

These are Olivier Morin's remarks on the [workshop on cultural evolution](#) convened by Dan Dennett in Santa Fe in May 2014. Dennett's introduction is [here](#).

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Here is my 200% subjective summary of the main points of agreement (and some disagreements) touched upon in our (to me quite unforgettable) workshop.

On memes and replicators

There seems to be a consensus (although I am sometimes not sure whether to include Blackmore in it) on several points:

— « Let's be Darwinian about Darwinism » (Dennett). Darwinian evolution should not be essentialized, there are vast grey areas between boundary cases and ideal Darwinian populations. In that spirit, we can make room for creative anticipation and transformation in our views of cultural evolution. Memes, like other scientific notions, can survive a radical re-thinking of the theory they first served to advertize: « I want to let the word "meme" go the way the words "atom" and "gene" went: de-Darwinize it! » (Dennett)

— Both transformation and selection drive cultural evolution. We don't know what their respective weights are (and the answer probably varies quite a lot from situation to situation) but there are reasons to think that these weights contribute to cultural evolution in an additive way: the less of one, the more of the other. Also, the proportion of transformation vs. replication determines what area we are in in Godfrey-Smith's space.

— We seem to agree upon the importance of distinguishing between recurrence and replication (Godfrey-Smith, Sperber). When a material is reliably transformed in a certain direction, it can reach an "attractor" state where any departures from its current state will cause it to be transformed back to the normal state (as Feher et al.'s experiment with finches illustrates). The kind of cultural transmission that follows can look a lot like replication (since similarity between models and descendants can be quite high), but the underlying mechanism is not replicative at all, since the parent's state does not cause its descendant's state. How much of the similarity we observe in cultural transmission is due to attraction, not replication, is not clear, but we should not underestimate the risks of wrongly positing replicative mechanisms when dealing with mere recurrence.

- One disagreement: Is evolution becoming more memetic, or less, or neither? Dennett argues that there has been a recent and ongoing de-Darwinization of culture. For Blackmore, on the other hand, « we are still in the primitive soup », cultural replication is in its infancy, and over time memes become better at replicating (as we see with cultural content that replicates not in our head, but in digital environments, with near-perfect fidelity — internet memes, "memes", etc.). Some others said they did not see a trend in either direction, without excluding the idea that cultures could move between different states in Godfrey-Smith's multi-dimensional space.

Cooperation and Cultural Group Selection

— Many versions of cultural group selection theory have been discussed, and there is no doubt that we agree on some of these versions. To recap, depending on the models, groups may be:

(1) Defined demographically, and competing by eliminating other groups (warfare, differential survival).

(2) Defined as political entities (i.e. sets of people cooperating together), and competing by

attracting migrants from other groups. (For instance, if they could, most North Koreans would be fleeing to South Korea which has better institutions that prevent, for instance, mass starving. In this case, South Korea would not eliminate North Koreans as a population, but the Republic of South Korea as a polity could win over its Northern neighbour.)

(3) Defined by the use of certain institutions (which may be used independently by several independent political or demographic entities). Parliamentary regimes, for instance, have displaced other forms of government in many countries. Here, the competition is purely one of ideas: the set of all parliamentary regimes does not constitute a political unit (some parliamentary regimes are at war with other parliamentary regimes). Cultural forms simply compete against other cultural forms.

Against critics like Ruth Mace, who insist that the term “Group Selection” is not fit to cover such a wide range of definitions, Boyd insists that, from a modelling point of view, evolution in all these cases is fuelled by inter-group differences (with the caveat that “groups” mean quite different things in each of the three cases). There is broad agreement on the view that (at least the last two) mechanisms of “group selection” must play a crucial role in the history of cooperation for our species. There is indeed a disagreement on whether it is a good idea to lump together types 1, 2 and 3 of Cultural Group Selection, and to call them “Group Selection”, given the wide range of diverse phenomena brought under this label, and the diversity of predictions yielded by each model.

