

# Responses

## Responses To This Article

[Across the Curious Parallel of Language and Species Evolution](#)

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- [Language is nothing special](#)  
Jamie Tehrani, Alex Bentley (Durham), Michael O'Brien (Missouri) (04 August 2008)
- [The analogy breaks down](#)  
John Leonard, none (24 July 2008)

### Language is nothing special

Jamie Tehrani

Research Fellow

Dept. Anthropology, Durham University

### [E-mail](#)

Additional Authors: Alex Bentley (Durham), Michael O'Brien (Missouri)

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Whitfield drew divided responses when he asked researchers whether new advances in evolutionary linguistics could inspire similar approaches to other cultural phenomena. Whereas Mark Pagel finds language exceptional because its “heritability is too high and the transmission too precise” compared to other forms of cultural transmission, Mesoudi and Fitch regard language as a “model system” for culture change, “the jewel in the crown” for memetic science.

In fact, language is neither unique nor exemplary in cultural evolution. For example, techniques of phylogenetic reconstruction have been applied to a variety of cultural traditions other than languages, including medieval manuscripts [1], prehistoric stone tools [2], textiles [3] and pre-

alphabetic scripts [4]. Although many cultural traits are exchanged among societies more easily than genes are among species, this is no less true of languages, where so-called 'loan words' are extremely common (according to some estimates, up to 70% of English words are borrowed from Latin, French, Greek and other foreign languages). As such, there is little empirical basis for the claim that languages are more like species than are other kinds of cultural information.

In some respects, language is actually quite a poor example of the parallels between cultural and genetic change. Words, though socially selected, are not tested against the physical environment. But many other socially learned behaviours are. Evolutionary archaeologists [5, 6] have long argued that pots, tools and clothing are as much a part of human phenotypes as bone, muscle tissue and skin. Indeed, because material objects are so crucial to individual survival and reproduction, they exemplify the key Darwinian principles of variation, competition and inheritance. Rogers and Ehrlich [7], for example, examined the evolution of Polynesian canoes by testing whether design traits that actually affected the chance of a successful ocean voyage evolved at a different rate from decorative motifs. Just as Darwinian theory would predict, they found the functional design traits to be constrained by natural selection, evolving more slowly than the fitness-neutral traits.

One point on which Whitfield is certainly correct is that linguists have access to an enviable wealth of data. However, with most spoken language unrecorded and writing limited to 5,000 years past, linguistic data thins out rapidly as one looks further back in time. In contrast, the archaeological record contains rich evidence regarding of tool-making, craft production, habitat and even social organisation over hundreds of thousands of years. To understand the processes of cultural evolution over truly evolutionary timescales, the study of material culture promises to provide us with insights that are at least as important as those to be gained from language.

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### **The analogy breaks down**

John Leonard

n/a

no academic affiliation

[E-mail](#)

Additional Authors: none

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Whilst the analogy between language evolution and evolution has some interesting parallels there are two cases at least where the analogy breaks down.

1. Areal diffusion: this is where languages which may not be closely related but are spoken in communities which are in contact come to share features. For example Romanian, Bulgarian, Albanian and Modern Greek share features of grammar through speakers of these languages emulating grammar and word-order between the languages. This is despite the fact that these languages each belong to a different stem of the Indo-European family-tree and haven't officially shared a common ancestor for thousands of years.

This would be the equivalent of a spider, a centipede, a mammal and a fish all simultaneously evolving, say, beaks.

2. Creolisation: a more extreme version of the above, where two unrelated languages blend and produce a new language. Creolisation has happened at least twice in the history of English, in the C12-C14 when English was so influenced by French that it absorbed a large portion of its vocabulary and several grammatical patterns, as well as jettisoning other features of its Germanic heritage. An earlier episode was when, in the C9-C11, English was modified by contact with Old Norse (admittedly a closely related language). These two episodes are documented, an earlier undocumented episode may have been in the 2nd millennium BCE when Proto-Germanic (the ancestor of the Germanic languages) was creolised by contact with another language (possibly the ancestor of Finnish/Hungarian), and dramatically simplified its grammar from the highly

complex ancestral Indo-European forms preserved in Sanskrit and Ancient Greek. This would be the equivalent of a mammal and bird hybridising and producing a species with characteristics of both parents.

RMW Dixon in his *The Rise and Fall of Languages* (CUP 1997) reckons that these two mechanisms are responsible for a great deal of the change in time of languages, rather than the traditional genetic models of language change.