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Looking for a “Very Good Match” Promotes Family Resemblance-based Category Construction

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A central puzzle in higher-order cognition is the unidimensional sort bias: the overwhelming tendency of humans to sort examples in a novel domain based on a single feature when a family resemblance (FR) structure is available. A standard unsupervised category construction task with two prototypes and ‘off-by-one’ distortions was investigated using novel task supports. Participants were instructed to find a “very close match” to begin each category and to expand the groups by identifying additional very close matches. This guides participants to employ stimulus generalization: using close proximity in psychological space to extend a consequence. Exemplar theory accounts for category learning as stimulus generalization plus dimensional selective attention – suggesting that unidimensional sorting arises when a single feature captures attentional control. However, instructional supports to prioritize very close matches shifts the evaluation to a global match resulting in a dramatic increase from nearly none to half of participants producing FR sorts.