Title
The Relationship between Learned Categories and Structural Alignment

Permalink
https://escholarship.org/uc/item/66r1k47t

Journal
Proceedings of the Annual Meeting of the Cognitive Science Society, 23(23)

ISSN
1069-7977

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Publication Date
2001

Peer reviewed
Recent researches suggest that similarity is well characterized as a comparison of structured representations and two kinds of differences yielded through the alignment process were influenced on similarity judgment differently (Markman, & Gentner, 1996). This study applied structural alignment view to category learning and tested the hypothesis that features of categories with alignability between categories are more important than features without alignability in classification of exemplars.

**Method**

**Subjects**

18 university students participated in the experiment.

**Materials & Procedure**

Subjects learned a pair of categories in the learning phase. Category structure composed of short descriptions as features (Table 1). Those features could classified into 3 groups; alignable features (AF), non-alignable features (NF), and common features (CF). AF had a relation to other features composed alternative category as alignable differences. NF did not make alignable differences and were characteristic of one category. CF are in common with two categories. In the learning phase, learning exemplars were used and one learning exemplar had 3 features; one of AF, one of NF, and one of CF. Subjects were presented with the exemplars one at a time and identified them as being in category 1 or 2. After each choice, subjects were given feedback. This procedure was repeated in blocks of 18 exemplars until the subjects had correctly classified over 90% of 18 exemplars. After reaching criterion, subjects entered the test phase which was similar to the learning phase without feedback. In the test phase, test exemplars were used, which composed of “appropriate” and “inappropriate” exemplars. “appropriate” exemplars, used as fillers, could be classified one category using the knowledge of category structure, like learning exemplars. On the other hand, “inappropriate” exemplars could not be classified correctly, and divided into 3 subtypes, subtype A, subtype B, and subtypes C by the difference of component patterns of features (see Table 2).

**Results and Discussion**

The main result are presented in figure 1. The hypothesis of this study predicted that the subtype A exemplars were classified as members of category 1 or 2 by chance, the subtype B tended to be classified as category 1, and the subtype C as category 2. The choice tendency for category 1 was different among subtypes significantly (F(2,34)=6.56, p<.01). The percentage to be classified into category 1 in subtype B was higher than in subtype C. This result suggests that alignable features were used for two categories learning and classified exemplars into categories.

**References**