Your place on the conservative-liberal spectrum is largely decided by your biology. Whether you buy that might be too, say Jesse Graham and Sarah Estes

JEFFREY FLAKE is an easy man to stereotype: a Republican congressman from Arizona, a former Mormon missionary and a staunch conservative. But even for somebody with his political credentials, the bill he proposed in May was a brazen move. Flake called for a billion-dollar cut in the budget of the National Science Foundation (NSF), instantly turning him into a hated figure among US scientists and liberals, a personification of “the Republican war on science”.

Thankfully, Flake’s amendment failed. But he was back the next day with another one, this time proposing the NSF be banned from funding political science. This, the amendment said, would ensure that taxpayer dollars were not being wasted on a “meritless program”. This time the amendment passed, by 218 votes to 208. All but five of the votes in favour came from Republicans.

In an era of tight budgets, all spending decisions are de facto questions of political and moral priorities. But the venomous tone of Flake’s amendment suggests that something more was in play. What did the Republicans have against political science, a discipline that Flake himself holds a graduate degree in?

It turned out they were not gunning for the whole field but just a small, controversial, area – investigations into the biological roots of political ideology. It might be tempting to dismiss this as yet more evidence of the US right divorcing itself from scientific reality, as has happened in debates over evolution and climate change. But there’s more to it than that. This time, it’s personal.

Research on the biological roots of ideology first appeared in the 1950s as the world grappled with the consequences of communism and fascism. It is mainly remembered for defining the “authoritarian personality”, which tried to explain the appeal of totalitarianism. But the idea that more than a tiny fraction of the population had adopted any kind of ideology was widely disputed, and the field fell out of fashion.

The modern research agenda was heralded by an influential 2003 paper titled “Political conservatism as motivated social cognition”. Summarising findings from dozens of research projects, the paper concluded that some of the defining aspects of conservative ideology – resistance to change and justification of inequality – were motivated by deep-seated psychological needs to manage uncertainty and threat (Psychological Bulletin, vol 129, p 339).

The accumulated findings painted a deeply unflattering portrait of conservatives as rigid, fearful and intolerant, though the paper’s authors were careful to note that these motivations did “not mean that conservatism is pathological or that conservative beliefs are necessarily false”.

Unsurprisingly, right-wing politicians and pundits were not amused. Conservative columnist George Will responded acerbically: “Not necessarily. What a relief. But there is no comparable academic industry devoted to studying the psychological underpinnings of liberalism.” Will went on to claim that the findings were themselves psychologically motivated, nothing more than liberal academics trying to legitimise their own prejudices against their political opponents.

Despite such attack – or perhaps because of them – the research found a receptive audience in academia. Around that time, psychologists were paying increased attention to unconscious aspects of human thought and behaviour. For the first time, political ideologies and world views were being seen not so much as deliberative decisions but as products of innate temperament and needs.

That 2003 paper opened the floodgates. The past decade has seen a steady stream of findings, mostly in line with the portrait it painted, about the biological and psychological roots of political ideology, and mostly met by volleys of right-wing scorn.

One of us – Jesse Graham – is heavily involved in this field. So what are the findings, and do opponents of such research have a point?

As in the 1950s, one of the first areas to be studied was personality. Few people would think you could guess somebody’s politics
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Personality politics

The researchers concluded that these outward differences were a manifestation of inward traits – specifically openness and conscientiousness, two of the “big five” dimensions of personality that are known to have a strong genetic basis. Summarising these and other findings, they wrote: “In general, liberals are more open-minded, creative, curious, and novelty seeking, whereas conservatives are more orderly, conventional, and better organized” (Political Psychology, vol 29, p 807).

People of different ideologies also differ in their social preferences. As a rule, conservatives are more likely to prefer white people, straight people and high-status groups. Liberals are more comfortable than conservatives with members of ethnic and sexual minorities. This is borne out in self-reports and, crucially, in psychological tests that measure unconscious attitudes – that is, preferences that operate outside of awareness or control. It is important to note that liberals also unconsciously prefer high-status to low-status groups, just not as much as conservatives do.

Stable ideological differences have also been found in moral judgements, with liberals more morally offended by suffering and inequality and conservatives more morally offended by betrayals of the in-group, disrespect for authority and tradition, and signs of sexual or spiritual “impurity”. Again, these differences appear to have biological roots: they have been linked to anatomical differences in the size of various brain structures (Journal of Cognitive Neuroscience, vol 24, p 1657).

Differences have also been found at the level of cognition and perception. Several studies in the 2003 analysis showed that conservatives have a higher need for “cognitive closure” – wanting to turn uncertainties into certainties and ambiguity into clarity – while liberals had a higher need for cognition itself, enjoying deliberation and mental challenges. This finding was strengthened by a series of studies published this year, which showed that hindering subjects’ deliberation, by requiring them to do distractor tasks while filling out surveys, for example, made their opinions and attitudes more conservative.

Conservatives are more likely to report seeing the world as a dangerous place, and again biology may provide an explanation. When faces with ambiguous expressions are flashed onto a screen, conservatives are more likely than liberals to perceive them as angry or threatening rather than sad or neutral. When exposed to threatening images or sudden noises, conservatives react more strongly, showing greater levels of the “eye-blink startle” response and skin conductance.

One study looked at the reflexive effects of seeing pictures of either puppies or garbage. Participants of all political persuasions showed a “bad is stronger than good” effect – negative pictures had more of an unconscious impact than positive ones – but conservatives showed this effect the most. Similarly, conservatives are more sensitive than liberals to disgust cues, and this sensitivity has been shown to predict unconscious attitudes toward gay men.

