Infants bind event aspects to nouns

The acquisition of verbs and nouns is considered to be differently difficult. While for nouns, it a mapping of lexical form onto the concept of the object is assumed, for verbs, different aspects of an event have to be recognized to become correctly linked with the lexical form. Accordingly, such views offer an advantage to the acquisition of nouns, since the mapping between a word and a concrete object (Gentner, 1982) results in a relatively stable meaning. In contrast, mapping of a verb to an event, is much more variable, and task-dependent. Recent developmental studies, have also provided new evidence in favor of this difference in acquisition (Bergelson & Swingley, 2012; Bergelson & Swingley, 2013).

Yet, this disadvantage in the acquisition of verbs stands in opposition to embodied cognition approaches positing the comprehension of verbal expressions being linked to mental simulation involving perceptual, motor and affective contents (Barsalou, 2008). Similarly, in developmental approaches, Mandler (2012) suggested that early concepts capture the roles of objects, i.e. what the objects do and what is done to them. In this way, actions are primary in organizing infants' concepts (Mandler, 2006). Even more recently, research has suggested that infants use relational properties instead of one-to-one mappings to learn new words (Yin & Csibra, 2015). This recent finding in a way echoes earlier, functionalist theories of language, according to which infants co-develop concepts about objects and events in dependence of the language input and the experiences they make in the world.

Following such an approach we reasoned that when learning new words, infants do not create simple correspondences with the external world but build relations within rich concepts. For our investigation, we hypothesized that (a) early event concepts are complex and comprise both actions as well as agents and objects involved in these actions and that (b) verbs are understood early in development but might be methodologically difficult to access.

Method

We replicated the Bergelson & Swingley (2012) study in which infants saw pictures of body parts and everyday objects and heard the mother's voice presenting verbal stimuli (see also Parisi & Cribra, 2012) with some modifications: Firstly, we used other pictures of everyday objects. Secondly, instead of nouns that are supposed to match the stimuli, in our study, the mothers provided verbs that can be associated with the presented objects. The verbs were contrasted along the dimensions CARE vs. ACTIVITY.

We tested 36 (18m;18f) 9-10-month-old infants (M = 9;25 ; SD = 19) using a looking while listening preferential looking paradigm with an eye-tracker (X2-60 Tobii). Infants saw two instantiations of paired pictures while hearing four verb pairs.

Results

We found that infants gazed at the target significantly more after hearing the target word then before ($t(35) = 2.26$; $p = .03$).

Our results show that 9-10-month-old infants are able to understand some verbs and refer them to object stimuli. This suggests that actions and objects are inherently linked: young infants can use contextual information (e.g. objects involved in an action) to infer the meaning of action words. Our study complements research

suggesting that children learn language by building relations and drawing from rich concepts.

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