

Every year the website edge.org asks their panel a general question on science and/or society. The 2014 question was: “[What scientific idea is ready for retirement?](#)” I did not read (yet) all the answers, but I was surprised to see that two of them, from [Pascal Boyer](#) and [John Tooby](#), were one and the same: culture. One could take the answers as a provocation of two evolutionary psychology-minded scholars against mainstream cultural anthropology (which I’d subscribe to). However, knowing Boyer and Tooby’s work, and since, when people ask me what my research is about, I tend to answer “human culture” or “cultural evolution”, I think I have to take this challenge quite seriously.

On one level, I agree completely with the answer: “culture” cannot be considered as an unproblematic explanation of any phenomenon. I was recently reflecting on the fact that, while I consider myself an atheist, I find it often unpleasant to hear – let alone pronounce – profanities. Rationally, I know that they are simply a series of sounds, but still I cannot avoid being annoyed. The imaginary naive anthropologist would say: of course, it is your culture! (I am Italian, and I received a then standard Catholic education). But this is exactly what we want to explain: why is this specific “cultural stuff” (being bothered by profanities) and not others (say going to church or pray) still present?

I think that every reader of this blog would agree that it is not useful to use culture as an explanation: we can not explain X (my problematic relationship with profanities, the readiness to perceive interpersonal threats in Southern USA, etc.) with “culture”. As Boyer writes in his answer, “that such processes could lead to roughly stable representations across large numbers of people is a wonderful, anti-entropic process that cries out for explanation”. However I feel like this is a starting point. I would be interested in X as a “cultural stuff”, and then try to explain it. Boyer and Tooby do not seem to agree: “culture”, in their view, is not just mistakenly used as an explanation. It is not a scientific concept at all. Tooby writes:

“Attempting to construct a science built around culture (or learning) as a unitary concept is as misguided as attempting to develop a robust science of white things (egg shells, clouds, O-type stars, Pat Boone, human scleras, bones, first generation MacBooks, dandelion sap, lilies...)”

This is a quite serious accusation. Try to build a unitary explanatory framework for egg shells and first generation MacBooks (who is Pat Boone?) seems indeed a desperate endeavor. Are we in such a situation? An accepted working definition of culture, for people interested in a naturalistic explanation of it, is usually something like “socially transmitted information”. I know this will not satisfy everybody but, for the sake of discussion, let’s assume that one can mostly agree with it (I do).

Now, if we use this working definition to decide what belongs to culture, we need to acknowledge that the set has somehow fuzzy boundaries. “Social” transmission does not pick out precisely some pieces of information or behaviors from others. One of the clearest and most important message of recent cognitive anthropology is that socially transmitted information is in general not simply copied from one head to another: it is reconstructed using previous individual knowledge. Or, even if we want to give more importance to the “copying” aspect, some information will be more likely to spread because of certain common features of human minds. The same Pascal Boyer has convincingly argued, for example, that minimally counter-intuitive agents, i.e. agents that mainly conform to our intuitive, universal, expectations of how an agent should behave and appear, but with a few violations of the same expectations, are more memorable than completely intuitive ones as well as completely counter-intuitive ones. Superman can fly and has problems with kryptonite, but his behavior is understandable (he feels lonely, he has a strong sense of justice, etc.). Shall we consider Superman (or supernatural beliefs, which, according to Boyer is successful – partly – for the same reason) less “cultural” than other domains where individual predispositions are less important?

This is clearly not very satisfying.

Also “classic” cultural evolution research has emphasized the importance of social and individual learning being intertwined. There is also a name for this: Roger’s paradox. The anthropologist Alan Rogers (find the original paper [here](#)) showed, with a simple model, a counter-intuitive result: in a changing environment, in a population in which individuals are individual learners or social learners, the fitness of the latter, at equilibrium, is equal to the fitness of the former, so that there would not be selection for social learning. In short, this is due to the fact that social learners are “information scroungers” that spare the cost of individual learning but cannot track changes in the environment. While the fitness of individual learners is constant (the benefit of performing the correct behavior minus the cost of tuning to the environment), the fitness of social learners depends on the composition of the population: the more social learners, the less reliable information, the smaller the fitness. At equilibrium, Rogers shows, the composition of the population is such that the fitness of social and individual learners is the same. As social learning is everywhere, this has been called a paradox. The “solutions” of Roger’s paradox (see, for example, [here](#) and [here](#)) all basically involve the possibility that individuals are both social and individual learners.

It seems, then, that it is quite difficult to use “social” transmission to isolate what culture is, as individual learning, as well as universal features of human psychology, are likely to play a role in all instances of social transmission. One could answer: yes, of course we know this is important, culture is “socially transmitted information (in which individual learning, etc. have an important part)”. However, the problem with this definition is that, like in the white-things-science of John Tooby, everything goes. Indeed the diffusion of first generation MacBooks is a good topic for cultural evolution studies, as well, I suppose, as the [diffusion of possible uses for egg shells](#) (I checked Pat Boone on [wikipedia](#): definitely a topic for us).

Is the situation for “culture” as a scientific concept that bad? I think it is quite interesting to take this criticism seriously and to ponder on the possible problems of the “socially transmitted information” definition. However I am not so pessimistic. In a next post (as this became way too long) I will propose a couple of alternatives. One is to drop the “socially transmitted” part (as I suppose anthropologists like Dan Sperber would suggest), and one - which I prefer - involves the idea that studying “culture” does not imply defining a specific domain, but defining how “cultural stuff” are studied, what kind of questions are asked, what kind of properties we are interested in. Other scientific disciplines, say physics or chemistry, not only study all white things, but all things, of all colors, and I do not think this would be an argument to retire them. Stay tuned!