



Science Shouldn't Be Political

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Abstract

Scientific institutions increasingly engage in politics through candidate endorsements and public advocacy, raising questions about the neutrality of scientific institutions and public trust in science. Analysis of Nature's presidential endorsements and experimental studies demonstrates that political involvement decreases perceived scientific credibility. While politicized science can still meet the demands of scientific objectivity, the trust costs are substantial. This study examines arguments that political involvement by scientists is unavoidable, finding these justifications insufficient except in rare cases where greater scientific benefits are accrued through political involvement than the corresponding loss of public trust. It concludes that scientists should generally avoid political involvement to preserve institutional credibility and public support for scientific research. Policy implications include establishing ethics review processes for institutional political engagement and improving science education to help the public distinguish between scientific expertise and political advocacy.

Keywords Science and politics · Public trust in science · Political endorsements · Academic activism · Neutrality of scientific institutions

A lot of scientists really don't like Donald Trump. They dislike him so much, in fact, that many flagship scientific journals broke multi-century-old traditions of political impartiality to endorse his political opponents for presidential election. This wasn't a case of Trump Derangement Syndrome (O'Sullivan, 2025); rather, it's symptomatic of the fact that science is getting involved in politics a lot more often and in more significant ways than it ever has

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before. I argue that this isn't a good thing, but not for the normal reasons given for scientists to stay out of politics.

After briefly reviewing in the first section how science has become more political in recent years, I argue in section two that, contrary to most critics of scientists' political involvement, politicized science isn't hopelessly biased and can meet the expectations of scientific objectivity just as well as science that's strictly apolitical. Instead, I argue that the reason why science shouldn't be political is because the politicization of science has catastrophic consequences for trust in science. In section three, I draw on empirical evidence to show that the public doesn't trust politicized science, paying particular attention to the endorsement of Joe Biden and its effect on trust in science. In section four, I argue against defenders (actual and possible) of this presidential endorsement who (do or might) argue that science can't avoid being political, either because 'all research is political' or, on a more pragmatic level, Donald Trump posed such a threat to science that scientific institutions had no choice but to act. I argue that neither of these are true. I soften my position somewhat in section five, where I admit that there might be some pursuits requiring political involvement that are more scientifically important than public trust and would therefore justify a loss of public trust in science for the sake of their achievement. However, such pursuits will be few and far between – if they exist at all. This implies that, as a rule, scientists shouldn't be political. However, I conclude by offering the academic activist another option: educate the public. If people don't lose trust in trustworthy but politicized science, then scientists can get involved in politics all they like.

Science is Becoming More Political

Academic activism is increasing exponentially (Tormos-Aponte et al., 2023). Scientists and scientific institutions are getting involved in politics more often and in increasingly significant ways. In the last two decades, scientific journals have been embroiled in numerous editorial controversies for publishing letters and editorials on a variety of political topics, including a proposed tobacco ban (Ferriman, 2003), the Israeli-Palestinian Conflict (Manduca et al., 2014), and the origin of the coronavirus responsible for the global pandemic (Calisher et al., 2020). The Lancet (2015) publicly criticized the United Kingdom Government for its political attitude towards the National Health Service. Nature (2008), for the first time in its 140 year history, broke political neutrality to endorse Barak Obama as President of the United States. Five years ago, Nature (2020a) did so again, this time for Joe Biden, along with Scientific American (2020), which broke 175 years of apoliticality, The New England Journal of Medicine (2020), which broke 208 years, and The Lancet Oncology (2020), which also made the first political endorsement of its 20 year history. Nature (2024) and Scientific American (2024) did so again recently, endorsing Kamala Harris for the presidency. These journals now publish a lot of political content and Nature (2019, 2020b, 2023) has expressed multiple times its intention to become increasingly political.

