



James Fowler: Genopolitics and social networks

We interviewed [James Fowler](#), an associate professor in the Political Science Department at the University of California. He's one of the proponents of the "emerging science of human nature" that is trying to lead the humanities toward empirical science, combining the study of social networks, behavioral economics, evolutionary game theory and even "genopolitics", along with Christopher Dawes: the study of the genetic basis of political behavior. Part of his academic research work is available for free on his website, along with references in the American media, from the [New York Times](#) to The [Washington Post](#) or [Nature](#). Fowler is currently working on a book about "everyday social networks" (like Facebook and MySpace) with Nicholas Christakis.

What about "political animals"? Aristotle coined the expression, but since then the "animal" part of the story was almost entirely forgotten by political science. From Durkheim to contemporary sociology, much of the scientific literature has focused on environmental and educational factors. A well-known marxist thesis stated, for instance, that "it is not the consciousness of men that determines their existence, but, on the contrary, their social existence determines their consciousness". Those who sought biological or naturalist explanations for social phenomena were even labeled "vulgar materialists" by hard marxists... *On the contrary*, now it seems clearer that the evolved properties of the human mind (=the physical brain) significantly constrain our "social existence". Not only ideologies, but also cooperative behavior, altruism, or attitudes toward risk are -at least in part- "natural" and hereditary.

Fowler and his colleagues don't portray a "fatalistic" or "deterministic" picture of human nature -as if it were entirely defined by our genetic constituency- but rather a more complex and pluralistic science-based one. We are neither "blank slates" nor "voting robots" because our political behavior is shaped by both genes and cultural expression.

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1. In a recent paper on the [heritability of partisan attachment](#) you conclude that genes impact the strength toward political behavior (the "strength component"), but not its direction ("the direction or partisan component"). However, other studies (such as [Alford, Fuk and Hibbing, 2005](#)) suggest that genes also have a significant impact upon ideological orientation. Of course we are not "voting robots", but from a biopolitical and "genopolitical" standpoint, to what extent are people's political attitudes "determined" by their genes?

My collaborator [Chris Dawes](#) and I try never to use the word "determined" -- we prefer to discuss these effects as "tendencies". For example, people who play basketball tend to be tall, but there are some successful short players as well. So genes that tend to make you taller do not seal your basketball fate! Similarly, if you have a gene variant that makes you

more likely to be liberal, it does not mean that you absolutely will be liberal.

Another extremely important thing to realize is that these initial studies looking for direct gene association are merely attempting to figure out where to shine the light. Which genes should we study further? This is because nearly all genes influence outcomes via their interaction with the environment. Someone with a "tall" gene who does not eat right will not become tall. Someone who has a gene variant making them more likely to vote will behave no differently than someone with a different variant in a country where there are no elections! So the environment is still as critical as it was before we created the field of genopolitics.

Regarding the contrast between ideology and partisanship, it is important to remember that in the United States we tend to have very ideologically diverse parties. Even though polarization has increased over the last 20 years, it is possible to be a liberal Republican or a conservative Democrat. One thing that research prior to ours showed was that children tend to adopt the party of their parents, even if they disagree on some core issues. So what our research confirms is that the environment can be very important for deciding which party to join, even if genes have a significant effect on our core issue beliefs.

2. Some people fear that biopolitics and what you called "the emerging science of human nature" are bringing back "social darwinism" to science and sociopolitical debates. What do you have to say about it?

Nothing could be further from the truth. Social darwinism implies that the most socially fit person will (and maybe ought) to survive. But the picture we are getting now is not one of a one-size-fits-all behavioral strategy that is always best. Instead, it appears that genes can help explain why we exhibit strong variation in our tendency to be liberal or conservative and in our tendency to join political activities or not. Given that our initial studies are finding such strong associations, I think this means that we evolved a diverse set of strategies to cope with different environments, including our own social environment. Liberals might help us more when we need to innovate, but conservatives might help us more when we are under threat. Joiners might help us more when we need to cooperate to achieve something, but loners might help us more when that cooperating makes us worse off. So the new research is suggesting that diversity may be built-in at a deep level, and I personally would be loathe to tinker with that. Moreover, I think history has taught us what happens when we do tinker -- it doesn't work! If it is true that we are in a frequency-dependent equilibrium that underlies the variation in political behavior that we see in the world, then attempts to make everyone the same type are doomed to fail. Knowing that will hopefully keep people from trying.

