Source-Object Familiarity Inflates JOUs, Even for Inapt Analogies

Thomas D. Griffin (tgriffin@uic.edu)
University of Illinois at Chicago, Department of Psychology

Lena Hildenbrand (lhilde3@uic.edu)
University of Illinois at Chicago, Department of Psychology

Jennifer Wiley (jwiley@uic.edu)
University of Illinois at Chicago, Department of Psychology

Allison J. Jaeger (ajb1193@msstate.edu)
Mississippi State University, Department of Psychology

Nicole D. LaDue (nladue@niu.edu)
Northern Illinois University, Department of Earth, Atmosphere, and Environment

Abstract

Analogies used in science instruction connect new, unfamiliar science concepts (the target) to common everyday objects or processes that the student is more familiar with (the source). However, that familiarity with the source-objects could inflate readers' judgments of understanding (JOUs) for the target science concepts, even when the analogies are too superficial or inapt to improve actual understanding. The first experiment showed that novice students without prior geoscience experience are particularly susceptible to JOU inflation in response to superficial geoscience analogies. The second experiment showed that JOUs are inflated even when the analogies are inapt, consisting of familiar source objects that are randomly paired with the target geoscience concepts. Additional results further support that analogies cause novice learners to ignore judgment cues related to geoscience knowledge in favor of prior familiarity with the source object, undermining evaluation of the target concept and its analogized relation to the source.

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