

## **Suffix predictability and stem transparency in the acquisition of German noun plurals**

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Introduction. First language acquisition can shed light on the relevance of language use and frequency for morphological theory (Tomasello 2003, Gülzow & Gagarina 2007). When acquiring the German plural system, children have to gain command of two different morphological operations: suffixation (e.g., *Katze* / *Katze-n* ‘cats’) and stem change (e.g., *Apfel* / *Äpfel* ‘apples’), or a combination of both (e.g., *Haus* / *Häus-er* ‘houses’). The aim of this paper is to present a new way of describing the German plural system by proposing that suffix distribution is a function of sonority and gender distributions in language use. Furthermore, we will test the relevance of this model for children’s acquisition of plural suffixes, and will see how it interacts with stem properties in the acquisition process. Consequently, our analysis will give acquisitional evidence also on the long debated morphological problem whether alternations consisting of suffixation and modification have to be conceived of as indivisible alternations or as combinations of a suffixation and a stem modification process (cf. Dressler 1996).

Suffix predictability in language use. We start from the assumption that German plural suffixation primarily depends on two factors: sonority and gender (Ravid et al. 2008: 31). We present a new way of calculating the predictability of a given German plural suffix (-s, -(e)n, -e, -er or zero) in actual language use according to 1) the degree of sonority of the word-final phonological segment, and 2) inherent noun gender. As to sonority, we distinguish four different word-final phonological environments: obstruents, sonorants, reduced vowels (e-shva, a-shva), and full vowels (including diphthongs). As to gender, we consider all 3 genders (feminine, masculine, neuter), against the hypothesis of focussing on plus/minus feminine. The calculations were carried out with a spoken language corpus of what is relevant for acquisition, i.e. child-directed speech data (CDS) consisting of a total of 158.236 word tokens, and a total of 16.124 noun tokens (out of which 2.346 are plural tokens). Plural suffixes in a gender/sonority context with a predictability of more than 70% were classified as highly predictable (HP); a predictability between 30% and 70% was classified as partially predictable (PP); and a predictability below 30% was classified as exceptional (EX), see the table below (calculated for types).

Suffix	Sonority Gender	Obstruent	Sonorant	Reduced Vowel	Full Vowel
-s	fem.	<b>EX</b>	<b>EX</b>	<b>EX</b>	<b>PP</b>
	masc.	<b>EX</b>	<b>EX</b>	<b>EX</b>	<b>PP</b>
	neut.	<b>EX</b>	<b>EX</b>	<b>EX</b>	<b>PP</b>
-(e)n	fem.	<b>PP</b>	<b>HP</b>	<b>HP</b>	<b>PP</b>
	masc.	<b>EX</b>	<b>EX</b>	<b>EX</b>	<b>EX</b>
	neut.	<b>EX</b>	<b>PP</b>	<b>PP</b>	<b>EX</b>
-e	fem.	<b>PP</b>	<b>EX</b>	<b>EX</b>	<b>EX</b>
	masc.	<b>HP</b>	<b>PP</b>	<b>EX</b>	<b>EX</b>
	neut.	<b>PP</b>	<b>EX</b>	<b>EX</b>	<b>EX</b>
-er	fem.	<b>EX</b>	<b>EX</b>	<b>EX</b>	<b>EX</b>
	masc.	<b>EX</b>	<b>EX</b>	<b>EX</b>	<b>EX</b>
	neut.	<b>PP</b>	<b>EX</b>	<b>EX</b>	<b>EX</b>
Zero	fem.	<b>EX</b>	<b>EX</b>	<b>EX</b>	<b>EX</b>
	masc.	<b>EX</b>	<b>PP</b>	<b>HP</b>	<b>EX</b>
	neut.	<b>EX</b>	<b>PP</b>	<b>PP</b>	<b>EX</b>

Stem transparency was divided into no stem change, slight change (reversal of word-final phonemic devoicing) and opacifying umlaut as substantial change.

Suffix predictability and its interaction with stem transparency in language acquisition. In order to test the relevance of suffix predictability for language acquisition, a plural elicitation task was administered to 140 Viennese children, from the age of 3 to 9 years (20 children in 7 age groups). The 27 test items were balanced for suffix predictability (9 highly predictable, 9 partially predictable, 9 exceptional) and for stem transparency (9 no change, 9 slight change, 9 substantial change). Results indicate that, across all age groups, suffix predictability has an impact on children's correct production of plural suffixes. We will discuss how suffix predictability interacts with stem transparency in the acquisition process.

## References

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