

3. Word-form and word-meaning mismatches in language acquisition

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I. The form-meaning mismatch

- Mappings between words and their meanings are typically assumed to be arbitrary.
- i. A chair is called a *chair* in English, *Stuhl* in German and */kʊr.si:/* (kursi) in Hindi
- ii. Exceptions exist, e.g., onomatopoeia but these are considered just that – exceptions.
- Recent studies suggest that the probability that two words that are related in meaning are also related in form is greater than expected by chance (Monaghan et al. 2014; Dautriche et al. 2016)

Question -> Could there be a *match* (to some limited extent) between word form and meanings after all?

II. Motivation

- Possible that there is a greater correlation between word form and word meaning than previously assumed.
- Such regularities in form-meaning mappings boost word learning, category formation and lexical retrieval (Monaghan et al. 2011; Imai & Kita 2014).
- But there is some ambiguity with regard to the influence of such overlap on processing early in development.
 - i. Children find it difficult to simultaneously learn words that overlap on multiple dimensions (Dautriche et al. 2015)
 - ii. But word-form familiarity and word-meaning familiarity boost learning of other similar-sounding or similar-meaning words (Altvater-Mackensen & Mani 2013; Borovsky et al. 2016; Newman et al. 2008).

III. Research questions

- To what extent is the correlation between semantic and phonological distance between words that is reported in adult lexicons (Monaghan et al. 2014) also found in developing lexicons?
- What are the consequences of potential form-meaning overlap on lexical acquisition and processing?
- To what extent does overlap at both levels boost or hinder word learning and word processing?

IV. Hypotheses and method

Hypothesis: Words that are similar in meaning are also likely to be similar in form (greater than chance)

- Use Wordbank to determine words known to children at different ages.
- Calculate raw Levenshtein distance between two words for measure of phonological distance.
- Accumulate German associative norms including corpus analyses of the contexts in which words occur for measure of semantic distance.
- Estimate correlation between semantic and phonological distance across a set of words in chosen languages provides measure of extent of form-meaning mismatches in developing lexicons.

Hypothesis: Developmental cost with words that overlap on multiple dimensions being more difficult to learn.

- Teach children word-object associations (WOA) that may/not overlap across multiple dimensions and examine learning and processing of WOA with more or less familiar words.



Figure 1: Eyetracking paradigm examining children's learning of and recognition of word-object associations

V. Connections to other research projects

- Type of form-meaning mismatch (1:0) – shared with projects [1, 2](#)
- Empirical focus (language acquisition and processing) – shared with projects [6, 9, 12](#)
- Exchange with project [1](#) with overlapping interest in opacity of agreement expressions
- Methods (experimentation) – shared with [1, 6, 7, 9](#), and (corpus studies) – shared with [virtually all](#)

VI. Possible follow-up studies

1. The development of arbitrariness and systematicity in form-meaning mapping
2. The influence of arbitrariness in retention of WOA
3. Differences in learning of arbitrary and systematic WOA