YOUR THEORY OF LANGUAGE EVOLUTION ALSO DEPENDS ON YOUR VIEW OF EVOLUTION

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One exciting but often puzzling aspect of the field of Language Evolution is the variety of theories and approaches it includes. These not only embrace different, sometimes contradictory assumptions, but also often seek explanations to different questions. An interesting topic is thus how different theories/ approaches are related, i.e. how different assumptions may lead to disparate questions and views, and how contradictory different assumptions made in the field in fact are.

In an important contribution, Jackendoff (2010) argued that "what there is for a theory of language to explain" depends on one's theory of "what language is", discussing how different views on the "innate language capacity" and on how domain-specific it is lead to different theories on how that language capacity might have evolved. As Jackendoff mentions, some defend little or nothing special (i.e. domain-specific) is needed for the evolution of language, making it essentially a "cultural phenomenon". In the same article, however, he states that "if that ("disparate languages" passed down through cultural transmission) is all there is to language, a theory of the evolution of language has nothing at all to explain". Therefore, although Jackendoff speaks of cultural evolution, he sees a clear contrast between this and language evolution, apparently equated with biological evolution and deemed more important.

Others distinguish even more clearly between *evolution*, as a specifically biological phenomenon, and *language change*: Berwick & Chomsky (2016, p. 92) explicitly say "Languages change, but they do not evolve. (…) nonbiological evolution (…) is not evolution at all"; and Andersen (2006) has a whole chapter arguing "that there is no chance of explaining language *change* by the mechanisms of *evolutionary* theory". For some (e.g. Berwick & Chomsky), this

distinction is taken as given - perhaps reflecting the Chomskyan view that linguistic variation and change are strongly constrained by a shared Universal Grammar. Others, like Andersen (2006) and Itkonen (1999), have discussed at some length what they see as *disanalogies* that would disavow the use of *evolutionary thinking* to explain *cultural* linguistic phenomena.

Although researchers who advocate for a cultural evolutionary approach to language change and *evolution* (i.e. *origin of modern human languages*) have provided some answers to such criticisms (e.g. Dediu et al, 2013, p. 305-307; Steels, 2017), little conversation seems to occur between both sides of the divide. In part, this may reflect different conceptions of *language*, as pointed by Jackendoff (2010), and even mirror the Formalist-Functionalist divide common in linguistics. However, it seems clear that another aspect underlying the divide are different understandings of *evolution* - including *what counts as evolution*, *what evolution can/ should explain* and related questions. This suggests that some of the ongoing debates in the field are *inherently theoretical*, and thus cannot be solved solely empirically, since new evidence may be interpreted differently and/ or given different weights depending on one's assumptions.

Discussion on "what is evolution" and on whether it is possible (or productive) to expand evolutionary thinking beyond biology has a prolific history in the philosophy of biology (e.g. Lewontin, 1970; Hull, 1988; Godfrey-Smith, 2007, 2009, 2012; also Price, 1995[1971]; Frank, 2012; Luque, 2017). Assuming an ontology based on a 'general selection theory' (e.g. Croft, 2000; Clark, 2010; Gong, 2012; Steels & Szathmáry, 2018), 'units of language' may be interpreted as 'units of selection' and/or linguistic *replicators* and *interactors* (*sensu* Hull, 1988) may be defined, allowing *linguistic* changes to be studied alongside or independently of genetic changes in speakers. In fact, models based on similar assumptions have shown how *cultural language evolution* could have shaped modern human language(s) (see e.g. Steels, 2010; Kirby, 2013). On the other hand, assuming that 'evolution' is limited to *genetic* changes raises questions about what is inherently different in *cultural* changes, and whether phenomena at that level might not have long-term effects in the evolution of human language(s).

Taking as a "general model" Kirby (2017, p.125)'s idea that language involves the interaction of three dynamical systems (*individual learning, cultural evolution and biological evolution*), important differences between theories may be recognized by considering which of these systems in fact involve *evolution*, which are deemed more important, and how they influence each other in each approach.

It is perhaps not surprising that one's theory of *Language Evolution* depends on one's theories of *language* and *evolution*; thus, clearing assumptions in both regards may go a great way in building more constructive exchanges in the field.

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