

The Acquisition of Finite Verb Morphology in Hearing Impaired Children

Johannes Hennies,^{1,2} Martina Penke,³ Eva Wimmer,^{1,3}

Markus Hess,² Monika Rothweiler¹

(¹Universität Bremen; ²Universitätsklinikum Hamburg-Eppendorf; ³Universität Köln)

To date little is known about the acquisition of language in hard-of-hearing children. During the 'critical' years for language acquisition, children with a sensorineural hearing impairment (HI) often have only restricted access to spoken language input – despite modern hearing aids. Particularly, the sensorineural HI affects the perception of phonemes that fall into higher frequency ranges, such as voiceless coronal consonants. Since in German, such consonants are used to realize inflectional affixes (e.g. *-s* or *-t* for finiteness inflections), the hearing deficit is supposed to affect the acquisition of verbal inflections. First studies report deficits with inflectional morphology in young HI children acquiring English or French (e.g. Norbury et al. 2001, McGuckian & Henry 2007, Tuller & Jakubowicz 2004). Our study investigates whether verb morphology is affected in German children with a moderate HI by specifically targeting the relationship between difficulties in perceiving particular phonemes and the acquisition of inflectional affixes realized by these phonemes.

We report results from two production experiments in a group of 19 German 3-to 4-year old HI toddlers with a moderate bilateral hearing loss compared to 19 age-matched hearing peers (Penke et al. 2011). In the first task, children were asked to describe the action depicted in 30 short video scenes to elicit utterances in 2nd and 3rd person singular and 3rd person plural contexts targeting the production of the verbal suffixes *-s(t)*, *-t* and *-n* ($n = 10$ each). To investigate whether problems in inflecting verb forms are due to the morphosyntactic content of these affixes or due to problems in perceiving the phonemes realizing these morphosyntactic markings, a picture naming task was additionally carried out in which children were required to produce the very same three phonemes in the offset of simplex noun stems (e.g. *Eis* 'ice cream', *Hut* 'hat') ($n = 22$).

A comparison of the results in the video-description task where the phonemes /s/ and /t/ function as agreement markers and the picture naming task where they do not carry morphosyntactic content reveals a close correspondence. In both tasks, the word final phonemes /s/ and /t/ are likely to be avoided, omitted or substituted by other phonemes. Nasal consonants, in contrast, are reliably produced whether or not they constitute affixes or stem final consonants (see figure 1). We therefore suggest that the likeliness to avoid the production of an inflectional ending, particularly in syllable-final position, is not related to the morphosyntactic content of these affixes but to the acoustic properties of the phonemes expressing these affixes. Moreover, the high correctness scores HI children obtain for inflectional affixes support the assumption that the morphosyntactic content of these affixes has been acquired.

Our findings indicate that the production of inflectional morphology is selectively affected in German children with moderate HI. However, this seems to be caused by a problem in perceiving and processing the relevant phonemes used as inflectional affixes and not by a morpho-syntactic deficit. Since the HI children have acquired the inflectional system, our study provides an example for the remarkable resilience of language acquisition in the face of degraded input.

Figures

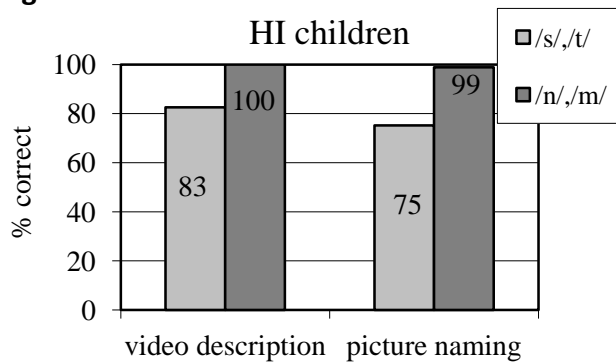


Figure 1. Correctness scores of HI children in both tasks

References

- McGuckian, M. & A. Henry (2007): The grammatical morpheme deficit in moderate hearing impairment. *International Journal of Language and Communication Disorders*, 42, Suppl. 1, 17-136.
- Norbury, C.F., Bishop, D.V.M. & J. Briscoe (2001): Production of English Finite Verb Morphology: A Comparison of SLI and Mild-Moderate Hearing Impairment. *Journal of Speech, Language, and Hearing Research*, 44(1), 165-178.
- Penke, M., E. Wimmer, J. Hennies, M. Hess & M. Rothweiler (2011): The acquisition of finite verb morphology in hearing impaired children. *Manuscript submitted for publication*.
- Tuller, L. & C. Jakubowicz (2004): Développement de la morphosyntaxe du français chez des enfants sourds moyens [Morphosyntactic development of French in children with moderate hearing loss]. *Le Langage et l'Homme: Logopédie, Psychologie, Audiologie*, 14(2), 191-207.