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Authors

Misyak, Jennifer

Chater, Nick

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The spontaneous creation of systems of conventions

Jennifer Misyak

University of Warwick, Coventry, UK

Nick Chater

University of Warwick, Coventry, UK

Abstract: We used a non-linguistic experimental paradigm to explore the instantaneous creation and adaption of novel communicative systems of conventions. Groups of participants played a computer game, in which they sent and interpreted minimal signals to obtain shared rewards within a virtual scene. Within groups, trials manipulated the space of possible signals that could be sent, and the set of meanings to be expressed (the range of cases for the locations and quantities of rewards). Between groups, initial conditions were manipulated through early exposure to different sets of communicative cases.

We observed participants spontaneously develop systems of conventions that were adapted to the full range of signal-meaning mappings encountered. Groups favoured systems optimised to their particular initial learning environment. These systems become entrenched and transferred to new signal-mapping environments to which they were not adapted.