

Bias key in language evolution

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The report concludes there is interplay between a conservative egocentric bias in which participants retained their initial sign until they encountered the soap and musical note. Credit: Jared Klett

As one local scientist so eloquently phrases it, the evolution of language is like a man with a Ford car, whose previous two cars were Fords but after experiencing his friend's Toyota has switched brands to what he considers a better quality vehicle.

According to UWA School of Psychology Associate Professor Nicolas Fay this simple analogy captures the findings of his most recent research; the [evolution of language](#) is not neutral but depends on selectionist cultural evolutionary dynamics.

His team used an experiment based on a simple communication game to conclude that the interplay of egocentric bias and content bias preserves existing language from insignificant change.

They found the bias also allows for the adoption of superior variants through which language evolves.

The team used four eight-person micro-societies for their experiment in which each was asked to draw signs to communicate to a partner 16 concepts like soap opera, Brad Pitt and microwave.

Using [soap opera](#) as an example, participants used a variety of different signs when they played with their first partner—a bar of soap and a musical note, a television, a shower and a love heart.

As they interacted with other members of the micro-society, the soap and the musical note propagated until everyone was using a refined version of the sign.

"People stick with what they have used in the past which is an egocentric-bias; it's familiar and it's worked well for them, unless they encounter something they deem superior; a content-bias," A/Prof Fay says.

"When this happens the new variant is adopted and the old variant is extinguished.

"Our study suggests that changes in human communication systems work like this, but at the word-level, and we suspect this type of dynamics can

explain other cultural phenomena too."

The report concludes there is interplay between a conservative egocentric bias in which participants retained their initial sign until they encountered the [soap](#) and musical note.

This indicates an opportunistic content bias that provides for the adoption of beneficial signs.

A/Prof Fay says language's 'content bias' means it evolves through a process where people assess language in terms of its intrinsic value.

"It's been very hard to prove that people do that but because we've done such a constrained experiment we can say with confidence that it exists and people do make these evaluations, and their behaviour is determined by the evaluation they make," he says.

More information: Monica Tamariz, T. Mark Ellison, Dale J. Barr, and Nicolas Fay. "Cultural selection drives the evolution of human communication systems." *Proc. R. Soc. B* August 7, 2014 281 1788 20140488; [DOI: 10.1098/rspb.2014.0488](https://doi.org/10.1098/rspb.2014.0488) 1471-2954

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