It goes on. Differences are also seen in measurements of self-control. In one study, participants performed a task that required them to repeatedly press a key when one character was shown to them, but suppress the impulse when another character was shown at the same time. Liberals were better able to control their impulses and showed more activity in the anterior cingulate cortex, a brain area associated with cognitive control and self-regulation. Liberal participants turn out to have more grey matter in this region, presumably indicating that they use it more, while conservatives have more grey matter in the right amygdala, an area associated with threat response and intense emotions.

Most controversially, political scientists have begun to search for genetic roots of ideology. For 25 years, we have known about the high heritability of political attitudes, based on studies of twins. Identical twins are much more likely to share political views than fraternal twins, suggesting it is not only their shared environment that is at work but also their shared genes.

More recently, geneticists have begun looking at particular genes that may contribute to ideology. Nobody is suggesting
Politics is traditionally seen as being based on deliberation and persuasion, not biological factors that are largely outside awareness or control.

that there are genes “for” liberalism or conservatism, but one gene of interest is the 7R variant of the DRD4 dopamine receptor gene, which has been associated with novelty-seeking behaviour and liberal politics.

Taken together, there is a substantial body of data suggesting that conservatives and liberals really are different tribes, divided not by opinions so much as by temperament and even basic biology. Not surprisingly, the idea has attracted a lot of criticism.

One complaint is that the research appears to diminish the role of reason in political debate. Politics is traditionally seen as being based on deliberation and persuasion. And yet the growing body of research suggests that our political views are based on biological and temperamental factors largely outside of awareness or control. There seems to be a good deal of truth in that – but politics still needs to appeal to reason.

Many have also criticised the research for reducing the complexity of political opinion to a binary distinction between liberals and conservatives. The real world is more complex than that, with views arrayed on a spectrum and numerous strands of opinion within the broad churches of left and right.

That is a valid criticism, and political science is starting to explore these nuances. For example, a recent large-scale study of libertarians, who tend to be economically conservative but socially liberal, showed that their psychological and moral profile was quite distinct from that of liberals and conservatives, not simply a blending of the two (PLOS ONE, vol 7, p e42366).

The grittiest controversy, however, is over agendas. The findings are usually unflattering to conservatives, portraying them as fearful, intolerant, dogmatic and irrational. So do the conservative politicians and pundits have a point? Is it just a bunch of liberals trying to make conservatives look bad?

Returning to Will’s response to the 2003 analysis, it seems he has a point about the lack of scientific attention paid to liberal ideology relative to conservative ideology: the research focus is on conservatives much more often than it is on liberals. But there is a reason for this. In many of the studies reporting ideological differences, liberals show the same biases and reactions as conservatives – disgust sensitivity, for example – just not as strongly. It seems that most of the studies have concentrated on conservatives simply because conservatives are typically a more powerful demonstration of whatever phenomena are being investigated.

Even so, there remains cause for concern. Some in the field have criticised the language used to report the findings. Conservative tendencies are often described as needs or deficits – “need” for closure, certainty, order, and so on – whereas liberal tendencies are described as positive attributes. Openness to experience, for example, is seldom referred to as a “need for novelty”.

Liberal conspiracy?

Will was also correct in his assumption that most of the researchers conducting these studies are themselves liberal. In a speech to the Society for Personality and Social Psychologists (SPSP) in 2011, Jonathan Haidt of New York University demonstrated the field’s lack of political diversity by asking all the conservatives present to identify themselves. In an audience of more than a thousand people, only three raised their hands.

Yoel Inbar and Joris Lammers of Tilburg University in the Netherlands investigated further, anonymously asking 800 SPSP members about their political beliefs. They found that only 6 per cent self-identified as conservative overall and only 20 per cent identified themselves as conservative on economics or foreign policy (Perspectives on Psychological Science, vol 7, p 496).

Given these (admittedly still low) numbers, Inbar and Lammers wondered why so few conservatives raised their hands at Haidt’s talk. So they also asked about perceptions of hostility within psychology. Sure enough, conservatives were the most likely to say they felt that the field was hostile towards them. The authors also asked how willing the respondents would be to discriminate against a conservative colleague in peer review, grant decisions, symposium invitations or hiring. A shockingly high percentage said that they would; for instance, nearly 40 per cent said they would be “somewhat” to “very” willing to discriminate against a conservative job applicant. And this from a field that has led the study of discrimination against race, gender and sexual orientation.

This doesn’t mean that the body of consistent findings is wrong or fraudulent, though. In most cases the experimenters were blind to the ideology of the participants until after they left the lab, so there was little chance for researcher bias to affect the answers. Most importantly, the ideological differences have been replicated across dozens of measures and researchers, and the findings at the different levels of personality, cognition, perception and physiology all cohere relatively well. You don’t stop the pursuit of knowledge because the linguistic framing needs tweaking.

While the passage of Flake’s amendment – which is currently on the back-burner, awaiting a budget review in March – may have provoked shock, outrage, and more than a little panic among academics, it should serve as a useful reminder for them as well. Academics want to avoid being seen as a brainy but insular elite with little relevance outside the ivory tower, and they especially want to avoid being seen as pursuing an ideological crusade. The legislative process – like scientific peer review – is intended as part of a system of checks and balances, ideally serving as a bulwark against groupthink and other in-group tendencies.

Even so, academics must defend academic freedom. Flake’s initiative to strip an entire branch of science of its funding is an attempt to politicise the acquisition of essential knowledge about science, technology and ourselves. The scientific study of political differences could probably benefit from increased political diversity among the researchers, but this does not invalidate what has already been found. You can’t correct the lack of political diversity in science by not funding the science of political diversity.

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