COMMUNICATION OR COGNITION? THE LOCUS OF RECURSION IN THE EVOLUTION OF HUMAN LANGUAGE

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It is now more than 25 years since the publication of the 'Minimalist Program' (Chomsky: 1995) and this latest configuration of generative linguistics continues to exert considerable influence within the discipline and beyond. However, a major explanatory constraint against which such theories must now be evaluated has arisen in the form of the question of language evolution. This paper seeks to identify and resolve tensions in the notion of 'recursion' in relation to generative grammar and its interfaces with the conceptual-intentional (CI) and articulatory-perceptual (AP) or sensory-motor (SM) systems.

Writers working in different models of linguistics adhere to various accounts of how language evolved. In particular there is a distinction between those who propose a classic neo-Darwinian gradual narrative, and those, including Chomsky, who claim that the core aspect of language had a more or less instantaneous emergence in early *Homo sapiens*. I agree that positing an incremental evolution of such a mind internal capacity is deeply problematical. However, I argue that a saltationist account of the emergence of language, which seeks to identify a single key evolutionary step, is also flawed. The essential depiction of the evolutionary basis of a Minimalist theory of language appeared in Hauser, Chomsky and Fitch (2002) and was later clarified (Fitch, Hauser and Chomsky, 2005; Chomsky, 2005). In this account the uniquely human aspect of language was defined as the narrow recursive operation 'merge' by which lexical items were combined in hierarchical derivations.

The use of 'recursion' is not always well-defined and has resulted in considerable debate in the literature (see e.g. Jackendoff & Pinker, 2005; and papers in Lowenthal & Lefebvre, 2014). Nevertheless, two defining qualities can be identified. Firstly, there is the condition that the output of an earlier stage must constitute the input to a subsequent one, as in Fibonacci series. Secondly, often highlighted in relation to language, is the capacity for one element of type X to be embedded in an element of the same type. However, while hierarchical recursion certainly *appears* to be inherent in linguistic 'structure', it is also clearly evident in other aspects of modern human cognition, most clearly in the

capacity by which I am able to have a thought about your belief about someone else's belief, and so on. While primates, like all higher animals, have a rich conceptual system and a basic ability to reason based on observable cause and effect relations, there is undoubtedly, to a greater or lesser degree, a 'mental gap' between humans and other hominins and non-humans, often described as 'intentionality' or 'theory of mind' (e.g. Baron-Cohen, 1995). Furthermore, within cognitive science there are many compatible perspectives on human thought (CI system) that envisage individuals having a conceptual array and a system for structuring concepts independent of (externalised i.e. articulated) language, including 'language of thought' (Fodor, 1975, 2008) and similar hypotheses (e.g. Carey, 2011; Harnard, 2010; Wyn et al, 2009).

The question then arises of the locus of recursion and its evolutionary origin in relation to human language. While it has been suggested that this recursive property in cognition may be the source for the apparent recursion in language ('an optimal solution to expressing recursive thought', Kinsella, 2009: 152), there are no empirical or theoretical grounds for positing the existence of an autonomous level of linguistic syntactic structure in any sense. If there is a wholly internal system for the recursive hierarchical structuring of conceptual material (i.e. into thoughts), that constitutes the human CI system, then all that is additionally required is a separate system for the communication of those thoughts to others, the AP/SM system. This, I argue here, is effected by means of a wholly external system of semiotic representation as conceived in the Representational Hypothesis (RH) (e.g. Burton-Roberts, 2011). A central tenet of the RH is that there are essentially only two elements – sound (sign) and thought (signified) – in what is traditionally understood as language. In interpreting the word 'cat' the phonological string /kæt/ leads directly to a mental representation of the concept [CAT]; there is no need for intermediate categories such as a noun, a 'syntactic' object, nor any reason why such a level of representation would have evolved (either gradually or abruptly). The same is true of composite multi-conceptual entities including full propositions. Devitt attributes this thesis that 'representations are not to be multiplied beyond necessity (2006: 51) to Pylyshyn and, borrowing from Occam, terms it 'Pylyshyn's Razor'. There is simply no evolutionary rationale for positing a syntactic architecture, neither cognitive nor communicative; and certainly not (contra widespread assumption) for the purpose of disambiguation, which is entirely mental.

Pursuit of the origins of language in the style of the MP, the quest for the source of *linguistic* recursion, can only hinder further insight into language evolution.

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