Interaction, cognitive diversity and abstraction

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Abstract

Abstraction lies at the heart of human cognition. While most approaches to abstraction implicitly take the individual as a starting point, we hypothesize abstraction to be contingent on the interactive sharing of diverse perspectives. Interactive alignment, however, can reduce diversity making group members' contributions more similar and redundant, especially if they have not had time to form their own impressions and opinions. We report an experiment investigating the conditions under which participants arrive at a superior, abstract rule-based solution to a problem: inferring the direction of the last gear from the rotation of the first in a series of connected gears. Participants were assigned to three different conditions: 1) individual, 2) dyadic, 3) combined: dyad members start individually but are joint mid through the experiment. We find that performance is significantly higher in the dyadic than in the individual condition, but highest in the combined.