Words activate concept formation in children even before this task has been offered

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Introduction

The effect of language on concept formation and development is an ongoing debate among researches (Sloutsky, 2010). According to the previous research labels can facilitate concept formation even if they aren't used as a feedback (Lapyan et al., 2007).

However, in most research investigating language influence on category learning, the varying of verbal labels often correlates with the varying of perceptual features (Landau, Shipley, 2001). Such confound doesn't allow to clarify if the language is used as a means to enrich the perception or it's just a social marker for generalization.

In our previous experiments we separated the process of concept formation from the word use. Adults had to remember items in different conditions: either those items were previously marked by labels or not (Kotov et al., 2012; Kotov et al., in prep.). It turned out that the presence of labels made subjects less sensitive to individual distinctions between items and consequently resulted in poorer memory on such individual examples.

To explore the age limits of this phenomenon we decided to reproduce this procedure on children.

Method

Subjects:

N = 38 children

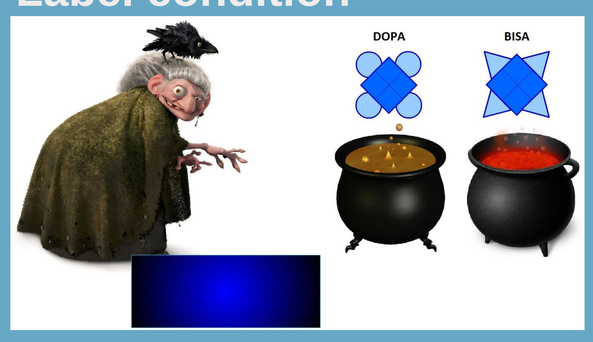
Label condition: 20 children
49-61 months
M=55,4

No-label condition: 18 children
49-61 months
M=55,7

Design	**Experimental conditions:**
Between-subject 2 groups	- Label - No-label

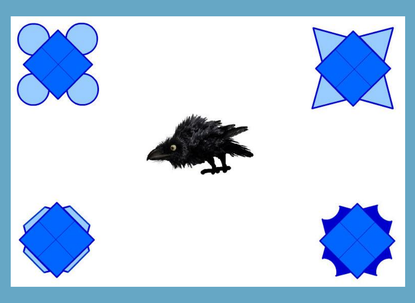
1. Set-up Play

Label condition



No-label condition

2. Noncategorical Visual Identification Task



Label: "Find *bisa/dopa!*"

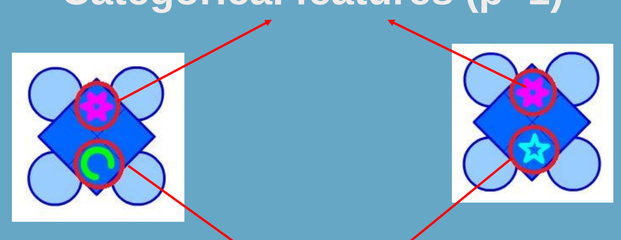
No-label: "Find / *!*"

3. Memory Task

Categorical features (p=1)

Individual features (p=0,33)

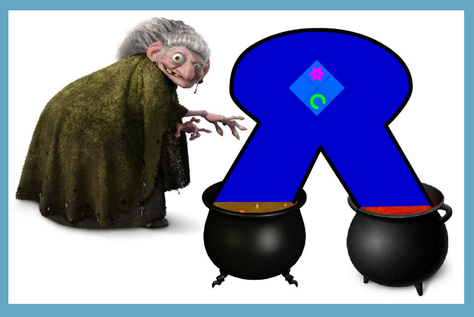
Categorical features (p=1)

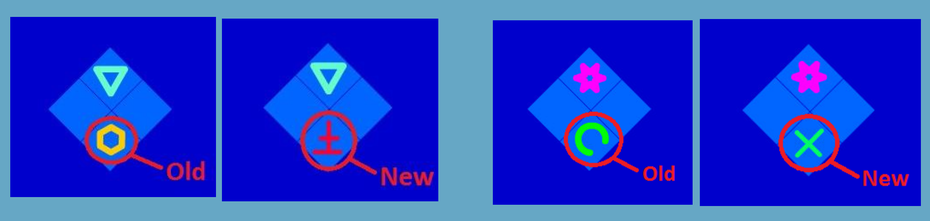


Individual features (p=0,33)

