Testing Additional Category Knowledge in a One-Dimension Sorting Task

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The 1-D Sorting Strategy

The influence of characteristic attributes on concept acquisition and categorization has been shown in different ways (Rips, Shoben, and Smith, 1973; Posner and Keele, 1968). Yet, the results obtained in sorting tasks (Ahn & Medin, 1992; Regehr and Brooks, 1995) suggest that participants largely ignore characteristic attributes. Instead of attempting to maximize within-category similarity and minimize between-category similarity, people tend to choose a salient dimension and divide the exemplars into two categories accordingly.

The widespread use of this strategy, called one-dimension or "1-D" sorting, questions the validity of similarity-based processing as the basis of category learning. However, the 1-D sorting strategy may be preferred simply because it is more economical than similarity-based strategies, which require participants to take into account many more attributes. Moreover, it is not clear whether participants gather some knowledge about the characteristic attributes when performing a 1-D classification task.

Testing the Knowledge of Characteristic Attributes

The goal of this experiment was to determine whether participants would still use a 1-D sorting rule to categorize transfer stimuli following a learning phase in which all attributes had received attention. In the training phase, the participants were asked to sort stimuli belonging to two "family resemblance" categories. In successive blocks, participants were given a different sorting rule, so that ultimately, all the attributes comprising the stimuli had been attended. In the transfer phase, the participants were asked to sort the stimuli into the same two categories without any other instructions. Hence, they were free to use one or many dimension to sort the stimuli. The interaction between the conscious application of 1-D sorting rules and the implicit effects of exemplar learning was evaluated.

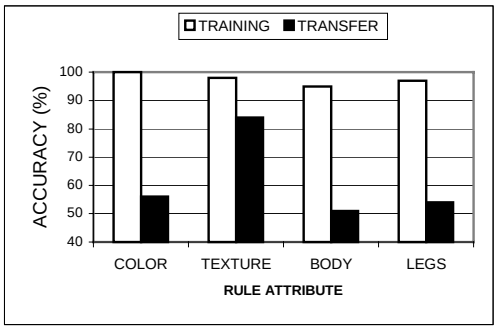

Figure 1: Results from Lacroix, G.L., Giguère, G., Larochelle, S. (2002) have shown that participants were generally not able to classify transfer stimuli correctly without the presence of the rule attribute, thus showing no additional knowledge about the characteristic attributes, except when there was a perfect correlation between the texture and color of the stimuli.

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