Classifying with Essentialized Categories

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Psychological essentialism states that certain categories are assumed to have an underlying hidden reality (or "essence") that defines objects’ identity (Gelman, 2003; Medin & Ortony, 1989). Everyday classification, on the other hand, must be based on the features of objects that are observable. How do we reconcile these facts? One way is to assume that essential features cause observable ones, and that classification involves reasoning backwards from observable features to their hidden cause. Three experiments tested classification with essentialized categories to determine whether causal inference underlies classification.

Method

In each experiment, 24 subjects learned two categories. For example, some subjects learned about Kehoe Ants and their features (high amounts of iron sulfate, hyperactive immune, thick blood) and Argentine Ants and their features (high amounts of metallic sodium, fast digestion, short life span). Both categories were essentialized, because each had one feature (iron sulfate and metallic sodium) that was described as occurring in all category members and no nonmembers. The other features were described as occurring in 75% of their respective category members. Each category also possessed interfeature causal relations. Pairs of ants, shrimp, cars, computers, stars, and molecules were tested.

Fig. 1 presents the causal relations in Expts. 1-3. For example, in Expt. 1’s Category A the essential feature $E_A$ (iron sulfate) was described as causing $A_1$ (hyperactive immune) but not $A_2$ (thick blood); in Category B the essential feature $E_B$ caused $B_2$ but not $B_1$. After learning subjects were presented with pairs of features, one from each category (e.g., $A_1B_2$), and asked to choose whether the item was an A or B. We predicted that features would be more diagnostic of category membership when they could be used to reason backwards to their underlying essence.

![Causal networks used in experiments 1 to 3.](image)

References

