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Strategy Specificity as a Predictor of Mental Set on the Water Jar Task

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Abstract

Mental set occurs when people become entrenched in the problem-solving strategies they develop. Different strategies have different properties, and it is plausible that those properties might modify the probability of mental set. However, for the water jar task (Luchins, 1942), there is still no clear consensus on which strategies people use, and whether strategy use influences the likelihood of mental set. We identified several common strategies used on the water jar task, and found that mental set was related to strategy specificity. Specific, algorithmic strategies were associated with a higher rate of mental set, whereas general problem-solving heuristics were associated with a lower rate. This suggests that people are at the greatest risk for mental set when they create strategies specific to the problem at hand. Specific strategies may be more accurate if the problem demands stay the same, but are less flexible for handling a change in the environment.