When Mats Meow: Phonological Similarity of Labels and Induction in Young Children

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The ability to make inductive inferences is crucial for humans, and it has long been demonstrated that labels play an important role in induction. However, the mechanism by which labels contribute to induction remained unclear. According to one theoretical position, often referred to as the *naïve theory*, even for young children labels presented as count nouns are special properties: even young children understand that count nouns denote categories, communicating what the things are (Keil, et al, 1998; Gelman & Coley, 1991). According to a recently proposed alternative model SINC (Similarity, Induction and Categorization in Children), children perform induction on the basis of the overall similarity among compared entities, and labels are features contributing to the overall similarity (Sloutsky & Fisher, in press). If labels are features contributing to the overall similarity then not only identical, but phonologically similar labels should contribute to the overall similarity, and therefore to induction. This research was designed to test this prediction of SINC, which, if supported would present challenges to the naïve theory position. Results of two experiments supported the prediction.

Experiment 1: Inductive inference with similar, identical, and different labels

Participants (N = 67, *M* = 4.9 years; *SD* = 0.34) were presented with an induction task in one of the three between subject labeling conditions: identical, similar, and different labels. Children were presented with triads of animal pictures introduced by identical, similar, or different labels, and informed about pseudo-biological properties of two members of each triad. Then children were asked to generalize these properties to the third member of the triad. If labels are category markers as the naïve theory suggests, then identical labels should be fully predictive (thus promoting inferences), while similar labels should be completely non-predictive (thus promoting no inferences). According to the SINC model identical, but also similar labels should promote inductive inferences (i.e., similar labels should be at least partially predictive). Results of Experiment 1 supported predictions of the SINC model: similar labels were found to be partially predictive and likely to promote inductive inferences.

Experiment 2: Label Verification

Results of Experiment 1 could be due to children treating similar novel labels as mispronunciations of identical labels. Experiment 2 was designed to eliminate this potential confound. Participants (N = 29, *M* = 4.8, *SD* = 0.45) were presented with sets of pictures consisting of a Target and four Test stimuli of various degree of similarity to the Target (i.e., identical, very similar, less similar, and dissimilar). On each trial a Target and one of the Test stimuli was labeled with similar labels used in Experiment 1. Children were asked whether the labeled entities had the same name. If children consider similar labels as mispronunciations, then, at least when pictures are identical, they should respond that similar labels were the same. However, the majority of children considered similar labels as different words, and their responses were not affected by picture similarity.

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