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Proceedings of the Annual Meeting of the Cognitive Science Society

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 48(0)

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Publication Date

2026

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Individuals Rapidly Create Communicatively Efficient Gestural Symbols

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Abstract

Humans can create a new language with a sizable lexicon quickly. To build a shared lexicon, individuals have to first create symbols for concepts. We investigated this symbol creation process by asking hearing speakers to create silent gestures representing concepts (manipulable objects). Here we showed that people can rapidly create easy-to-comprehend and easy-to-produce symbols through perspective taking. The gesture produced by the majority of participants for a given concept was the one most effective for comprehension. More empathetic participants estimated gestures' communicative efficacy more accurately and produced more communicatively effective gestures. Furthermore, participants estimated communicative efficacy of the gesture they had produced to be higher than that of gestures they had not. Crucially, participants consider both communicative efficacy and production costs when creating gestural symbols. Thus, humans can rapidly create communicatively efficient symbols, which may partly explain why a new language can emerge quickly in a community.