Authors of target article: Christophe Heintz and Thom Scott-Phillips

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Commentary title: No Unleashed Expression Without Language

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Abstract:

While the metarepresentational structure of ostensive communication may explain the unleashing of human expression, it does not explain the open-endedness of the thoughts expressed/communicated, nor how the multiply embedded nature of the metarepresentational structure invoked arose. These both require the recursivity of human language, a capacity which must be distinguished from external (public) languages and their use in communication.

Heinz & Scott-Phillips (H&S-P) give a compelling account of how expression was 'unleashed' in human evolution, based centrally on the metarepresentational structure of ostensive communication, developed within a partner choice social ecology where there is selective advantage for behaviour that is cooperative. It is claimed that this structure, comprising a communicative intention to provide receivers with evidence of an intention to inform them, enables communication to be 'about anything at all' (domain-general) while meeting the evolutionary constraint on communicative systems of being statistically mutually beneficial to producer and receiver. The open-endedness of human expression/communication is *not* based on the open-ended combinatorial possibilities of human language: 'Natural languages, in all their combinatorial richness, are a means by which we *exploit* unleashed expression, rather than being the source of unleashed expression' (p. xx) and so, they conclude, the evolutionary emergence of language must have followed, rather than preceded, the evolutionary emergence of ostensive communication.

While welcoming the foundational role given here to cognitive pragmatics, I think that there are two important explanatory gaps in this account and that language (in all its 'combinatorial richness') is a crucial component of both. First, open-ended (unleashed) expression/communication entails open-endedness of that which can be expressed/communicated, that is, the thoughts and attitudes that are the content of our informative intentions. Here, then, is the first explanatory gap: how is it that human informative intentions can be about anything at all? Dan Sperber (2000), whose ideas infuse the work of H&S-P, emphasizes that human *non*-metarepresentational mental representational capacities have rich and indefinitely varied contents, indicative of 'a system of internal representations that is – or is equivalent to – a mental language with compositionality and recursion' (Sperber 2000: 119). The word 'language' is apposite here: the open-ended content of our informative intentions depends on our recursive linguistic ability, albeit so far manifest in a *language of thought*, yet to be externalized into a public system usable for communication.

Second, the pivotal metarepresentational structure of ostensive communication itself entails a cognitive capacity for recursive embedding - of representations within representations. The structure requires (at least) four levels of metarepresentation: 'Mary intends that [Peter believes that [she intends that [he believes that [the berries are edible]]]]. In related work by Scott-Phillips and colleagues, the orders of metarepresentation humans are shown to manipulate run to seven or eight orders (O'Grady et al. 2015, Scott-Phillips 2015). Here, then, is the second explanatory gap: how did this recursive property of our mind-reading (metarepresentational) capacity arise? As suggested above, even without *meta*representation, our mental representational system is a language - open-ended, recursive, semantically compositional. Our capacity to represent representations has to be at least as rich as the representations it represents, and, citing Sperber (2000: 119) again: 'the only cost-effective way to achieve this is to have the expressions of the object-language do double service as expressions of the meta-language'. By 'language' what is intended here is a mental representation system that manifests a capacity for recursive (self-embedding) structures harnessed to a conceptual-intentional system. So, again, the human language capacity, as manifest in thought, specifically here as informative intentions, is presupposed by the metarepresentational structure of ostensive communication.

This is not to say that employment of a recursive language of thought is sufficient to explain the human metarepresentational capacity. A basic requirement is that representations (with their content properties) are apprehended as things in the world, which, along with dogs, trees and rain, can be represented, but recursivity is another necessary component of the capacity.

The word 'language' as used in the evolutionary literature on communication (and elsewhere) is highly polysemous, including (a) the human language capacity, (b) public languages, (c) language use, (d) linguistic communication, (e) linguistic stimuli. H&S-P's topic is human communication and when they talk of 'language' they mean those public languages that we employ in linguistic communication, with their cultural histories of usage conventions and innovations. And when they talk of the 'language-ready' brain (p. xx), they mean the evolutionary stage at which the human mind/brain was ready to use language *for communication*, thereby massively enhancing the range and fine-grainedness of the expression of informative intentions. However, this 'language' talk can become misleading: H&S-P say they are providing an 'adaptationist and cognitive answer to the "Why humans?" question about language origins, that is clearly different to prominent biolinguistic approaches ....' (p. xx). But these are two quite different pursuits: while the biolinguistic program focuses on the origin of the human language capacity, H&S-P focus on the conditions that led to the use of languages in communication.

Linguistic recursion grants us enormous computational power; Fitch (2010: 90) says '[it is] the means by which finite brains achieve unfettered potential expressivity'. Arguably, this is the primary focus of an evolutionary account of language, with its use in communication and the ensuing cultural evolution of usage conventions as secondary. Work within the biolinguistic program on the origins of human language unpicks the 'mosaic' of components that make up language in the broad sense and isolates, as specifically linguistic, the simple but powerful recursive operation 'Merge', responsible for the hierarchical self-embedding structures of human syntax. It seems to have arisen from some rewiring of the brain, whether an effect of increased brain size or a chance mutation, and proved so advantageous to planning and thinking that it was selected for as an instrument of thought (Hauser et al. 2002, Chomsky 2010, Boeckx 2013, Reboul 2017), only subsequently exapted for use in communication. Linguistic syntax isn't designed for communicative purposes: it disallows many structures that are perfectly interpretable and so of potential communicative utility (Carston 2015). There is mounting evidence that syntax is optimized to satisfy its interface with conceptual-intentional systems, rather than its interface with the sensorimotor systems that enable its externalization (in various forms) for use in communication, a secondary function (Chomsky 2010).

According to H&S-P, humans were not 'language-ready' until they became ostensive communicators. I would say that a species is not 'ostension-communication-ready' before it has the capacity of linguistic recursion.

Reference List:

Boeckx, C. (2013). Biolinguistics: forays into human cognitive biology. *Journal of Anthropological Sciences*, 91, 63-89.

Carston, R. (2015). Pragmatics and semantics. In Y. Huang (Ed.) *Oxford handbook of pragmatics* (pp. 453-472). Oxford University Press.

Chomsky, N. (2010). Some simple evo devo theses: How true might they be for language? In R. Larson, V. Déprez, & H. Yamakido (Eds.), *The evolution of human language: Biolinguistic perspectives* (pp. 45-62). Cambridge University Press.

Fitch, W. T. (2010). Three meanings of "recursion": key distinctions for biolinguistics. In R. Larson, V. Déprez, & H. Yamakido (Eds.), *The evolution of human language: Biolinguistic perspectives* (pp. 73-90). Cambridge University Press.

Hauser, M., Chomsky, N., & Fitch, W. T. (2002). The language faculty: What is it, who has it, and how did it evolve? *Science*, 298, 1569–1579.

O'Grady, C., Kliesch, C., Smith, K., Scott-Phillips, T. (2015). The ease and extent of recursive mindreading, across implicit and explicit tasks. *Evolution and Human Behavior*, 36, 313–322.

Reboul, A. (2017). *Cognition and communication in the evolution of language*. Oxford University Press.

Scott-Phillips, T. (2015). *Speaking our minds*. Palgrave Macmillan.

Sperber, D. (2000). Metarepresentations in an evolutionary perspective. In D. Sperber (Ed.), *Metarepresentations: A multidisciplinary perspective* (pp. 117-137). Oxford: Oxford University Press.