FUNDAMENTAL FLAWS IN MINIMALIST ACCOUNTS OF LANGUAGE: REMOVING BARRIERS TO AN UNDERSTANDING OF LANGUAGE EVOLUTION

ANDREW FEENEY

*Corresponding Author: andrew.feeney@northumbria.ac.uk
Department of Humanities, Northumbria University, Newcastle upon Tyne

This year sees the 25th anniversary of the publication of Chomsky's 'the Minimalist Program' (1995), and while generative linguistics now faces multiple challenges to its philosophical basis, as well as its concomitant linguistic analyses – most notably from the broad school characterized as *Cognitive Linguistics* (e.g. Geeraerts & Cuyckens, 2007) – the generative approach maintains a significant influence in the field of cognitive science. And while in the early days, generative linguistics was both motivated by a need to account for Plato's problem (the logical problem of language acquisition by which children appeared able to acquire a linguistic system in a rapid and systematic manner despite the impoverished nature of their primary linguistic data) and had a significant impact on the course of the study of language acquisition, so more recently (if to a lesser extent) generative linguistic accounts of the human faculty for language have had to be defended in terms of a plausible evolutionary scenario, and have consequently had an impact on the nature of evolutionary linguistic inquiry.

However, Minimalism today is not a single unified theory of language. There is, for example, a substantial difference in the understanding of the properties of lexical items and the operations that underpin derivation. On the one hand there are those (including Chomsky) who adhere to a *Strong Minimalist Thesis* in which the core linguistic operations are reduced to an absolute minimum (perhaps only labelling and merge) whereby undesirable derivations are filtered out at the non-linguistic interfaces. In contrast there are minimalists who argue for a complex system of features which constrain merge in such a way that non-grammatical derivations are avoided – so called *crash-proof* grammars (see Putnam, 2010). Roughly corresponding to each of these perspectives respectively are proponents of a rapid emergence of complex language (Berwick & Chomsky, 2016; Berwick & Chomsky, 2017) and those who propose a classical Darwinian gradualism (e.g. Pinker & Jackendoff, 2005; Jackendoff &

Pinker, 2005). I will argue that both explanations are fundamentally flawed in their conceptions of the human faculty for language and, more significantly, their account of its evolutionary origins.

An examination of the evidence from contributory disciplines to the study of hominin evolution reveals two clearly distinguishable periods in the evolution of human cognition corresponding to stages of 'punctuated equilibrium' (Gould & Eldridge, 1993). The first of these followed a period, approximately two million years ago, in which there were a comparatively large number of changes to genes and genomic regions (especially in the Human Accelerated Region 1) with consequences for brain lateralization, connectivity and overall brain size (Kamm et al., 2013). Newly emerging behaviours evidenced at this time, and indicative of significant cognitive changes, include sophisticated (mode 2) tool use, migration out of Africa and probable use of fire. Such accomplishments are indicative of cooperation beyond that exhibited by any preceding hominins (Tomasello et al., 2012).

While it is possible that these premodern humans were communicating in a more sophisticated way than any other species had achieved at this time, via a form of a simple protolanguage of concatenated symbols, the following period of a million years or so was characterized by almost complete cultural stasis indicative of a species with a cognitive capacity that lacked substantial creativity. In 'Dual Processing Theory' (DPT) this is understood as 'System' 1, which is evolutionary ancient and shared with other species (see Evans & Frankish, 2009). A second intense episode of evolutionary activity followed around 500 thousand years ago involving further growth and reorganization of the brain which resulted in an advanced theory of mind and a uniquely human, hierarchically structured, creative System 2 type cognitive processing. Extant systems for intentional communication were coopted for the external representation of this increasing complex mind-internal cognition, becoming increasingly complex as the task required.

This account provides further support to the notion of language in the 'Representational Hypothesis' (e.g. Burton-Roberts, 2011) in which we posit a mind internal structured cognition – the sole locus of semantics and syntax – and a distinct phonological system of representation. I argue that this mind internal, hierarchically structured thought is not realized externally as in the Minimalist Program, but is rather represented in language in the form of a symbolic, semiotic system grounded purely in the properties of the articulatory-phonetic system. There is no hierarchically structured syntax in language nor are there any semantic properties. Language is a complex system of linear phonological representation subject to human pragmatic interpretation. Adherence to an orthodox Minimalist notion of language, the search for the cognitive foundations

of linguistic syntax and semantics (e.g. Friederici et al., 2017) and their evolutionary origins, will only impede progress in the understanding of language evolution.

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