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When showing and telling convey different stories: concept learning transmission chains lead to different outcomes when using demonstration vs. verbal description

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Abstract

When trying to convey conceptual knowledge to others, we may either show examples of the concept, or explicitly describe defining features of the concept. Here, we ask whether the dominant mode of knowledge transmission in a society shapes how concepts are ultimately represented by its members. We develop a computational model that generates novel predictions about how communication methods of a culture shape its conceptual structure. To test these predictions, we use a pre-registered, cultural transmission chain experimental paradigm, where participants transmit information about an imaginary biological category from one person to another along a chain ($N = 1200$), using only verbal descriptions ("tell") or only examples ("show"). Even though both conditions began with the same concept, the mode of transmission led participants to develop radically different representations. "Tell" chains lead participants to overemphasize easily namable features, whereas "show" chains lead to rely more on prior knowledge.