

In his excellent book, Wengrow argues that animal composites spread because of both cognitive and social-historical factors. The cognitive factors include human preferences for minimally counterintuitive images, and the way in which these composite images are especially well fit to the mode of perception of the world as made of divisible, recombinable parts (rather than unique totalities) fostered by the state-like systems of organisation. The social-historical factors include among them urbanisation, state growth, display of cosmopolitan prestige by élites, and intense cultural exchange brought about by trading activity. As non-experts on these empirical matters, we found Wengrow's data fascinating and his arguments largely persuasive. For these reasons alone *The Origins of Monsters (TOM)* is a welcome contribution to cultural epidemiology.

In several passages (e.g. p. 7, 110-111), Wengrow suggests that his findings and conclusions not only contribute to, but also amend and extend the project of an epidemiology of representations, as developed by Dan Sperber, Pascal Boyer, and others. For instance, "the distribution of composite figures in the visual record offers fertile testing ground for an "epidemiological" approach to culture, and ultimately forces a revision of some of its central assumptions" (p. 7). Wengrow believes this because, on his understanding, the project of an epidemiology of representations is "a school of evolutionary psychology" (p. 20) aiming at explaining culture in terms of largely innate cognitive dispositions, whereas his data show that such factors are only part of the story. For instance:

I suggest we can still accept, with the evolutionary psychologists, that the transmission of cultural imaginaries within a given population is grounded in frameworks of inference that are intuitively shared by most of its members. But it is only in view of the unique plasticity of human cognition – its embedding within forms of practical reason; its ability to shape and be shaped by institutional environments constructed over historical rather than genetic timescales – that the value of this insight becomes clear. (TOM p. 111).

This interpretation of the epidemiology of representations is not an uncommon one, but it is, we are sure, an unfortunate misunderstanding, comprised of two parts, as we describe below. The upshot of this is that, rather than revising the epidemiology of representations, TOM in fact subscribes to its orthodox version, and in fact makes an important empirical contribution to it.

First, factors of attraction are not limited to psychological factors, such as those that Wengrow draws attention to, but also include ecological factors. On the one hand, the local environment selects the members of a population, provides the inputs for individuals to process, and puts temporal, spatial and material constraints to the formation, transmission, and stability of representations. These are all ecological factors. Demography is a good example, as too are some of the factors that Wengrow draws attention to in this case, such as urbanisation and state growth. On the other hand, the mind and its equipment determine which available inputs are processed and how, and what information influences behaviour. These are psychological factors. From its inception, the idea of cultural attraction included both psychological and ecological factors as key components of the explanation of the distribution of cultural representations (Sperber, 1996, p. 113). Their equal importance is illustrated by, for instance, the title of the relevant section in Sperber's *Explaining Culture* (1996): "Ecological and Psychological factors of attraction". It is the same in later work, where ecological factors are listed beside random forces, natural selection, and psychological factors as different aspects of cultural attraction (Sperber & Claidière, 2008). Psychological factors are "properties of the members of a population: psychological and biological susceptibilities", whereas ecological factors are "properties of the environment of the population" (Claidière et al., 2014, p. 7).

Second, psychological factors of attraction do not include only the genetically-determined cognitive structures which are adaptations to the ancestral environment produced on the time-scale of

biological evolution, but also those psychological aspects that are the output of cultural cognitive development on the historical time-scale (Claidière et al., 2014; Claidière & Sperber, 2007; Sperber & Claidière, 2008; Sperber, 1996). Again, Wengrow points to several such factors. So too, incidentally, can ecological factors originate in both the natural environment and the culturally modified environment, which includes the pool of public cultural representations available to population members, and which can cause individuals to interpret inputs in locally converging ways (Sperber & Claidière, 2008; Sperber, 1996).

Having said all of that, Wengrow's interpretation of the project of an epidemiology of representations, as more narrow than its architects intended, is not an uncommon one. Henrich & Boyd (2002), for example, criticised Sperber, Atran, and Boyer for a supposed exclusive interest in the role of the innate structures of human mind in shaping cultural evolution, and for paying insufficient attention to social factors involved in the transmission of cultural representations, and also population dynamic models of cultural change (Henrich & Boyd, 2002, p. 87). In their reply to that article, Claidière & Sperber (2007) do mention the existence of different kinds of factors of attraction: "At the most general level, [the factors of attraction] may have to do with psychological dispositions or with environmental constraints and affordances", and underlined that "contrary to what Henrich and Boyd suggest, it has never been part of the theory that factors of attraction should be exclusively cognitive" (p. 92).

However, since this reply was principally focused on other matters (in particular the role of selection and cognitive transformation in cultural change), they did not dwell on the point. Perhaps this was a missed opportunity for further clarification: the same misunderstanding recurs elsewhere (see Acerbi & Mesoudi, 2015 for some recent discussion).

Going back to *The Origins of Monsters*, it seems to us that the epidemiological approach already offers W. all the conceptual tools that he needs for his explanation of the massive spread of composite images in the Bronze Age. Wengrow's analysis of the "cultural ecology" of composites is entirely in line with the complete version of the epidemiology of representations, and is actually, we believe, a brave and impressive application of the theory to the archaeological record.

References

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