

## **An experiment for the investigation of the role of the freerider problem in language change.**

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While there has likely not been enough time for human language to become fully genetically specified (Worden 1995), we should not assume that, given sufficient time, it would do so. In fact, it is reasonable to suppose that there has been pressure for it to remain underspecified (Dunbar 2003: 230). Change and variation mean that language is flexible and can adapt to changing environments. Moreover, human beings are highly adept at using linguistic variation to identify individuals as belonging (or not belonging) to this or that group. This is of great benefit to the establishment and maintenance of complex networks based on cooperative exchange. Such networks are threatened by individuals that exploit the altruistic behaviour of others. From within the same community, these “freeriders” can be punished, or shunned. For mobile organisms, outsiders to the community pose a more significant threat, as they likelihood of meeting past victims is considerably reduced (Enquist and Leimar 1993; Dunbar 1996; Nettle and Dunbar 1997; Nettle 1999).

This indexical function of language is the stuff of much sociolinguistic work (see e.g. Labov 1963; Trudgill 1974; Evans 2004). But such studies are constrained by reality: one cannot easily monitor language change in real time, and it is hard to isolate the role of particular social forces. Computer simulations (e.g. Nettle and Dunbar 1997, Nettle 1999) allow greater manipulation, but they are highly simplified. Experimental work with human subjects is a middle-ground: the environment is artificial, but the agents fully human. Here, I present such an experiment: participants learn a small artificial language and play an online team-game that simulates an environment in which recognising outsiders is paramount; then I analyse their success and the influence of the game on their linguistic behaviour.

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