ABSTRACT

Clues to Insight:
Differential Effectiveness and Efficiency of Sentences and Pictures as Clues for
Solving Verbal Insight Problems

by

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Abstract

This research project was conducted to clarify the differential effectiveness and efficiency of pictures and sentences as clues for solving verbal insight problems. From an information processing perspective, clues may prime solutions or clues may help resolve impasse. Several hypotheses were tested. First, by definition, faster solution times were expected for priming, a one-stage cognitive process, than for impasse resolution, a multi-stage process. It was predicted that sentence clues would be more effective for priming and picture clues would be more effective for impasse resolution. Second, clues were expected to facilitate problem solving, with no performance difference between sentence and picture clues. Third, a priori information about clue relevance was expected to improve performance.

A 3 (test condition: informed before, informed after, uninformed) x 3 (clue type: relevant picture, relevant sentence, irrelevant clue) between and within subjects design was used. Subjects (N=216) completed an information acquisition task, 12 verbal insight problems, a free recall task, and a post-study questionnaire. This methodology extended prior research by comparing picture and sentence clues in the same experiment, and using both time to solution and solution rates as outcome variables.

The results supported the prediction that sentence clues would be associated with faster solution times (consistent with priming) and picture clues with slower solution times (consistent with impasse resolution). Relevant clues facilitated problem
solving, and there was no reliable difference in solution rates between problems associated with sentence clues and problems associated with picture clues, although sentences were more effective at the margin. There was mixed support for the prediction that a priori information about clue relevance would improve performance. Additionally, recall rates were lower for sentences than pictures, which is consistent with the automatic nature of sentences as primes and the conscious use of picture clues when subjects are at an impasse. In sum, the results support the conclusion that both priming and impasse resolution are viable cognitive mechanisms for solving verbal insight problems. Which mechanism is used is determined by an interaction of the problem, the subject, and the textual or pictorial information available to cue solution.