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Discovering the Dimension of Abstractness: Structure-Based Model that Learns New Categories and Categorizes on Different Levels of Abstraction

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Abstract : A structure-based model of category learning and categorization at different levels of abstraction is presented. The model compares different structures and expresses their similarity implicitly in the forms of mappings. Based on this similarity, the model can categorize different targets either as members of categories that it already has or creates new categories. The model is novel using two threshold parameters to evaluate the structural correspondence. If the similarity between two structures exceeds the higher threshold, a new sub-ordinate category is created. Vice versa, if the similarity does not exceed the higher threshold but does the lower one, the model creates a new category on higher level of abstraction.

Keywords : analogy-making, categorization, learning of categories, abstraction, hierarchical structure
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