Review of Mark Pagel, Wired for Culture:

Origin of the Human Social Mind

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When one thinks of theories of culture, the humanities come to mind, as well as disciplines like sociology and anthropology. Mark Pagel is a population biologist who has developed new and creative directions in estimating phylogenetic trees from highly spotty data, using phylogenetic trees using Bayesian Markov process and related methods. What is he doing writing a book on human culture? Well, it turns out that biologists have developed much better models of cultural evolution than sociologists or anthropologists, and it is a crime and a scandal that the latter disciplines do not simply take over whole cloth the body of research created by evolutionary population biologists and animal behavior theorists.

The basis for the biological approach to culture is to note that culture is information passed from one generation to the next, just as genes are information (coded in DNA strands in our chromosomes) that do the same thing. Indeed, both genes and culture evolve by very similar mechanisms: replication, mutation, and selection. This is by far the most important point to keep in mind in trying to understand human culture and its contribution to the life of our species. Pagel does a very clear, elegant, and creative job in conveying this message even to readers who have never though more about biology than that involves dissecting frogs. Whenever a biological topic comes up, Pagel takes the time to explain the issue clearly and completely non-pedantically, often referring to analogies from music and the movies to make his points clear.

There is a second absolutely central connection between genes and culture: they mutually interact in the two million year history of the emergence of proto-humans and their transformation into Homo sapiens. The connection is called gene-culture coevolution. This term expresses the fact that once culture becomes an important part of our ancestors' lives (I will call these ancestors hominids), through both tool-making and other forms of technology, as well as through initiating new forms of social interaction, culture determines who gets to reproduce and who does not. Thus in the long run culture produces genes and genes go on to produce new cultural forms. Moreover, both the genes and the culture are constantly subject to evolutionary pressure: a cultural form persists in the long run, just as a gene persists in the long run, only if it enhances the fitness of the individuals in which it resides. Indeed, the very title of the book "Wired for Culture" is a poetic way to express this deep insight.

Curiously, perhaps because it involves a lot of fairly heavy theorizing, Pagel does not present the models that validate gene-culture coevolution, and the biologists who pioneered this approach, including E. O. Wilson, Luca Cavalli-Sforza, Marcus Feldmean, Peter Richerson, Robert Boyd and others, are barely mentioned in the book, and when they are mentioned, it is for other things. I wish Pagel would turn his immense expository and literary talent to presenting this body of research to the general public. It is immensely exciting. Pagel suffices with nicely stated but rather cryptic statements like "To make our societies work, we had to acquire the social and psychological systems that would somehow overcome and tame selfish instincts born of millions of years of evolution by natural selection to cheat, exploit, dupe, and even murder one's rivals. The solution was simple in principle but profound in its effects: natural selection found ways that made it possible for individuals to align their interests with those of their group." (p, 72) Pagel summarizes these human propensities by saying that "Humans seem to be equipped with emotions that encourage us to treat others in our societies as if they were 'honorary relatives.'" (p. 81) He calls the underlying cultural forces "cultural altruism."

I heartily recommend this book to novice and seasoned professional alike---the former because he or she will learn much about our species, and the latter because they will learn how to present difficult material in an exciting and literary way without dumbing down the message. However, I do have a major bone to pick with Pagel: he apparently learned all of his cultural biology in the period before gene-culture coevolution in the 1980's, at the hands of the great innovators Richard Dawkins, William Hamilton, Richard Alexander, and Robert Trivers. These were the leading lights in the field when I came to the subject in 1990, but I quickly saw the limitations of their basic models, and got on the Feldman-Boyd-Cavalli-Sforza-Richerson bandwagon, and never got off. So perhaps the reader will indulge me while I express why the old theory has limitations and why our new approach is an important revision of the received wisdom.

Pagel summarizes his argument toward the end of the book as follows: "The fundamental feature of human societies is our cooperation...This cooperation depends upon meeting people repeatedly and on knowing others' reputations." (p. 364) This is of course the reciprocal altruism theory that Robert Trivers developed in a famous 1971 article. And of course, it is quite true that repeated interaction and reputation formation are very important parts of human social behavior and account for a lot of our success as cooperators. Interestingly, Trivers thought that this mechanism would apply to other animals as well (consider the famous cases of mutual grooming in simians and blood sharing of vampire bats), but it turns out that this is not the case. There are almost no confirmed case of cooperation in a non-human species based on reputation and reciprocal helping of the tit-for-tat variety. So it is at least possible that this account fully for human cooperation. But it does not.

According to the reputation theory of cooperation, people acquire a good reputation by exhibiting concerned citizenship, and others prefer to make alliances and transact with "good citizens." Why this preference for civic-minded transactors? The explanation is that such individuals are likely to be following a long-term strategy of behaving honestly, loyally, and in a trustworthy manner, whether in public or private life. Therefore self-regarding individuals will behave as good citizens, at least when others are looking.

