



The Politics of Science: Political Values and the Production, Communication, and Reception of Scientific Knowledge

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Politics often dominate public discussions of scientific topics. The most obvious example of this is the debate over climate change, but politics and science intermingle in debates over evolution, stem cell research, the use of various vaccines, fracking, nuclear power, and other topics. In many cases – again, with climate change being the most prominent example – scientific consensus exists that could ostensibly sway public opinion and policymaking, but the existence of such consensus seems to have little to do with public sentiment or political action. Why the disagreements and the controversy?

Americans are living through a time of great political polarization, and we are keenly interested in what science portends for our collective future, so we owe it to ourselves to learn as much as we can about the interplay of politics and science. *This volume of the ANNALS contributes new research to a growing body of work that aims to understand how scientific discovery itself can be politicized, and how individuals' political views can influence the way they communicate and interpret scientific findings.*

Themes From This Research:

1. The conventional wisdom that differences in scientific beliefs arise from allegiance to the Democratic or Republican parties is only partly true. Factors such as liberal-conservative ideology, political or economic values and religion matter as much as, if not more than, partisanship per se.
2. “Motivated reasoning” – the idea that decision-making about the truth of scientific findings is not impartial but is biased by preexisting value beliefs – is not unique to conservatives. While conservatives and Republicans may be especially resistant to scientific claims related to climate change, for example, liberals and Democrats also tend to be skeptical of scientific claims that undermine their policy preferences or value commitments.
3. Increasing education and knowledge will not necessarily improve matters. Among members of the general public, the people who are most aware of the nuances of science/policy debates are the people most likely to allow their values to color their scientific understanding.
4. We shouldn't necessarily panic over all this. Despite the findings in this volume, there is evidence that most members of the public trust scientists more than they distrust them, and there is evidence that among some important groups (teachers and scientists, for example), more knowledge does in fact lead to less political bias. There is also some optimism that new types of science communication may more successfully convey knowledge to the public.

Value-based assessments of science and related technologies are often understandable and in some cases even reasonable, but they can nevertheless drive political gridlock and stall important scientific advancements. In increasing our understanding of the ways in which politics and science intersect, this volume aims to contribute to public efforts to reduce political polarization surrounding science.

Some Key Findings:

Public Beliefs about Science:

- Political ideology and religion play more of a role than party politics in shaping our trust in scientists.
- Conservatives and liberals both show a decreased trust in science when science contradicts their political values.
- Where citizens have clear concerns about the risks of various energy technologies, these risk perceptions appear to be more important than political predispositions in shaping attitudes toward those technologies.

Science Communication:

- News media politicization of health issues tends to decrease public trust in scientists generally and in medical professionals particularly.
- It's not always true that people seek to clarify their views on scientific issues through media outlets with a politically congenial disposition. When, for example, people are given cues clarifying the political stakes of a new scientific issue, they are willing to get more information using uncongenial media outlets. In the absence of such cues, however, Americans stick to attitude-consistent media sources.
- Cultural biases that impede science acceptance can be overcome, to some extent, with an approach to science communication that adds accepted cultural meanings to information content.
- Career advancement matters more to scientists than their political predispositions as they decide whether or not to engage with the media or in public outreach on scientific and policy debates.

"Knowledge Elites" and the Politics of Science:

- Scholars in the more humanities-oriented social sciences tend to be pessimistic about the social utility of genomic science, while biologists and scholars in scientifically oriented social sciences tend to be optimistic. This points to an interesting paradox: those disciplines considered by many to be the most liberal tend to be the most pessimistic about genomics, while the (relatively) more conservative disciplines are open to its possibilities.
- The inability of many American public school teachers to effectively teach evolution has its roots in the preservice years. Teacher training programs could likely make headway in preparing teachers to do so by improving instruction in science fundamentals and by giving preservice teachers opportunities to reflect on how their personal religious values and scientific beliefs can co-exist.
- U.S. congressional staffers are more likely than the general public to accept human behavior as having a role in climate change, but they are also nearly as polarized as the public along ideological lines on the subject.