

# Why is language unique to humans?

September 19 2013

---



Credit: © Demo

New research published today in *Journal of the Royal Society Interface* suggests that human language was made possible by the evolution of particular psychological abilities.

Researchers from Durham University explain that the uniquely expressive power of human language requires humans to create and use signals in a flexible way. They claim that this was only made possible by the evolution of particular psychological abilities, and thus explain why language is unique to humans.

Using a [mathematical model](#), Dr Thomas Scott-Phillips and his colleagues, show that the evolution of combinatorial signals, in which

two or more signals are combined together, and which is crucial to the expressive power of [human language](#), is in general very unlikely to occur, unless a species has some particular [psychological mechanisms](#). Humans, and probably no other species, have these, and this may explain why only humans have language.

In a combinatorial [communication system](#), some signals consist of the combinations of other signals. Such systems are more efficient than equivalent, non-combinatorial systems, yet despite this they are rare in nature. Previous studies have not sufficiently explained why this is the case. The new model shows that the interdependence of signals and responses places significant constraints on the historical pathways by which combinatorial signals might emerge, to the extent that anything other than the most simple form of combinatorial communication is extremely unlikely.

The scientists argue that these constraints can only be bypassed if individuals have the sufficient socio-[cognitive capacity](#) to engage in ostensive communication. Humans, but probably no other species, have this ability. This may explain why language, which is massively combinatorial, is such an extreme exception to nature's general trend.

**More information:** Scott-Phillips, T. and Blythe, R. Why is combinatorial communication rare in the natural world, and why is language an exception to this trend? *Journal of the Royal Society Interface*. [dx.doi.org/10.1098/rsif.2013.0520](https://doi.org/10.1098/rsif.2013.0520)

Provided by The Royal Society

Citation: Why is language unique to humans? (2013, September 19) retrieved 26 April 2024 from <https://phys.org/news/2013-09-language-unique-humans.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.