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**Atlantic**

# Can Your Genes Predict Whether You'll Be a Conservative or a Liberal?

Scientific research shows political partisanship transcends economics, environment, and upbringing.

AVI TUSCHMAN | OCT 24, 2013 | POLITICS

TEXT SIZE



Republicans from the cradle to the grave? (Brian Snyder/Reuters)

Among the first scientists to dig for the roots of political orientation were a

couple of pioneering psychologists in California named Jack and Jeanne Block. Back in 1969, the Blocks asked two challenging questions: How deep do our political leanings run? And how early in life do these leanings begin to form within each of us?

In search of answers, they devised a very unusual study, and they began it with kids who were still in nursery school. On the face of it, the premise of the study seemed absurd: What did nursery school kids know about Democrats or Republicans, or about the complicated, hot-button issues of the day? Still, the Blocks were serious researchers from the University of California at Berkeley, and they were determined to break new ground.

For their experiment, the two professors placed a group of 128 nursery-school children under the close observation of several teachers for a period of seven months. Then the Blocks had each of these caretakers measure the three-year-olds' personalities and social interactions, using a single standardized test. The same children then underwent this process again at age four, with a different set of teachers at a second nursery school. The Blocks tabulated the scores for each child and then locked the numbers away in a vault.

The test scores then sat in the vault for the next two decades, while the children from the study went their separate ways in life. They grew up, completed their educations, and turned into young adults. After 20 years had passed, the Blocks succeeded in tracking down 95 of their original 128 subjects, in the hope of measuring how liberal or conservative each of them had become. This time they asked the young adults, now age 24, to situate themselves on a five-point political spectrum. They also asked them to express their opinions on a number of highly partisan, hot-button issues. In particular, several of these questions measured their tolerance of inequality between the genders and between

different racial groups. In addition, they were asked to describe any political activism they might have participated in during the intervening years.

The results, [published in 2006](#) by the *Journal of Research in Personality*, were astonishing. In analyzing their data, the Blocks found a clear set of childhood personality traits that accurately predicted conservatism in adulthood. For instance, at the ages of three and four, the “conservative” preschoolers had been described as “uncomfortable with uncertainty,” as “rigidifying when experiencing duress,” and as “relatively over-controlled.” The girls were “quiet, neat, compliant, fearful and tearful, [and hoped] for help from the adults around.”

Likewise, the Blocks pinpointed another set of childhood traits that were associated with people who became liberals in their mid-twenties. The “liberal” children were more “autonomous, expressive, energetic, and relatively under-controlled.” Liberal girls had higher levels of “self-assertiveness, talkativeness, curiosity, [and] openness in expressing negative feelings.”

The Blocks’ experiment suggested that the roots of our political orientations emerge as early as the fourth year of life. But it raised further, essential questions: Would children from different regions or socioeconomic backgrounds diverge into similar personality groups? And how much deeper are the origins of these crucial personality traits?

When the Blocks’ findings are connected with other relevant studies in genetics, neuroscience, and anthropology, a composite image of our political nature begins to emerge. As this portrait of ourselves comes into focus, it shows what made some of those nursery-school children grow up to become liberals and some of them conservatives. It shows how deep the roots of our political proclivities extend, and why they have a similar influence on children in

America, the Middle East, and most everywhere else.

The reason for these crosscutting commonalities is that political orientations are natural dispositions that have been molded by evolutionary forces. Taken together, those deeply ingrained political orientations form what could be called “The Universal Political Animal.”

## The Deepest Origin

To begin with, exactly how far down do the roots of preschoolers’ political orientations extend? Do these roots somehow spring from the hard wiring they were born with? Perhaps W. S. Gilbert, the 19th-century English dramatist and poet, was onto something when he mused:

I often think it’s comical  
How nature always does contrive  
That every boy and every gal  
That’s born into this world alive  
Is either a little Liberal  
Or a little Conservative

In the early 1990s, the University of Minnesota’s Center for Twin and Family Research set out to test Gilbert’s humorously posited theory. Armed with a valuable list of 10,000 twin pairs and their family members, these scholars had a unique way to determine whether our genes—as opposed to our environment—exert any effect over our political convictions.

The Minnesotan scientists began their study with a left-right political-orientation test called the RWA Scale. They handed it out to more than 1,400 identical and fraternal twins. Each pair was raised in the same family. In a parallel study,

psychologist Thomas Bouchard gave the same test to a very special subset of siblings: 88 identical twins and 44 fraternal twins raised in completely different environments.

