**ABSTRACT**

In Dutch, word final neutralization of voicing causes an alternation between singulars and plurals: e.g. one [bet] 'bed' ~ two [beten] 'beds'. Dutch-learning children were tested on their production of /t/ and /d/ in different morphological contexts. Children tended to produce /d/ as [t] in bi-morphemic words (e.g. *[beten]*), whereas they correctly produced /d/ in mono-morphemic words (e.g. *knight*). Children were also more accurate at positing singulars for novel plurals with /t/ (e.g. *sladden*) than for novel plurals with /d/ (e.g. *slaadon*). This finding suggests that 3 yr-olds have not yet learned about the phonotactics of voicing neutralization in relation to morpho-phonological alternations.

**RESULTS: Part A**

![Figure 1: Production of /t/ and /d/ in bi-morphemic vs. mono-morphemic words](image)

An ANOVA revealed a main effect of voicing (responses were more accurate for words with /t/), a main effect of morphology (responses were more accurate in mono-morphemic words), and a significant interaction between voicing and morphology. There was no effect of age.

**Error Analysis**

- 74% (20 out of 27) of errors comprised children's producing /d/ as [t] (e.g. *bedden* 'beds' was produced as *[beten]*).

**RESULTS: Part B**

![Figure 2: Production of singular non-words from plural non-words with intervocalic /t/ or /d/](image)

An ANOVA revealed a main effect of voicing (responses were more accurate for plurals with /t/). There was also an effect of age.

**Error Analysis**

- Almost all errors comprised children's producing a plural rather than a singular (e.g. repetition of *sladden*).
- In a few cases, singulars without codas were produced (e.g. *slad*).
- A perception test showed that these same children were aware of the singular / plural contrasts in these non-words.

**CONCLUSIONS**

- Dutch-learning children fail to reliably produce voicing in alternating contexts (Part A).
- Dutch-learning children are better at producing singulars when given non-words with intervocalic /t/ (non-alternating) than non-words with intervocalic /d/ (Part B).
- These results suggest that children have not yet fully acquired knowledge of voicing neutralization or morpho-phonological voicing alternations, even at a very late stage (44 months).
- We find no support for the claim that early knowledge of phonotactics may aid the acquisition of alternations.

**METHOD**

**Subjects**

- Eighteen 30-32 month-old Dutch-learning children.
- Eighteen 42-44 month-old Dutch-learning children.

**Stimuli**

- 4 bi-morphemic words with /t/: *petten* 'caps', *bedden* 'bedden', *watten* 'water', *ridder* 'knight'
- 4 bi-morphemic words with /d/: *petten* 'caps', *bedden* 'bedden', *watten* 'water', *ridder* 'knight'
- 4 mono-morphemic words with /t/: *pet* 'cap', *bed* 'bed', *wet* 'wet', *rider* 'knight'
- 4 mono-morphemic words with /d/: *pet* 'cap', *bed* 'bed', *wet* 'wet', *rider* 'knight'

**Procedure**

- Picture-naming task: Children were presented with pictures of familiar objects using PowerPoint.
- Subjects were asked to produce the singular.
- These are two *sladden* / *sladon*.
- This a ____________.

**References**


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