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Quality of alternatives is related to abstract reasoning

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Abstract: Conditional reasoning involves making inferences from a "if p, then q" major premise. Availability of alternative antecedents increases the probability of giving logical responses to invalid inferences with concrete premises (e.g., Cummins & al., 1991). With abstract premises, alternatives construction becomes cognitively complex. We hypothesized that the quality of alternatives produced in response to explicitly uncertain abstract inferences would be related to abstract reasoning performance. We asked 97 students to justify the response to uncertain AC inferences and to respond to abstract reasoning problems. Justifications were categorized by level of complexity of alternatives (specific, general, formal; Venet & Markovits, 2001). Participants were classed into high or low levels. Participants giving higher levels of justifications obtained better abstract reasoning scores (3.42) than participants with low levels (2.27) or controls who did not generate alternatives (2.26). The nature of cognitive possibilities (Byrne, 2005) thus seems critical in understanding abstract reasoning.