“Both are close”: theoretical and empirical approaches to word meaning

This paper addresses the gap between theoretical research and empirical approaches in Semantics by discussing an experimental study in word meaning acquisition. It focuses on the interpretation of the “approximative adverb” *almost* ([1], [2], [3]) by 4-5 year olds against the background of the “proximal” and “polar” entailments of the adverb that have been proposed in the theoretical literature (see (1)). Children differ from the adults tested in this study in that there is greater variability in the children’s responses; unlike what happens with adults, children’s responses vary depending on the expression modified by the adverb. Building on the question of what is a “unit” ([4]) in the semantic-pragmatic knowledge of the language learner, I discuss the evidence for the child’s semantic representations of *almost* that emerge from the experimental results. I argue that children rely on a holistic representation of the meaning of *almost* that is based on an order or scale. This representation is strongly grounded in collocations found in the input (e.g. in contexts of age-telling) and on the meaning of phrases associated with routinized events. However, the strategies adopted by children and the explicit comments they make during the tasks provide evidence for continuity of child and adult representations of the meaning of *almost*, e.g. by explicitly mentioning “closeness” as a criterion in the response.

In this study, a group of 4-5 year-olds (N = 22, mean age 4;6) and an adult control group (N = 10) heard sentences with *almost* used as a modifier of number words, directional PPs and equative constructions, see (2). These expressions were chosen because they make it possible to test for the two entailments in (1) (cf. [5], [6]) and they allow for plausible contextual manipulations. With number words, the compositional interpretation of *almost n* depends on the numerical order (ascending or descending) provided in the context. With directional PPs and equative constructions, the direction in which the characters move along the contextually given path (see (2b and 2c)) is relevant to the interpretation of the sentence with *almost*. Subjects saw slides on a computer screen, with one character corresponding to each possible response: “less than”, “same as modified expression”, and “more than”. The children were pre-tested for the interpretation of the modified expressions and the experiment was conducted only with those who were accurate in this test.

Mixed-effects binary logistic regression models revealed a significant main effect of age group: the response “same as *n* or more than *n*” (where *n* stands for the semantic value of the modified expression) is dispreferred by adults across the board ($p < 0.0001$). For the children, ca. 60% of the responses for all the modified expressions are “less than *n*”. There was no interaction between age and modified expression, but in the children data, the interpretation of sentences with number words and PPs differs significantly from the interpretation of equatives in favoring the “less than” response ($p < 0.0001$).

With number words and PPs, children tend to provide “adult-like” interpretations of *almost*, but there are differences between the results of both age groups. The hypothesis pursued in this paper is that children rely on a holistic semantic representation of *almost* that is associated with salient scales (like the order of number words) and endpoint-oriented paths, and hence have difficulties when the adverb modifies expressions whose meaning does not conform to these patterns of collocations. This paper raises the question of how context-specific and fine-grained children’s semantic representations are -- and crucially, to what extent these questions can be answered from comprehension data obtained experimentally. Although these issues are specific to language acquisition, they also pertain to the study of meaning in general and to the nature of semantic representations that are assumed by semantic theories.

(1)
"Let A be a formula, let I be a discrete set, and let < be a three-place relation such that for every i* ∈ I, $<_{i*}$ is a strict partial order on I ($i_1 <_{i*} i_2$ is read as i_1 is closer to i* than i_2).
$[[\text{almostA}]]^{i*} = 1$ iff
$[[A]]^{i*} = 0$ [Polar implication]
and there is an i', s.t. for any i'', i' $<_{i*}$ i'', and $[[A]]^{i'} = 1$" [Proximal implication]
(Sevi 1998:56, (8). The terms "polar" and "proximal" are from Horn, 2002).

(2) Experimental items (one example per Condition)

(a) The boys are playing with blocks. Let's see how many blocks each boy has. [*Child counts the blocks for each boy*] Which boy has almost 6 blocks?

(b) There are three frogs next to the lake. The frogs want to jump to the lily pad. Let's see if they can do it. [*The frogs jump, one by one*] There! Which frog got almost to the lily pad?

(c) Our friends are in a jumping contest. The kangaroo is going to jump. [*Kangaroo jumps*] Now the kangaroo's friends are going to jump. [*The animals jump, one by one*] There! Which animal jumped almost as far as the kangaroo?

References:

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