Academic activism has always been around, but it used to retard publication and career advancement (Cancian, 1993) because scientific interests were expected to be sharply demarcated from nonscientific ones (Moore, 1996). Scientists were punished for their political involvement, often through the disapproval of their peers. Jeff Cornassel (2003), a Cherokee Indian, was told when interviewing for an academic position at a midwestern

university that several faculty members suspected him of being “an activist posing as an academic” (p. 160). In roughly the same period, Edward Said (1996) bemoaned that his delivery of the Reith Lectures was met with opposition, some asserting that his activist tendencies meant that he should be “disqualified for any sober or respectable platform at all” (p. x). Similarly, Mark Chesler, one of the founders of the Educational Change Team at the University of Michigan Institute for Social Research, recounts how the team’s research was accused of containing “an inappropriate balance of social research and social action” and how they were invited to “locate its action work outside of the institute” (Hasenfeld & Chesler, 1989, p. 503). He attributes his failure to achieve full professorship in the sociology department to “the appropriate balance of scholarship and action in my work, and the general relevance of my work for advancing the intellectual frontiers of sociology as a discipline” (p. 504).

Sometimes, political involvement was met with more than just academic scorn. Perhaps the most famous example is J. Robert Oppenheimer who, as chairman of the United States Atomic Energy Commission General Advisory Committee, lobbied for international arms control and against the development of the hydrogen bomb, both on practical and moral grounds (see Hewlett & Duncan, 1969; Rhodes, 1995; Bird & Sherwin, 2005; Cassidy, 2005; Young & Chilling, 2019). He said of the 1951 programme to develop the hydrogen bomb that it “was technically so sweet that you could not argue about that” but that “the issues became purely the military, the political and the humane problem of what you were going to do about it once you had it” (see Polenber, 2002, pp. 110–111). As a result of his advocacy on this front, he was stripped of his security clearance. This isn’t an isolated account. Historian of science Alice Dreger (2015) describes many cases where scientists got involved in political disputes and suffered personally and professionally as a result.

Some still think that engaging in politics hinders an academic career (Bashiri et al., 2025; Moorlock, 2019; Storey & Fletcher, 2023). While I can’t comment on specific personal cases, they’re almost certainly wrong to think that the academe still rejects extra-academic activities, partly because they make use of outdated scholarship to support their general claim. In the social sciences, political involvement has gone unpunished for a long time: the American Political Science Association (1968; 2012) has always rejected a ban on activism. Furthermore, not only are there often calls to broaden employment criteria and reward mechanisms to include activist activities, many universities are actually formally rewarding ‘community-engaged scholarship’, which is increasingly populating academic tenure policies (see Alperin et al., 2019). Similarly, the term ‘activist university’ might be thought of as a conservative rebuke to refer to the leftwing tendencies of the academe, particularly in the United States, but it’s actually an ideal at which many intentionally aim (Nørgård & Bengtson, 2021). Many scientists have bought into the idea that *all* research is activist (Barker, 2020) and that it *should* be, particularly with respect to fields with significant social impact like climate change (Green, 2020) or bioethics (Rogers, 2019; Scully, 2019).

In fact, arguments *against* activism in research are rare and tend to receive ready replies, whether it’s in philosophy, climate science, social science, or multidisciplinary journals. For example, Bas van der Vossen (2015) is criticized by Ben Jones (2020), Renate Meyer and Paolo Quattrone (2021) by Giuseppe Delmestri (2022), Marcia McNutt (2024) by Agustín Fuentes (2024), and Ulf Büntgen (2024) by Christel W. van Eck et al. (2024), to name just a few. Arguments supporting political involvement by scientists, or defacing characteristics like objectivity or impartiality, are exceedingly commonplace and published in some of the

most prestigious journals (e.g. Saini, 2020). The literature in a huge range of fields is absolutely girt with affirmations of the value of activist research – so much so that I suspect a survey of the academe, particularly of social scientists, would easily reach the 95% threshold that has recently been suggested by my colleague Peter Vickers (2022) as sufficient warrant for the establishment of a scientific fact.

With the exception of the sparse objections to academic activism, studies discussing the ethics of activist research never consider *whether* it's ethical to do so in the first place. Rather, they focus on procedural issues of *how* to be the most ethical academic activist, which normally means being more activist than researcher (Allan, 2017; Loperena, 2016; Speed, 2006). Some are even starting to claim that peer-review should be a site of activism (Itchuaqiyag & Walton, 2021), which strikes me as a particularly radical proposal. All this goes to show that, these days, politicized research is idealized, not eschewed like it used to be. The only thing difficult about being an activist now, at least in the west, is managing your deadlines (see Baird, 2020).

