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Improper analogical transfer impedes creative problem solving

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Abstract

Analogical transfer—applying knowledge from a previous situation to an analogous new situation—has been widely known as a cognitive strategy that fosters creative problem solving. However, there are also “false analogies” where the correct solution for the source problem becomes an erroneous one in the target problem. Using a computer puzzle game that requires non-repetitive solutions to different problems, we examined how false analogy may impede people solving a new problem, by manipulating participants’ exposure to the source problem. We found that participants who used the erroneous solution were less likely to solve the target problem. Participants of the source-exposure group made earlier and more attempts of the erroneous solution in the target problem than the none-exposure group. Despite making improper solution transfers, participants of the source-exposure group reported a higher creativity of themselves in solving the target problem and a lower difficulty of the target problem.