Structure Mapping in Visual Comparison: Embodied Correspondence Lines?

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Structure-mapping theory asserts that analogical comparison involves a process of structural alignment based on finding common relational structure (Gentner, 1983). During this process, correspondences are established between the aligned components of the analogs—both relations and objects. In the present experiment, we show that this alignment process is strikingly more efficient when the "correspondence lines" between matching components are maximally *direct*—that is, when they run perpendicular to the principal axes of the two structures. When asked to make same/different judgments across two shape sequences (e.g., circle-square-circle vs. circle-square-square), judgments are faster when horizontal sequences are placed vertically (one on top of another), than horizontally (one next to the other), and vice versa. Perpendicular arrangement is still more efficient even when correspondence lines do not cross other objects, as revealed by an advantage over diagonal arrangement. These findings suggest an embodied aspect for structural alignment between visual images.