Comparing both types of twins is crucial: In the case of twins raised together, the shared environment (such as family dynamics, interactions between twins, and social perceptions) could influence the development of the twins' personalities. But for twins separated at birth, most of these confounding factors drop away; this makes it easier to chalk up their personality similarities to genetics.

Figure 1 shows the correlations between the left-right orientations of twins raised together and apart. The black bars correspond to identical twins, and the gray bars to fraternal twins. The first two clusters show the twins raised together. Identical twins (who share 100 percent of their genes) had more similar political orientations than fraternal twins (who share only 50 percent of their genes, like normal siblings).

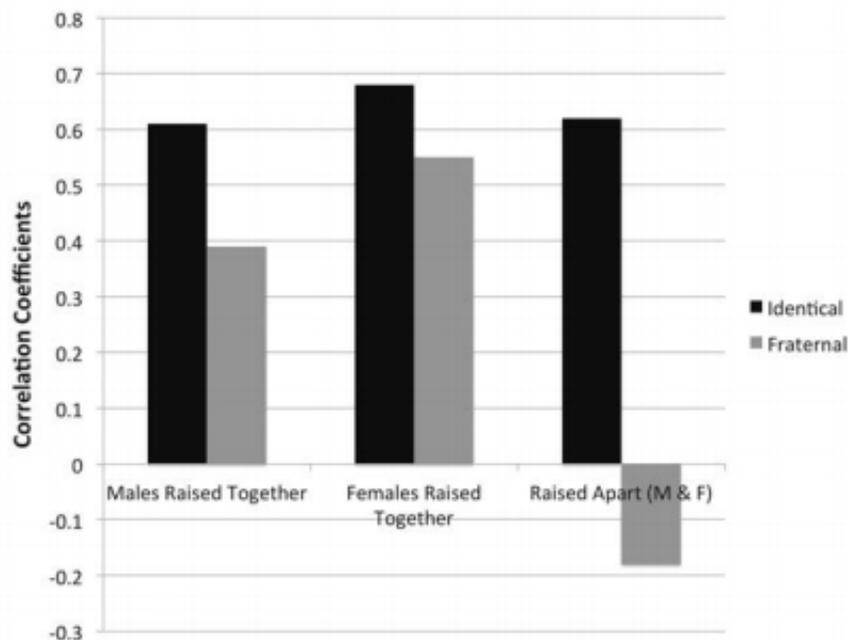


Figure 1. Correlations between the Political Orientations of Identical and Fraternal Twins, Raised Together and Apart.

The third cluster shows the amazing finding of Bouchard's survey: Identical twins reared apart had a strong correlation between their political orientations; but the scores of fraternal twins raised separately didn't correlate significantly. These results suggest that genetics plays a decisive role in determining political attitudes. In other words, identical twins are more likely than fraternal twins to agree on divisive issues, precisely because they're more closely related to one another.

To make this idea more concrete, let's consider a few specific hot-button issues: "capitalism," "segregation," and "immigration." These three words come from the 28 items on the Wilson-Patterson Conservatism Scale, which political scientist John Alford has researched at Rice University. These terms are guaranteed to set off the hidden triggers of political polarization. In the first case, conflicting attitudes toward "capitalism" are essentially what have divided Tea Partiers from Occupiers. Why? Because unfettered free markets reflect and create inequalities, to which people have varying levels of tolerance, depending on their political leanings. Words like "segregation" and "immigration," on the other hand, evoke opposing attitudes toward tribalism. People's attitudes toward inequality and tribalism constitute two of the three clusters of measurable personality traits that give rise to political orientations across space and time (the third cluster concerns differing perceptions of human nature).

In 2005, Alford asked 9,000 identical and fraternal twins to agree, disagree, or express their uncertainty toward these three words and 25 others like them. Positive responses to half of the 28 items raise one's conservatism score, and positive responses to the other half lower one's score. Negative reactions do the opposite.

Alford's twins considered these terms and wrote down their answers. Amazingly,

for every single item, the identical twins' political orientations correlated more strongly than they did for the fraternal twins. And in every case, the difference in strength was significant. Alford's experiment and others like it consistently show that 40 to 60 percent of the variance in our political attitudes comes from genetic differences between individuals. The remaining differences come from environmental factors.

Alford's findings suggest that the Blocks' nursery school children weren't inevitably predestined to become Republicans or Democrats. Nonetheless, their adult opinions on controversial issues ran even deeper than their childhood personality traits; a substantial proportion of their political dispositions stemmed from their genetic makeup.

Because our political attitudes have such deep roots, we don't normally undergo radical ideological shifts later in life. As people pass through their thirties, forties, fifties, and sixties, their identities stay quite stable; when measured from one decade to the next, the average individual's political orientation correlates very strongly with itself (at .80). Political attitudes do in fact change over time, but they change at predictable ages, and in foreseeable directions.

