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Restructuring representations in analogy making by children: the role of cognitive flexibility

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Abstract: In classical A:B::C:D analogies, it is often assumed that participants first find a relation between A and B, which is then transferred to C and D. By contrast, we hypothesized that the first interpretation of A-B must sometimes be later revised, given the nature of C and the D available in the solution set. We hypothesized that young children (5-6 year-olds) would encounter difficulties when restructuring is necessary because restructuring requires cognitive flexibility which is less developed in young children. In an A:B::C:D task, we compared analogies requiring restructuring with analogies that did not. We also compared analogies based on weakly semantically associated pairs (e.g., child-bed) with analogies based on strongly semantically associated pairs (e.g., dog-bone). Results revealed an interaction in which the difference between restructuring and no restructuring was significant only for analogies based on weak semantic associations. They were discussed in terms of executive functions.