— There is agreement on the importance of solving the problem of equilibrium selection. Reciprocity, punishment, etc. can (by virtue of the Folk Theorem) stabilize any interaction (cooperative, exploitative, etc.). We agree (I think) that cultural evolution is of great help in exploring the space of possible equilibria and select the best, as Henrich and others pointed out. One proposal that we did not discuss is the idea that equilibrium selection may be achieved through partner choice (with individuals leaving the partners with whom they are stuck in a bad equilibrium) rather than through Cultural Group Selection. This proposal is quite popular in the literature on equilibrium selection. It is unclear, however, whether there would be any real difference between type-2 Cultural Group Selection and partner choice. (As noted, it is also controversial whether type-2 CGS constitutes group selection in a meaningful sense.)

— Group solidarity: (I don't know whether to count that one as a point of agreement or not. I was absent on Monday and the following is a reconstitution, mostly from breakfast conversations!) We take seriously the view that collective rituals can induce prosocial feelings, as stressed by Sterelny and Henrich, especially William McNeill's “dance and drill”; but the importance of the effects induced is still unclear. Also unclear is whether they can efficiently replace more banal cohesion-inducing forces, like coercion or material incentives, although Sterelny's discussion of Göbekli Tepe offered interesting arguments for this view. Sperber points out that we know very little about the actual workings of ritually-induced group cohesion, which must be treated as a kind of black box (as opposed to a truly naturalistic explanation).

- Culture, adaptation and moves in Design Space.

— There seems to be strong overall agreement on the adaptivity of culture once we reach the bottom line. As Boyd put it in his discussion of Blackmore, “Coevolution with a selfish entity does not in any way necessarily imply parasitism.” (N.B. This is a good line to use in fights with one's significant other. I will make sure to re-use it ;o). The benefits of coevolution with culture, up till present times, haven't been much disputed, so I suppose we agree on them. There is less consensus regarding the present situation, and it seems obvious to all that some cultural innovations (at least) decrease human adaptation.

— The rise of complex and functional adaptation. There is complete agreement on the importance of

cultural learning in creating complex norms or technologies, and no question that most such innovations would be beyond the reach of untaught evolved intuitions, a point rightly stressed by Henrich, Richerson, Boyd.

— Psychological biases (some of which are innate and widely shared in our species) influence the way we explore the Design Space of culture. Some forms are more likely to evolve due to what Richerson, Henrich & Boyd call “content biases”. As Henrich points out, these biases may orient cultural evolution away from adaptive designs (Fiji food taboos). Sperber, Morin, Claidière argue that such biases may also have adaptive effects; obviously there is room for both claims to be true.

Some disagreement remains on related subsidiary issues:

(1) What is “improvisational intelligence” capable of? Both Dennett (in discussing “Bernstein’s lament”, the sadness of the composer who needs to manufacture a hit by painful trial and error) and Richerson (along with Boyd and Henrich) strongly doubt that improvisational intelligence can by itself get us very far in Design Space. The truly important problems are simply too complex and too novel. I have argued that this may not always be true and I have presented several tentative examples (sound symbolism; pure coordination games; the design of writing systems) where individual intuitions seem to get it right without the contribution of a protracted and painful evolution by trial-and-error. What marks out these cases, I think, is that they are all cases where we play a game with other humans, not against nature. As Boyd et al. argue, it is extremely hard to anticipate what a good design for a canoe will be. Our intuitions are not completely helpless, they do restrict the Design Space in ways that are useful (few people try to build stone canoes)—but they only go so far. Yet, if the cultural inventions we talk about are meant to have their effects on other human minds, not on nature, our intuitions start to become much more helpful: it is much easier to ask one’s intuitions what the ideal sound for the word “bad” would be, or how legible a given letter would turn out to be, etc. That is because we can instantly and effortlessly test these designs on our own brain.

(2) Are the respective contribution of cultural learning and individual cognition additive or interacting? Sperber, Morin (probably also Claidière) insist on the interplay between cultural transmission and evolved intuitions. They tend to take the view that cultural evolution will usually reinforce or magnify cognitive attraction. Henrich, Boyd and Richerson (it seems to me) often talk of cultural learning as an alternative to individual learning (rather than a complement). They talk of cultural influence (e.g. prestige or success biases) as a way of over-riding psychological biases. The respective strength of local cultural influences vs. general psychological constraints is difficult to measure if we do not know how both sets of factors come together (in an additive fashion or otherwise). Thus, the field is probably too young for there to be meaningful disagreements on this point.

n.b. Olivier Morin’s website is [here](#).