## **The Universality of Left and Right**

The left-right political spectrum is universal. It forms a natural, bell-shaped curve—like height, weight, and blood pressure, but unlike income distribution. Some countries have wider or narrower spectra. But how can we know whether the left-right orientations of groups as a whole compare with one another? In other words, are the Blocks' children as conservative or as liberal as their counterparts in Tunisia?

In psychology, there are a few standard personality traits that have been

measured across truly diverse human groups. They belong to a well-tested and widely accepted inventory called the “Big Five” personality dimensions. Specifically, these traits are Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (it’s easy to remember them because they spell out OCEAN). The first three dimensions (O, C, and—to a lesser degree—E) correlate fairly well with left-right voting. Therefore, these traits can serve as a universal yardstick for measuring the dispositions of disparate cultures, which would otherwise be difficult to compare in reference to specific political issues.

Psychologist Robert McCrae, with the help of his colleagues from numerous countries, has collected measures of these Big Five dimensions from nearly 28,000 people from 36 distinct cultures around the world. The participants represented the Indo-European linguistic family, as well as the Uralic (Finland, Hungary, Estonia, etc.), Dravidian (South India), Altaic (Turkic, Mongolic, etc.), Malayo-Polynesian, Sino-Tibetan, and Bantu (Sub-Saharan Africa) ethno-linguistic groups.

Variation in these Big Five personality traits was greatest within cultures. This finding makes intuitive sense, since a given population has a bell-shaped distribution of left-right political orientation. Moreover, Big Five dimensions such as Openness and Conscientiousness also form bell-shaped curves within a population.

In addition to the large variation within cultures, however, McCrae together with his colleague Jüri Allik also discovered small variations in personality traits between groups. Conscientiousness, which predicts conservative voting, moderately correlated with proximity to the equator. And Extraversion, which is associated with liberal voting, correlated strongly with greater distance away from the equator.

Temperature also mattered. Hotter climates correlated strongly with Conscientiousness. So even though a political spectrum runs through all populations, groups closer to the equator (and in hotter environments) have a more conservative average group disposition than groups living further away from the equator (and in cooler climates).

What happened when groups of very different genetic backgrounds live in the same environment? In this case, each group's average personality scores differed according to the origin of their ancestors. For example, the personality traits of white South Africans clustered closer to the Swiss, while black South Africans had personalities more similar to Zimbabweans. Likewise, groups that have traditionally lived in geographically adjacent territories have more similar average personalities than groups separated by large distances.

There is a chance that these facts could be explained by culture or by the direct effect of the environment. However, they suggest that populations around the world have personality distributions that are genetically adapted to their ancestral environments.

