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Mutual Alignment Analogy Facilitates Abstraction and Transfer of a Complex Scientific Principle

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Abstract: Learning about a scientific principle often occurs in the context of unfamiliar examples. Mutual alignment analogy—a type of analogical comparison in which the analogs are only partially understood—has been shown to facilitate learning from unfamiliar examples (Kurtz, Miao, & Gentner, 2001; Loewenstein, Thompson, & Gentner, 1999, 2003). The present study examined the role of mutual alignment analogy in the abstraction and transfer of a complex scientific principle from examples presented in expository texts. The results provide evidence that promoting comparison between two examples and orienting the learner toward the relational commonality between the examples result in greater abstraction and transfer of the principle "convergent evolution". These findings suggest that mutual alignment analogy can promote learning complex scientific principles from texts. Mutual alignment analogy is therefore likely to be a helpful learning aid and pedagogical technique in science education.