3. One of the key issues in evolutionary biology, and now in biopolitical science, is to understand the transcendental shift from the small-scale societies of the past to the present large-scale societies in a globalized world, from limited altruism to strong altruism, etc. From an evolutionary perspective, sociobiologists and cognitive psychologists argue that natural religion may have played a fundamental role in this transition. Do you agree with them?

I don't think evolution cares about arbitrary groups like Democrats or Republicans or Catholics and Protestants, but it probably does have an impact on the decision to join one of these groups. In early human society, a key innovation was the capacity to hunt large game, which requires cooperation. But with cooperation also comes the strategy to free ride on the efforts of others, so cooperation is not necessarily the most fit strategy. At the same time, some people opted not to join these groups, instead choosing to forego both the costs

and potential benefits of cooperation. It is the dance between these different behavioral types that makes us human.

Along these lines, I think that "natural religion" was probably a successful adaptation that made it easier to get people to cooperate with each other, but there is also a frequency-dependent selection story that makes being non-religious successful because of the presence of free-riders in large groups. So variation in religious fervor is probably co-dependent with both our tendency to join groups and our tendency to help others.

4. In an article published in [Science](#), you made the case for a new political science that favors the conversation between biologists and political scientists. Not surprisingly, even sociologists are now aware of the fact that genetics matters, that probably there is a "human nature" after all. For instance, the American Journal of Sociology published in November a supplement entitled "[Exploring genetics and social structure](#)". Are we really witnessing the decline and fall of the so-called "Standard Social Science Model"?

And I just read with great interest that special issue in the American Journal of Sociology. Across disciplines, there seems to be a sea change in attitudes taking place, especially among younger social scientists who have not spent their whole careers justifying the environment-only model. In economics the movement is against homo economicus, a sparse model of humankind that assumes 1) we are completely selfish and 2) fully optimizing in our behavior. Behavioral economists have now shown thousands of times that one or both of these assumptions are wrong, and mainstream economists are starting to show the important implications of deviations from that model. This does not mean we are all pure altruists, but there is enough altruism in us that it is very difficult to explain some important group behaviors like voting and political participation without it.

5. At the outset of the latest US presidential campaign, several neuroscientists sponsored by private companies claimed that brain scans have shown how brains react to pictures of candidates, leading them to draw conclusions about patterns of activation in certain regions of the brain and the phenomenological state (e.g. anxiety, disgust...) A few days later, in reaction to these claims, 17 neuroscientists stated, in a signed letter, that the conclusions originally reported were premature. Although it may still be premature to reach a conclusion, do you think that some day we will be able to use neuroimaging to detect specific cognitive styles associated with political ideologies and use this evidence and technology for the good of society?

The controversy surrounding that incident had to do with process more than the substance of the claims. The results were published in an op-ed in the New York Times prior to peer review. The reaction to the results gives a pretty good picture of whether or not they would have been able to get those results published in a journal! Probably not. The incident is unfortunate in a way, because the public may have been given a premature sense that we know more than we do from neuroimaging studies....However, I do think we are heading towards a better understanding of differences in cognition that are associated with liberals and conservatives. My team has work under review right now that shows Democrats and Republicans use different parts of their brains when thinking about risk, and we will also be studying differences between voters and nonvoters, but these will be small steps in what is likely to be a long walk towards understanding the neural basis of political behavior.

6. A question regarding current events. These days we are witnessing violent scenes provoked by groups of youths, supposedly protesting the murder of a Greek youngster. These outbursts surface from time to time in our cities and their

motives are usually quite disparate. One is tempted to ask whether there exists an innate need to provoke disturbances, in search of a cause or justification *a posteriori*. Or, at other times, as comically shown in cases such as binge social drinking. Are we witnessing phenomena that do not so much require an ideological explanation, but rather demand greater understanding of the mechanisms of human aggressiveness?