Politicized Science Can Still Be Good Science

According to an old-fashioned view of academia, the politicization of science is a problem because academic research shouldn't be in any way socially engaged. As the early twentieth century classicist Cornford (1908) put it:

The Principle of Sound Learning is that the noise of vulgar fame should never trouble the cloistered calm of academic existence. Hence, learning is called sound when no one has ever heard of it; and 'sound scholar' is a term of praise applied to one another by learned men who have no reputation outside the University, and a rather queer one inside it (p. 11).

The reason why it used to be so widely believed that science should be independent of society as far as possible, including politically, is that it was thought social or political values might interfere with the methodological integrity of science (de Melo-Martín, 2024, §2.1). Torsten Wilholt (2009) shows that having political values can make scientists vulnerable to preference bias which can, in turn, result in values being used in place of evidence (Douglas, 2009), inconvenient evidence being disregarded (Anderson, 2004), or methodological manipulation (Elliott, 2017). Max Weber said that, for science to be objective, researchers must engage with "facts that are inconvenient for their party opinions" (Gerth & Mills, 1948, p. 147). The concern is that, when science is politicized, scientists won't do so that. Instead, they'll succumb to psychological biases that make them myopically confirm their hypotheses. This is why Bas van der Vossen (2015, 2020) argues that political theorists shouldn't be politically engaged. Even worse, scientists might not even make any attempt to be objective for the sake of achieving their political goals. One result of politicized science is what Gerald Gaus (2005), speaking about applied ethics, calls "an intellectual game where you defend what you want to believe" (p. 167).

I argue that the potential biasing effects of political values are very real but that, as Christel W. van Eck et al. (2024) say, a choice between advocacy and objectivity is a false

dichotomy. Obviously, on one positivist reading of ‘objectivity’ – i.e. as value-freedom (*wertfreiheit*) – it’s tautologous to say that politicized science isn’t objective. There are many meanings of scientific objectivity (Montuschi, 2004) and a correspondingly large philosophic literature. None of these meanings can be reduced into one another without an impoverishment of meaning (Douglas, 2004), but Inkeri Koskinen (2020) has recently argued that what unifies all these different meanings is the avoidance or management of epistemic threats. Science is therefore objective when appropriate steps have been taken to ensure that it’s not biased (which, note, isn’t the same as it being ultimately free from biases, which might be (probably are) an ineliminable part of scientific research).

Nancy Cartwright et al. (2025) provide five measures for achieving the demands of scientific objectivity and argue that scientists are still capable of taking these steps even when engaged in activist or otherwise politicized research. They investigate the work of Ruth First (1925–1982), a South African anti-apartheid activist and Durham University sociologist who was killed by a parcel bomb built by South African police. She was a paradigm example of an academic activist whose research achieved a very high standard of objectivity. This is clear from the opinions of her contemporaries: one of her colleagues, Bridget O’Laughlin (2014) wrote that she was “deeply concerned” that her work “would not be politically compromised” (pp. 26–27); Antonio de Bragança and Bridget O’Laughlin (1984) said that “when we were no longer consistently coming into contradiction with our own practice, she forced us to react, to criticise, to move ahead” (p. 172); Michael Cahen (1982) and Mark Wuyts (2014) both testify that Ruth First didn’t hesitate to criticize the policies of the Frente de Libertação de Moçambique with which she was politically allied; and her friend and colleague Gavin Williams said about her that.

She didn’t know how to do something badly. She was never sure that what she was doing was good enough but actually she never, ever, to my knowledge did anything badly (Cartwright et al., 2025, p. 123).

Other examples of activists who’ve taken steps to be objective in their work include Nathan Geffen (2010), a member of Treatment Action Campaign, who writes that “we needed to be well informed not just for our intellectual stimulation, but because the lives of our members were at risk” (p. 53).

Of course, these examples could be exceptions to the rule. I’m not arguing that academic activists are all doing good work, or that we needn’t be concerned about the epistemic threat posed by political values. I’m simply pushing back against the assumption that scientists who get involved in politics can’t do good science; they can – it can really only be determined on a case-by-case basis whether a particular research programme fails to be objective. This is why philosophers have sought to establish demarcation criteria to distinguish between proper and improper influences of values in science (Holman & Wilholt, 2022).

My aim in this section is to describe the existing debate about academic activism and the politicization of science to make it clear what I’m *not* arguing and how I contribute to the debate. I argue against the politicization of science, but not because science can’t be both political and objective – it can. Rather, I argue that science should stay out of politics because political involvement is unnecessary and has catastrophic consequences for trust in science.

