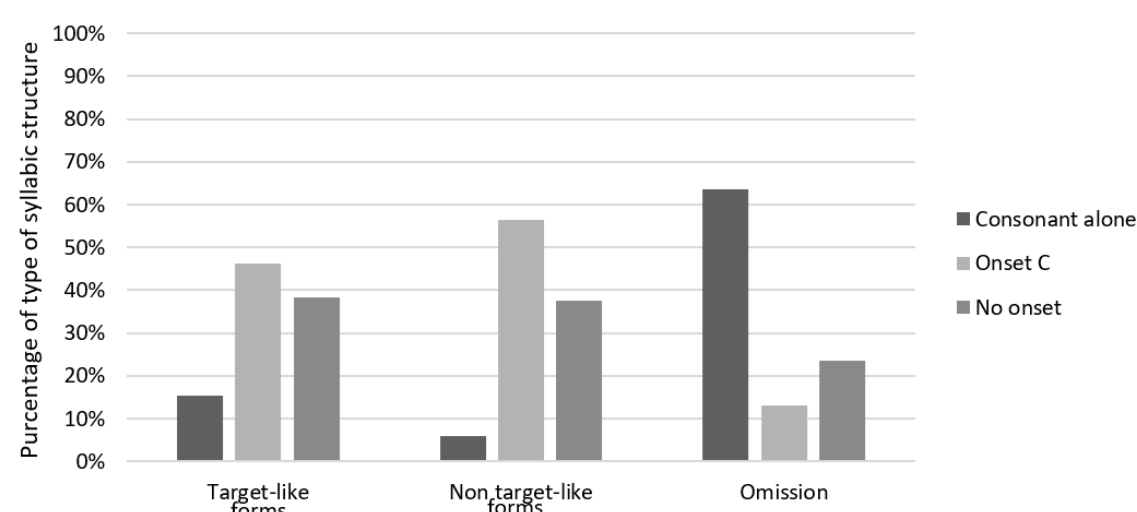


Figure 2 - Distribution of the type of production according to the presence of an onset of the targeted form



### ONSET

The presence of an onset in the targeted morpheme increases the probability of non-target-like forms.

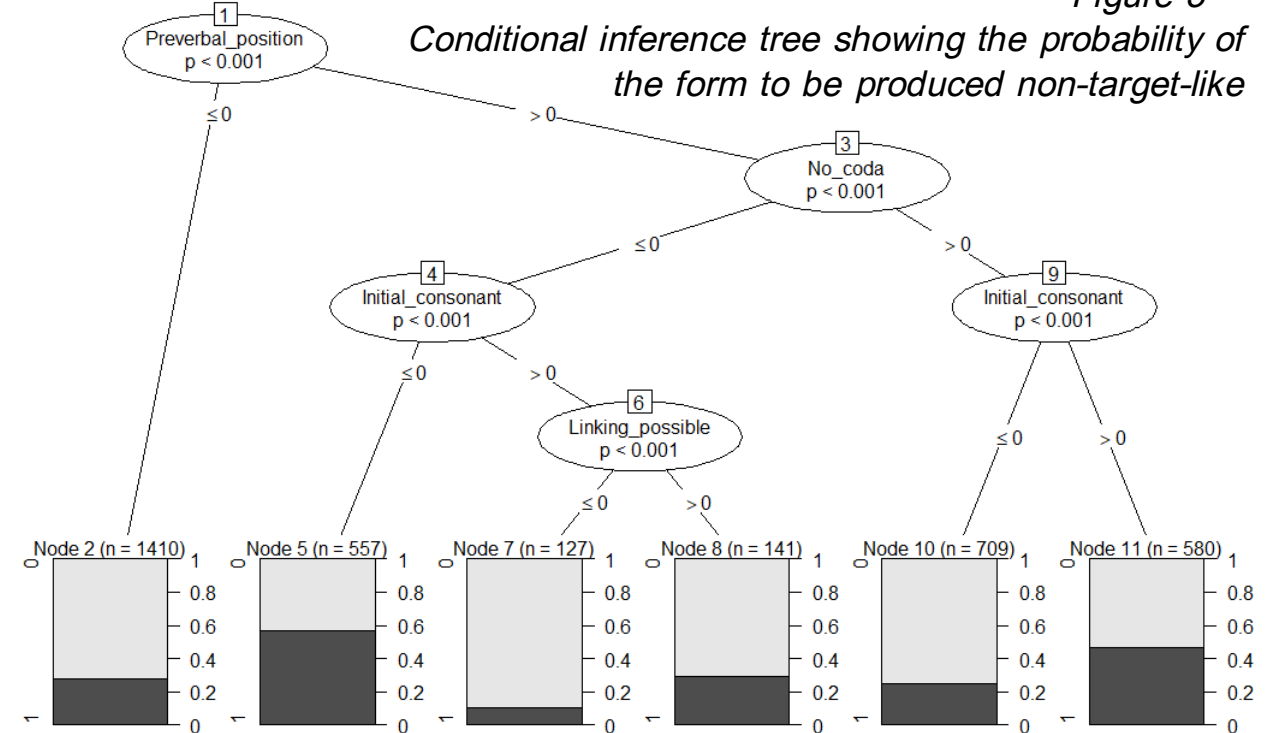
The targeted forms composed by a sole consonant are more likely to be omitted.

## THE INTERTWINING OF FACTORS

The syntactic position has a predominant effect on the probability to produce non-target-like forms. When the form is in prenominal position (preverbal position <0) the proportion of non-target like forms dropped to 28,4% (versus 39,4% in preverbal position) independently of other factors.

When the form is in preverbal position, the presence of coda (No\_coda <0) combine with the absence of an onset initial consonant (Initial\_Consonant <0) make the proportion of non-target-like forms increase to 59%. When there is no possibility that the form could be linked to the following word, the proportion of non-target-like form decrease to 10%.

Figure 3 -



## DISCUSSION AND CONCLUSION

Syllabic structure has a significant impact on the realization of the form, more the form of the targeted morpheme is marked, more it is likely to be transformed.

Preverbal position seems to be a factor of complexity, implying a delay in the acquisition of pronouns by normal-hearing children (Ricard et al, 1999 ; Yamaguchi et al, in press). This complexity, intertwined with phonological factors explain the difficulties observed in the speech of children with moderate hearing loss.

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