That's a good question -- I tend not to think of those events as ideologically motivated, but I do think that we often use the same biophysiological machinery to react to social and political events, and this has consequences for our social behavior. Nicholas Christakis and I have been studying these questions one level up, trying to see how behavior can spread from person to person to person through social networks. So far, we have studied behaviors like obesity, smoking, and drinking, and emotions like happiness, loneliness, and depression, and the main message from these studies is that there are very consistent patterns in the way things spread. For example, we find that one person's behavior and emotions tends to spread about three degrees of separation (to our friends' friends' friends) but no further. So in these rare cases where an incident like the murder of a Greek youngster spurs thousands of people to riot, I think that the source reactions were probably highly synchronized and the "epidemic" of riots is multicentric. I doubt we will find that aggression spreads differently than other human emotions and behavior, but we won't know until we actually take a look.

7. According to the [NY Times coverage](#) of your study of happiness: "Another surprising finding was that a joyful coworker did not lift the spirits of colleagues, unless they were friends. Professor Fowler believes inherent competition at work might cancel out a happy colleague's positive vibes". Isn't there also an element of inherent competition (cultural, ideological, religious, economic, etc.) in large social groups? Does this not cancel out the contagiousness of happiness in "real world" social settings?

Let me first say that our coworker data in that study was very limited -- some of the companies are quite large and it is not clear whether or not people interacted with or even knew one another. However, that said, I do agree that there are elements of collaboration and competition in friend and family circles, just as there are at work. So I wouldn't be surprised to see some competitive feelings cancel out the collaborative ones. But especially in the U.S., the culture of work is competitive, and this is probably a very different frame of reference.

Lots of people donate blood, but when you offer to pay them, many of them refuse. Economists have shown that the supply of blood actually goes down with price -- in their jargon it is a "non-normal" good. The ostensible reason for the decline is that the moment you offer to pay someone for their services, they tend to feel differently about themselves. Donate blood, and you can be an altruist. Sell blood, and you are merely a trader.

I think we might find something similar in workplace vs. friend and family social networks. Since the frame of reference at work is to make money, we are less likely to engage in altruism or feel empathy for acquaintances than we would be in social situations where the frame of reference is to experience life. This might reduce the flow of contagious emotions in the workplace. But this is purely speculative -- we will need to do more research to figure out exactly what is going on.

8. Lluís Vives, a valencian humanist, said in the 16th century something like: "In order to truly be able to help the poor, we must be vigilant against freeloaders". Has the second-order (mutual aid) free-riding problem been solved? To quote you:

"what keeps these individuals from evolving deceptive behaviors that would reduce the reliability of information and allow them to benefit from aid without providing it?" Has your question been answered satisfactorily?

Lluís Vives, un humanista valenciano, dijo en el siglo 16 algo como: "Si verdaderamente estamos dispuestos a ayudar a los pobres, debemos ser vigilantes contra los aprovechados". ¿Se ha resuelto el problema de los aprovechados? Por citarle a usted: "lo que

I do not think it has -- the more recent models suggest that we are in a kind of arms race between cooperators, free riders, loners, and people who voluntarily punish free riders.

These models predict that society will tend to oscillate from one type being dominant to another, and that we will always have each of those heuristics around.

9. I must confess...I don't have an "smiling profile" in Facebook. Why should I change that? Can you tell us a little bit about your next book: Connected!?

In our Facebook smiles project, we found clustering of friends with smiling profile pictures that looked very similar to the clustering of happiness we studied in the [Framingham Heart Survey](#) social network. We also found that people at the center of both networks (with many friends and friends of friends) tend to be happier or smile more. But the main conclusion from both studies is that changing the behavior has no impact on the network. So if you become more central, you are more likely to be happy in the future, but if you become happy you will probably not change anything in your social context. So I would not advise you to change your picture.... But I do think that the more you connect yourself to your friends and the more you help them become happy, the more likely you will *want* to change your picture!

Our book will touch on these results, but it covers a lot of ground -- we tell lots of stories about how social networks affect everyday life -- health, emotions, sex, money, politics, you name it -- and we also look at where we came from in our distant evolutionary past and where we are headed in online social networks like Facebook and MySpace.

As Albert-László Barabási likes to say, the science of networks promises to unify many disciplines. However, I think it potentially will have its greatest impact in the social sciences because we will, after all, be learning about ourselves.

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