The Public Doesn't Trust Politicized Science

My argument is simply that people don't trust science when it's political so, for the sake of public trust in science, scientists ought not be political. W. E. B. Du Bois (1898) thought something similar (see Bright, 2018). He argued that the public doesn't trust scientists who are motivated by anything other than a pure unadulterated desire to acquire truth. The public won't therefore support (i.e. fund) scientific research if they suspect that scientists have a political agenda – especially one they don't agree with. Thus, to be able to do science at all, scientists must be motivated by nothing but the pursuit of truth.

Inmaculada de Melo-Martín (2024, §2.3) disagrees. She says that this argument mistakenly assumes that focussing on political goals would be at the expense of truth when, in fact, it's possible to have both political and epistemic goals which don't interfere with or even mutually benefit one another. This is the false dichotomy of which I spoke in the previous section. She goes on to say that this worry conflates trust with warranted trust, and it's only the latter that we ought to care about (see also Intemann, 2024). The public distrust of politicized science isn't warranted because it relies on a false dichotomy and assumes that political values are avoidable which, according to her, they're not.

I think this objection is misplaced. From an operational perspective (i.e. whether the public support science in a way that allows it to achieve its goals), we don't care about warrant at all. We care about public trust in science principally because the public's opinion of science determines how much funding it receives, which tends to come from public money, and the extent to which the public comply with scientifically informed recommendations and policy. As something of an epistocrat myself (see Brennan, 2016), I'd very much like suffrage to be tied to the extent to which people's beliefs are warranted. The reality is that's not the case; people get a vote no matter what. I'm not arguing that the public *shouldn't* trust politicized science. Rather, my claim is that they *don't* trust it, which might well be an unwarranted belief. Du Bois (1898; 1935, ch. 7) seems to have thought that political values dispose scientists to fraud or cherry-picking, which is why the public distrust politicized science (see Bright, 2018, §4). To this extent, I don't fully with him (see also Bright, 2017).

My argument is a lot simpler and doesn't rely on any normative view about what the aims of science ought to be or, as I made clear in the previous section, whether politicized science is any good or not. My opinion is grounded in a base empirical observation: when science gets political, the public lose trust in it. Whether the public *ought* to lose trust in politicized science is of no consequence – if we don't want them to, then greater efforts must be taken to educate and communicate to the average man why he ought to trust politicized science (Hyde, 2025a). What matters is that people currently *don't* trust politicized science. Until and unless that fact changes, it shouldn't be political.

I claim that people don't trust science when it's involved in politics. Let's have a look at the empirical evidence for that claim (which is notably lacking in existing scholarship on this topic). It's been observed that disclosures of financial conflicts of interest decrease perceived research quality and trust (Goodwin & Mullan, 2009; Schroter et al., 2004). To see whether disclosure of social and political values has a similar influence, Kevin Elliot et al. (2017) ran two randomized control trials in which scientists interpreted the evidence on and made recommendations about Bisphenol A, which is used in many plastics and has been debated for its possible health risks. In both experiments, participants were shown short messages from a fictional scientist who either didn't mention any values, mentioned valu-

ing economic growth, or mentioned valuing public health. Then the scientist concluded that Bisphenol A is harmful and needs stricter regulation, or that it's safe and regulation should be reduced. What they found was that transparency about values tended to decrease trust in science. While scholars like Lisa Rosenbaum (2015), Kevin Elliott and David Resnik (2014) theorize that acknowledging their values will make scientists more credible and *trustworthy*, preliminary evidence shew that it actually decreased the extent to which they're *trusted* (see also Hyde, 2025a).

That experiment looked at a very modest kind of politicization which, as I'll discuss in the next section, has always been around because it's a largely unavoidable part of doing science. Other studies have investigated the effect on public trust of more blatant types of political involvement of the sort that's increased in recent years. Eleonora Alabrese et al. (2024) explored whether scientists lose credibility when they share political views online. Analyzing nearly 100,000 American academics' Twitter activity, they found that scientists are far more likely than average users to post about politics, with 44% of academics compared to 7% of general users making political comments on Twitter. They ran a conjoint survey experiment with 1,700 Americans in which participants rated mock scientist profiles. These profiles varied in the scientist's political orientation, career stage, gender, field of study, and whether they worked at a prestigious or less well-known university. Participants were then asked how credible they found each scientist and whether they would want to read something written by them. What they found was that neutral scientists were consistently seen as most trustworthy. Any political stance reduced credibility, with stronger positions associated with greater decreases in trust – especially by people from the opposite political camp.