The problem with the reputation theory is that humans behave morally even when no one is watching. If people only cared about reputations, they would rob, rape, and steal as long as they were assured that no one is looking. Moreover, we would teach our kids to do exactly this! But few parents counsel their children in such manner. Probably none of us has ever heard our parents advise us "Now, Johnny, if you see an old lady in an alley or an otherwise empty appartment, knock her out and take her handbag." Moreover, if Pagel were right, we could never ask directions from strangers. Perhaps more importantly, all of modern democracy depends on people acting prosocially even when this is costly. In large democratic elections, the reputation-minded individual will not vote because the costs of voting are positive and significant, but the probability that one vote will alter the outcome of the election is vanishingly small. Nor is there a reputation effect. In fact, almost no one cares whether one's friends, business partners, or tradespeople vote. When one asks the bank for a loan, or when one applies for a job, one is not asked whether one votes. And if asked, one could simply lie and say that one voted when in fact one did not, because individual voter behavior is not public information. An individual with a morbid fear of getting caught lying (by it being documented, for instance, that he did not appear at the polling place on election day), could go to the voting booth, but would have no reason to fill out the voting form at all, or in any particular way, as it is costly to spend one's time putting little marks on a sheet of paper, and the voter's choices cannot be traced to the voter himself in secret ballot elections. Thus the personal gain from voting is also vanishingly small. For similar reasons, if one chooses to vote, there is no plausible reason to vote on the basis of the impact of the outcome of the election on one's fitness or material circumstances. It follows also that the average voter will not bother to form opinions on political issues, because these opinions cannot affect the outcome of elections. Yet people do vote, and many do expend time and energy in forming political opinions. This behavior does not conform to the reputation model, because not being political does tarnish one's reputation. Some people are political and others are not. It is a short step from the irrefutable logic of reputation-based political behavior that selfish individuals who only sacrifice when it can help their reputation will not participate in the sort of collective actions that are responsible for the growth in the world of representative and democratic governance, the respect for civil liberties, the rights of minorities and women in public life, and the like.

Yet we have such political institutions and they are the result to a significant degree of such collective actions. This behavior also does not conform to the reputation model, unless you want to believe that all the heroes who have fought and sacrificed for our freedom and dignity were just enhancing their reputations. Personally, I think the idea is absurd.

Doubtless because Pagel believes humans are inherently selfish and cooperate only because it worthwhile having a reputation he also subscribes towards the end of the book to the so-called Machiavelian hypothesis, which purports to explain the large, highly costly brains that we have by the fact that smart people can outwit dumb people, so there was an "arms race" among early hominids where the weapon was the conniving, scheming social brain. Pagel is very insightful and persuasive in claiming that humans are excellent deceivers, excellent sleuths at uncovering deception, and smart people can do it better than stupid people. However, this is a crazy explanation of human intelligence is one posits, and Pagel does, that humans evolved because they are first-rate cooperators. If the main purpose of intelligent were to dupe your neighbor and avoid being duped by him, hominid groups and species with small brains would have beat out groups and species with large brains because the small-brained hominid would have dramatically lower costs of brain mainenance. Note that it is the large human brain that required humans to be born way before they are mature (neoteny), which caused a reorganization of the female pelvis and led to very long periods of infant dependence. The notion that you can explain this in terms of Machiavellianism is just bizarre.

The alternative to the reputation theory is that humans evolved substantive morality in the course of our evolution as a species, and developed a cultural system that was extremely inhospitable to sociopaths who are nice only when others are looking, and are depraved maniacs otherwise. Of course, sociopaths are still among us, but they are a small minority. For two recent contributions to this line of research, see my book with Samuel Bowles, A Cooperative Species (Princeton 2011) and Christopher Boehm's forthcoming book Moral Origins (Basic Books 2012), as well as the various writings of our coauthors Robert Boyd and Peter Richerson.

Pagel's venture into paleoanthropology is one of the strong points of this book. If you know nothing about it or think the subject is boring (find a tooth and conjure up a whole new species...) you will learn much form Pagel. However, I want to add a few general points, especially concerning the role of tools and weapons in our evolution. Our primate ancestors evolved a complex sociopolitical order based on a social dominance hierarchy in multi-male/multi-female groups. In these societies, the alpha male had no positive role in contributing to the group, but rather was a despot relying on physical strength and careful coalition-building to corner the largest possible part of the group's efforts, both in nourishment and reproduction. The emergence of bipedalism in the hominid line, together with environmental developments that made a diet of megafauna fitness enhancing under conditions rapid climate change, created a niche for hominids in which there was a high return to coordinated, cooperative, and competitive scavenging. This in turn led to the use of stones and spears as lethal weapons, and thence to the reorganization of the upper torso, shoulders, arms and hands to maximize the effectiveness of these weapons, as well as the growth of new neural circuitry allowing the rapid sequencing of bodily movements required for accurate weapon deployment.

The availability of lethal weapons in early hominid society undermined the standard social dominance hierarchy, thus threatening social dissolution, as the hominid niche required sophisticated coordination of hunting activities and procedures for the peaceful sharing of the meat. Two successful sociopolitical structures arose to prevent this dissolution and to enhance the flexibility and efficiency of social cooperation in hominids. The first was the reverse dominance hierarchy, which replaced pure power and Machiavellian coalition formation with political system in which success depended on ability to persuade and motivate. The second was cooperative mothering, which provided a strong impetus towards prosocial psychological propensities. This system persisted until cultural changes in the Holocene fostered new patterns of economic activity, in which it became possible again, as did our primate ancestors, to sustain a social dominance hierarchy, this time in the form of a predatory state.

This scenario has important implications for political theory and social policy, for it suggests that humans are predisposed to seek dominance when this is and not excessively costly, but also is predisposed to form coalitions to depose and dispose of pretenders to power. Moreover, humans are much more capable of forming powerful and sustainable coalitions than other primates, due to our enhanced cooperative psychological propensities. This, of course, is a defense of liberal democracy, but it is based not on political philosophy, but rather on the facts of our evolution.

I am not asserting the inevitable triumph of liberal democratic over despotic politics. The open society will always be threatened by the forces of despotism, and a technology could easily arise that irremediably places democracy on the defensive. The future of politics in our species could well be something akin to George Orwell's 1984, or Aldous Huxley's Brave New World.