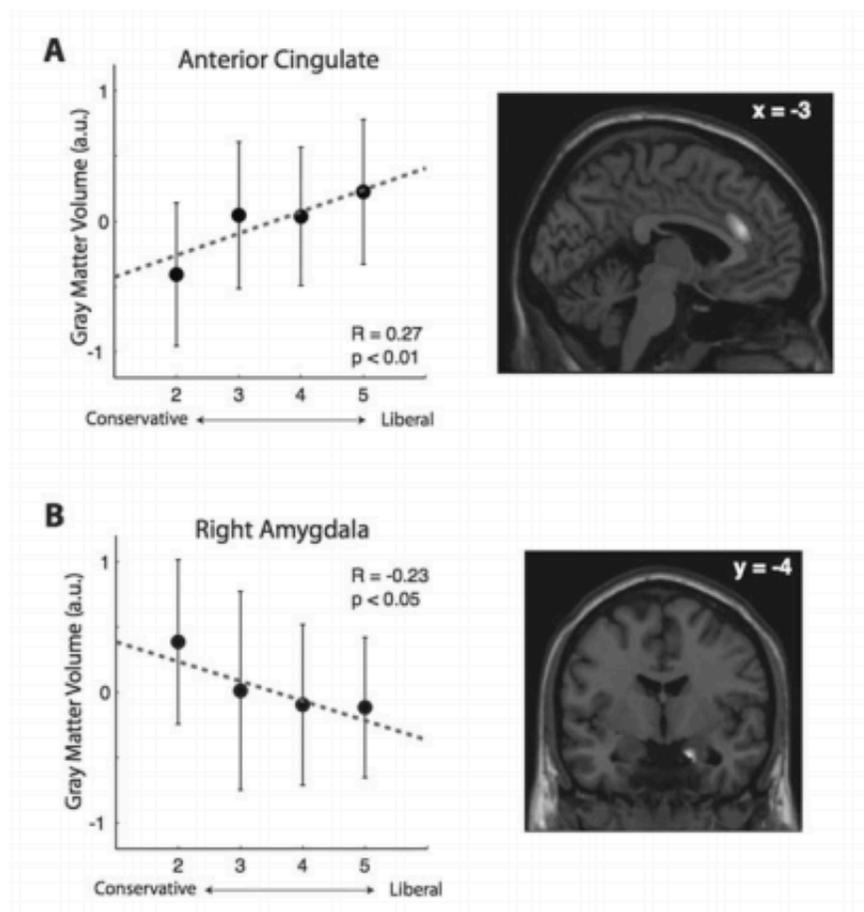
## **What an MRI Can Show**

A skeptic might question whether it's really possible to study something as fuzzy and subjective as personalities in a scientific way. Is there any concrete, physiological evidence that could explain the apparent differences in our political personalities?

On a BBC program in 2010, the Oscar-bound actor Colin Firth [laid down a tongue-in-cheek challenge](#). He asked scientists to find out what was "biologically wrong" with people who didn't agree with him on political matters. In response, researchers at University College London recruited 90 students and had each of

them confidentially place him or herself on a five-point political spectrum—just as the Blocks' 24-year-olds had done. Their choices could range from “very conservative” to “very liberal.” Then neuroscientist Geraint Rees used magnetic resonance imaging (MRIs) to scan each of their brains.

The results were stunning. From the MRIs, the scientists were able to accurately predict which of those individuals was more likely to be a liberal or a conservative. The more conservative students had a larger right amygdala; greater liberalism, on the other hand, was associated with a larger anterior cingulate. Figure 3 shows the correlations between political self-placement and the volume of these brain regions.



**Figure 3. Correlation between the Size of Two Brain Regions and Political Orientation.**

Someone who only had the measurements of these two brain regions would be able to correctly guess whether an individual was “conservative” or “very liberal” about 72 percent of the time (no student identified as “very conservative”). Aside from the right amygdala and the anterior cingulate, no other regions showed a significant and independent correlation with political orientation. An additional study later replicated the same findings.

The researchers noted that the amygdala has an emotion-processing function, which could explain why conservatives are more sensitive to threatening facial expressions than liberals are. This variation in the amygdala likely corresponds to differences in our perceptions of human nature, and these perceptions constitute one of the three personality clusters that underlie political orientation.

## **Finding Ourselves in the Big Picture**

All right, so perhaps there are physiological differences between liberals and conservatives. Does this mean it's possible to think about political conflict from a biological perspective? Surely politics is a uniquely human phenomenon that our species has developed long after we evolved fully modern “hardware,” right?

Not so, according to one of the world's most renowned primatologists. Academy of Sciences member Frans de Waal has written a book called *Chimpanzee Politics: Power and Sex among Apes*. His book describes the complex political life of our closest living relatives. De Waal recounts in detail how chimpanzees form alliances between small groups of high-status individuals. And he tells of their betrayals and realignments, and of the brutal murders of chimpanzees fighting for social status (and mating opportunities) within a troop.

In one case, political rivals went far beyond simply killing an alpha male named Luit; they even ripped off Luit's toes and fingernails, and pounded out his

testicles. Most chimp violence occurs between males, however females indirectly support male candidates for high positions by cheering and even intervening during conflicts.

In addition to rudimentary political factions within their troops, chimpanzees have personalities that are meaningfully similar to ours. Groups of human caretakers have separately scored large numbers of chimpanzees on the Big Five factors, and their independent ratings of each dimension coincide with each other for individual apes.

The importance of this discovery is not just that chimps have variable personalities; rather, it's that they are the only animals known to have traits analogous to all of our Big Five factors (in addition to a sixth factor of their own called Dominance). Biologists have found personality traits similar to Agreeableness, Neuroticism, and Extraversion across some twenty primates and other mammals.

But Openness is less common; for example, it's only partially present in the semi-social orangutan. And full Conscientiousness has only been found so far in humans and chimpanzees. Openness and Conscientiousness, as we've just learned, are the personality dimensions that best correlate with left-right voting in human beings.

Science is just beginning to piece together the great puzzle of political orientation. As we look at these and other findings that are emerging from fields like genetics, neuroscience, and primatology, one thing is already strikingly clear: Our political orientations are deeply ingrained natural dispositions, molded within each of us by powerful evolutionary forces. Indeed, these personality traits, and the left-right spectra that arise from them, are intimately connected to the natural history of our species.

*This post is adapted from* [Our Political Nature: The Evolutionary Origins of What Divides Us](#).

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## ABOUT THE AUTHOR

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