I now propose to examine a case study. One example could be Climategate, the effects of which on trust in science have already analyzed by philosophers of science (Hyde, 2025a; John, 2018). However, this example requires some interpretation because, while climate science is a very politicized topic, the University of East Anglia climatologists weren't actually accused of being political and didn't actively get involved in politics. A much better example, and the one I propose to develop, is the endorsement of presidential candidates by flagship academic journals.

In advance of the election for the 44th President of the United States, Nature (2008) wrote an editorial titled "America's Choice" comparing the policy of Barack Obama and John McCain. Early in the article, they stated that:

Both sides recognize science's inspirational value and ability to help achieve national and global goals. That is common ground to be prized, and a scientific journal's discussion of these matters might be expected to stop right there (p. 1149).

However, Nature went on to say that "Obama has surrounded himself with a wider and more able cadre of advisers than McCain" who, the editors continue, "seeks a narrower range of advice" and "fails to educate himself on crucial matters." An earlier news feature in the journal by Alexandra Witze (2008) included Obama's responses to eighteen scientific questions that McCain's campaign had declined to answer. Nature concluded their editorial by saying that "it would cast its vote for Barack Obama."

Four years later, Nature (2012) wrote an editorial again titled "A Vote for Science" declaring that "Barack Obama and the Democrats have a clear advantage over Mitt Romney and

the Republican Party.” After Obama had served two terms in office and elections to decide the 45th President of the United States were looming, *Nature* (2016) once again published an editorial, this time declaring in its title that “Hillary Clinton Will Make a Fine US President”. Its concluding paragraph reads:

Although both parties have become more extreme over the past two decades, conservatives have turned their backs on mainstream science to an unprecedented degree. If there is any good news, it’s that everybody now recognizes that the Republican Party has a problem. A new generation of conservative leaders will need to set a fresh course. In the meantime, Clinton must take the reins (p. 289).

That year, political coverage in the journal included news items on how Trump ignored scientific advice and “seemed to focus more on taunting the political establishment than on staking out policy positions” (Tollefson, 2016), how “Trump’s immigration stance stokes fears for science” (Ledford, 2016), and how “Trump’s border-wall pledge threatens delicate desert ecosystems” (Owens, 2016), and a world view that scientists must do more to avoid complicity in Trump triggering “a crisis in Western democracy” (Macilwain, 2016).

Over the next four years, the *Nature* Portfolio published a litany of attacks on Trump and his approach to science. Some examples include: Trump was accused of robbing science of a voice in government by failing to fill key scientific positions within his first hundred days in office (Nature, 2017a); he was criticized for prioritizing territorial rather than global benefits in his approach to space science (Grady, 2016); *Nature Biotechnology* (2020) accused Trump of attacking the scientific integrity of government agencies; and journalists at various *Nature* Portfolio journalists criticized him for trying to slash science budgets (Reardon et al., 2017), interfering politically in biomedical research (Webster, 2020), reversing progress in climate policy (Tollefson, 2017a, 2017b, 2018), driving talent away with xenophobic immigration policies (Morello & Reardon, 2017; Reardon, 2017), and undermining public trust in science through denial and contempt (Nature, 2017b; Reardon et al., 2016). Opposition to Trump enjoyed a renewed vigour during the pandemic in the latter years of his presidency. His administration was accused by *Nature* (2020c) of suppressing a public health approach to controlling the pandemic, causing a coronavirus data crisis (Maxmen, 2020), and Trump was personally criticized for attending meetings at the White House while possibly infected and was blamed for causing a “superspreader” event (Subbaraman, 2020).

Unsurprisingly, a few weeks before the election for the 46th President of the United States, *Nature* (2020a) published an editorial: “Why Nature Supports Joe Biden for US President”. Like previous elections, *Nature* also published news items, worldviews, and editorials critical of Trump and laudatory of Biden’s policy. Two key examples include a lengthy article by a team of *Nature* journalists about the scientific benefits of Biden’s presidency, including that it would undo “months of Trump politicizing the pandemic” (Maxmen et al., 2020), and a news feature (not an *editorial*) titled “How Trump Damaged Science – And Why It Could Take Decades to Recover” (Tollefson, 2020) which features as a ‘related article’ on *Nature*’s endorsement of Joe Biden.

