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COGS 184

Week 9 Commentary

In Richerson et al., they discuss the idea of *cultural group selection* (CGS) and its impact on the evolution of modern humans. The basic premise is that we use culture to discriminate between human groups. The authors state that "organic differences between human groups were small, while differences in cultural features…were large". I see this as saying that phenotypic differences are more salient than genotypic differences assuming that culture is part of your phenotype.

The authors begin with the idea of the theory itself. However, they don't actually provide a definition of CGS but provide broad mechanisms for variation and behavior in groups. Mechanisms that spread "good" behavior include *natural selection* (I found this argument weak), *selective imitation* (do we really only imitate those who are "successful"? I think not), and *selective migration* (not enough evidence of this).

The first mechanism for variation among group members is *accurate rapid social learning*. This I 100% back; this is the result of teaching which has clearly enabled humans to get to where we are now. Second, *conformist social learning*: I would agree that social learning does help us to conform to values but they do not explain how. I argue that teaching causes conformity because humans will position your hand in the right way or show you the "correct" method (which non-human primate would never do). Conformity would also be likely because of the prevalence of sanctioning across primates. However, I don't understand the point about migration having an effect (but I would argue that fission-fusion certainly does if that is what they imply).

Third, *coordination payoffs*. I agree with this claim in that one CARTA talk notes that the total amount and frequency of practice determines skill learning progress (in relation to tool making). Fourth, *punishment of deviant behavior*: in COGS 184 we certainly have spoken on the topic of sanctioning so I agree that negative consequences do shape behavior. However, the authors need to clarify what they mean by punishment because this could include a damaged social relationship, being ostracized, losing out on food, etc. One of the key elements of deviant behavior is deception and to avoid punishment, they must get better and better at it. The authors fail to note this.

Fifth, *strong prestige bias or one to one transmission*. I have no idea what they're trying to claim. Are they stating that more privileged people learn more than others? Because I don't buy that. One CARTA talk described that larger and more interconnected societies have more advanced toolkits. The worst person of a more connected society does better (in tool making) than the *best* in a small community. Therefore, I think skill is less about privilege but the size and interconnected nature of the community they are in.

Sixth, *symbolic markers*: selection favors attentiveness towards whom to imitate. I also don't fully buy into this. While it would be better to imitate those who would help you incur skills that help your fitness, this seems optimistic of humans. Non-human primates freely imitate (actually *emulate*) those they choose. However, modern humans have teachers or members of the group that direct their attention and focus their imitation on specific behaviors. Lastly, *institutional complexity and reduced borrowing*: I agree in that knowledge must be distributed (this is why we have an epistemic engine) but what is this institution? How are rules set? Do non-human primates also have an institution then? Because non-human primates have very, very different social-political structures depending on the species.

The second claim of the authors is about how CGS dos not evolve in a Darwinian fashion. Some claim that culture ins proximate and cannot play an active role. I disagree. Culture can affect your genes through epigenetic and it can choose which genes get passed on by dictating who gets to mate and who gets to die; culture controls the gene pool in a number of ways. The authors even make claims that the ways in which we can evolve on a group level in through "tribal social instincts". What? I know the claim that we implicitly prefer helpers over hinderers which selects for "good tribal instincts" to help each other.

However, in COGS 144, we learned that this puppet study is quite flawed and newer iterations have shown that some children actually prefer hinderers (not to mention that the initial iterations were only done on Western cultures). I'd suggest that the authors instead focus on allo-parenting and we may have developed certain social instincts to ensure that our non-kin did care for us well.

I won't even go into the idea that docile individuals would develop more sophisticated norms because it's ludicrous. However, I will address the idea that we favor genes for higher intelligence. Human societies are structured so that we can have a long period of development. We invest much into the care of one another and

we have evidence that hominids cared for those not in the "optimal" condition (take Old Man La Chapelle-aux-Saints). Therefore, I don't think we can claim that CGS selects for the more "intelligent" individuals but likely those who support one another.

Third, the authors describe the idea that reciprocity and inclusive fitness are enough to explain cooperation in non-human primates. I agree with the authors in thinking that we need something beyond these evolutionary processes and that the cultural aspect of CGS would be essential. CGS sets up in-group and out-group distinctions. Being a part of an in-group has been shown to already set up pillars of cohesion and cooperation in groups. The authors really should have explored how fission-fusion societies set up these initial ideas of "my group", sub-groups, other groups, etc. rather than focusing so much on state-level societies.

Fourth, there is an argument that different environments of the Holocene affected our cognition and innovation. I agree that the environment has an effect on our cognition. But I disagree with nearly all claims made by these researchers. CARTA mentioned that it's not about *different* environments but that tech let us exploit the environment, create a surplus of food for better sharing, which enabled more expensive, lengthly development (yay cognition), which in turn allows for better tech innovations. There's a clear feedback loop with the environment. But, we also see similar tool kits develop across the world so I don't think specific environments lead to specific abilities.

They also mention that chumps focus on goal-related behaviors like retrieving food but that's probably because they don't have tools which freed up our time, enabling us to do teaching, and develop "complex traits". The authors also make claims about how other primates do no acquire complex traits but seem to forget the dolphins teach each other complex tricks and perform them so I think it's because of the setup of a society rather than some innate human superiority.

Finally, with the *trigger hypothesis*, I'm also in disagreement. Johnson (and even Will) have pointed out that we cannot assume that the emergence of some traits happened serially; it's likely that many of these co-evolved. The authors go on to discuss how language is needed for sophisticated norms (must come before) but is this really true? Where's the evidence? What do we mean by sophisticated norms? And what about language is characteristic about providing this info? They mention that language works well because it depends on trust but we've already set up a

society to trust because we're interdependent AND epistemic statuses depend on assuming we can trust the knowledge of others.

I wish I could praise these authors but I can't. I guess they did a good job of pulling together a lot of info but I would fight them or ask clarification on nearly each claim they made.

In "Clarifying the Time Frame and Units of Selection in the Cultural Group Selection Hypothesis," Whiten and Erdal note that even though the article points out how long-lived CGS may have been, they do not address earlier period of hunting and gathering. That era would have been essential to study as we saw the emergence of novel sharing and cooperation (e.g. hunting, gathering, child care). Whiten and Erdal emphasize that hunter-gatherer (or generally fission-fusion) societies see an interdependence among individuals which means that the actions and contributions of each individual play a huge role in the overall fitness of the group.

In "Multi-Level Selection, Social Signaling, and the Evolution of Human Suffering Gestures: The Example of Pain Behaviors," Vigil and Kruger use pain as an example of group-level behaviors and outcomes. Pain, while experienced internally, can be expressed externally in a visceral and salient form. Our ability to detect when someone is in pain (and their ability to display it) could serve as a warning system to help the fitness of other individuals. When an individual suffers, others will (or are expected to) care for the. Caring for others, or feeling empathy, may have enabled group cohesion to grow stronger. Vigil and Kruger goes as far as to say that partners may be selected by their emotional support and how they address those in pain.