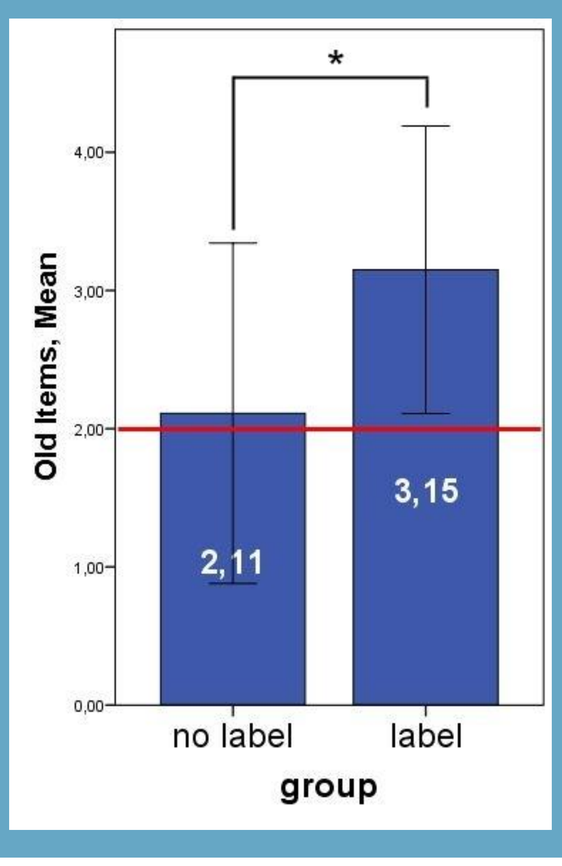
4. Memory Test

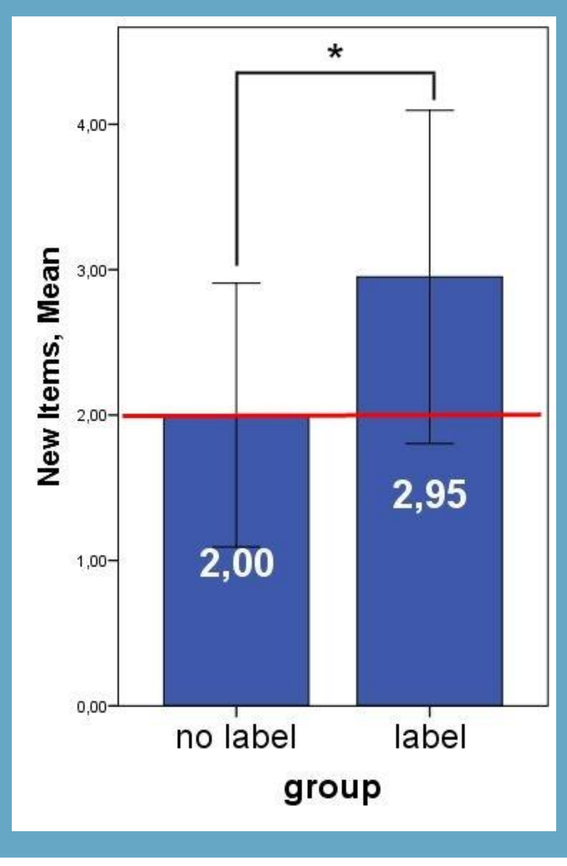
"Where do we put this stone?"





Results





Discussion

1. The influence of language on concept formation in this procedure was found in children. Children in label condition had better memory for old items containing category information than in no label condition.

2. Presence of labels made children less sensitive to individual distinctions between items and consequently resulted in poorer memory on such individual examples, i.e. new items.

3. These results prove that the effect of language influence on concept development can be more distant in time than it was supposed before.

References

1. **Sloutsky, V. M. (2010).** From Perceptual Categories to Concepts: What Develops? *Cognitive Science*.
2. **Lupyan, G., Rakison, D. H., McClelland, J. L., & Mcclell, J. L. (2007)**. Language Is Not Just for Talking Redundant Labels Facilitate Learning of Novel Categories. *Psychological Science*.
3. **Landau, B., & Shipley, E. (2001).** Labelling patterns and object naming. *Developmental Science*.
4. **Kotov A.A., Vlasova E.F., Kotova T.N., Agrba L.B.** (2012) Linguistically modulated perception: how words catalyze categorization. Psycholiguistics (in Russian).

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