Most recently, *Nature* (2024) published an editorial titled “The World Needs a US President Who Respects Evidence” that endorsed Kamala Harris and opposed Trump again as he ran to be the 47th President of the United States. The editors’ rhetoric didn’t just focus on the impacts of Trump’s election for American policy, as it had in previous election cycles

when opposing him. Instead, they concluded by writing that “a second Trump presidency would have an even more destabilizing effect globally, giving the green light to yet more leaders like him.” By then, the model was clear: in the months leading up to the elections, the journal published numerous news items and opinion pieces extolling Kamala’s many merits, particularly for science (Kozlov et al., 2024).

While they’ve mostly focussed on American politics, Nature (2020b) has expressed its intention to get involved in global politics more often too. Their first apparent expansion to foreign elections was when Nature (2022) opposed Jair Bolsonaro’s campaign for presidency of Brazil. Following the usual pattern, the journal featured opinion pieces and the sort criticizing him in the months leading up to the election (Rodrigues, 2022; Tollefson, 2022).

A study is yet to be done on the impact on trust in science of two decades of political involvement by Nature. However, Floyd Jiuyun Zhang (2023) ran an experiment to test the effects of Nature’s most recent political endorsement. He conducted a randomized online experiment with 4,260 Americans, half of whom were shown Nature’s endorsement, the other half of whom were shown a neutral message about Nature’s new website design. Participants were then asked about their trust in Nature and in science more broadly. What he found was a large reduction in trust in Nature and in science among Republicans and statistically insignificant effects among Democrats. He also observed a dramatic increase in polarization, with the gap in trust in science between Trump and Biden supporters widening by between two- and threefold. This study was replicated by Georgios Papadopoulos et al. (2024) whose report corroborates the author’s main finding of a decrease in trust in Nature. Data wasn’t collected on how Nature’s endorsement might have altered views outside the United States, but Arthur Lupia (2023) suggests that, in light of other research on trust in science (Herbig & Milewicz, 1993; Lange et al., 2011; Lupia, 2013), the results might be similar in other regions.

Cory Clark et al., (2023, 2024) sought to replicate this pattern across a set of seventy organizations, institutions, professions, and academic disciplines. Their results show that perceptions that political values influence an organization’s work were associated with lower trust toward those organizations, even among members of the public who saw themselves as ideologically aligned with those. This is a much stronger finding than those of Kevin Elliot et al. (2017) and Floyd Jiuyun Zhang (2023), whose conclusion that politicization decreases trust in science is qualified by the misalignment of political beliefs between science and the public. Naomi Oreskes and Erik Conway (2022) argue that evidence only supports a crisis of *conservative* trust in science and that trust in science as a whole remains high. This would still represent a major concern, given that roughly half the population of Europe and America are right-leaning, based on recent voting patterns, while science is significantly more leftwing (Kaurov et al., 2022). However, the evidence provided by Cory Clark et al., (2023, 2024) suggests that the population as a whole distrusts politicized science. In my view, this is grounds for scientists to stay out of politics.

Science Doesn’t Need to Be Political

In this section and the next, I consider two possible objections to my argument that scientists shouldn’t be political for the sake of trust in science. The first is that science might have *no choice* but to be political. There are several routes to this conclusion, one of which is that

it's often said that 'all research is political'. But what does 'political' mean here? Let's have a closer look at this view.

Feminist methodologists often make this claim (see Forssén & Carlstedt, 2000). Sociologist Gayle Letherby (2003) is a very well cited example. Observe the following extract where that slogan appears:

Historically, research has been presented as orderly, coherent and clean: as hygienic (see Kelly et al., 1994). Yet all research is ideological because no one can separate themselves from the world – from their values and opinions, from books they read, from the people they have spoken to and so on. Thus, the product cannot be separated from the means of its production (Olsen, 1980) and feminists not only acknowledge this but celebrate it (pp. 5–6).

What she's referring to is a foundational view within feminist epistemology most associated with Donna Haraway (1988), who famously argued that all knowledge is *situated*. In short, standpoint epistemologists claim that all research is conducted by fallible human researchers whose life experiences influence the choice of topics researched, the questions asked, the methods used, and the manner in which empirical evidence is interpreted (Simandan, 2021). As Andrew Rich (2011, 2018) says, "there is no such thing as disinterested expertise." This view has its providence in feminist standpoint epistemology, but is now widely accepted by social scholars of science. The title of a famous book by Steven Shapin (2010), for example, refers to the fact that science is "never pure" because it's "produced by people with bodies, situated in time, space, culture, and society, and struggling for credibility and authority."

Note that the opposite view, with which the standpoint theoretic claim is contrasted, is that science can be 'hygienic' or, in other words, impartial, detached, independent (Nozick, 2001). When feminists claim that 'all science is ideological', they're not referring to the necessity of political behaviour in the public sphere, such as endorsing a political candidate or commenting on social media – which I've argued decrease trust in science and therefore ought to be refrained from. Rather, they're refuting the positivist view that science can be conducted from what Arthur Eddington (1921) and Arthur Fine (1998) called "the viewpoint of no one in particular" and Thomas Nagel (1989) calls "the view from nowhere."

Historians and philosophers of science also reject this positivist view. They argue that all research is ideological in the sense that all research is *value-laden* (Douglas, 2000; Rudner, 1953). Norwood Russell Hanson (1958) insisted that all observation is theory-laden, meaning that what scientists see is always interpreted through conceptual schemes and prior commitments. Thomas Kuhn (1962) took this further and argued that scientists don't work within a neutral framework but rather within theoretical and methodological paradigms that structure what counts as legitimate problems, appropriate methods, and credible solutions. Later philosophers expanded on this: Helen Longino (1990) argued that science is a socially situated practice where values influence theory choice, reasoning, and the legitimacy of knowledge claims; Philip Kitcher (2001) argued that values are used to make decisions about research agendas and priorities too. Thus, scientists' judgments about evidence, methods, and theories are guided not simply by logic and data but by background assumptions, epistemic values (such as simplicity or explanatory power), and social interests. This is now a mainstream methodological view. For example, the Sixth Assessment Report of the Intergovernmental Panel on Climate Change recognizes that social values "may guide certain

choices made during the construction, assessment and communication of climate science information” (IPCC, 2023, §1.2.3.2).

First of all, observe that value-ladenness only corresponds to the weak kind of politicization that Kevin Elliott et al. (2017) have found to decrease trust in science. It doesn’t follow from the fact that science is essentially value-laden that scientists therefore have no choice but to make political tweets and endorse presidential candidates. Second, it’s common for philosophers of science to distinguish between *epistemic values* that guide the pursuit of truth (e.g. consistency, simplicity, explanatory power, empirical adequacy) and *social values* (e.g. political, economic, or ethical considerations). Heather Douglas (2000, 2009) famously argues that, while social values inevitably shape decisions about which research questions to pursue, they don’t need to influence the internal stages of theory development, testing, and analysis. In other words, scientists can use social values to prioritize research agendas without letting these values distort the assessment of evidence or the acceptance of theories. This view hinges on the classic distinction made by Hans Reichenbach (1938) between the context of *discovery* and the context of *justification*. While social values can help us to decide what research we ought to pursue (discovery), the core epistemic work of science (justification) remains guided by epistemic standards, and therefore science need not be inherently political. Social or political considerations can legitimately inform the selection and application of research, but they don’t need to dictate the rational evaluation of evidence itself, which can, in principle, remain insulated from political pressures.

Critical theorists make a similar but more radical claim than both philosophers of science and feminist epistemologists. For them, all knowledge is political in a deep and structural sense. From the Frankfurt School onwards, critical theory has insisted that research is never innocent: it’s always implicated in either sustaining or challenging relations of domination. Max Horkheimer (1937) distinguished between ‘traditional’ theory, which seeks only to describe and explain, and ‘critical’ theory, which aims to reveal structures of power and contribute to human emancipation. Herbert Marcuse (1964) argued that modern scientific and technical rationality is itself entangled with systems of social control and oppression, representing this kind of status quo enforcing traditional theory. Jürgen Habermas (1968) took this further, articulating the idea of ‘knowledge-constitutive interests’. He argued that all knowledge is guided by human interests: technical interests (controlling and predicting nature), practical interests (understanding one another in social life), and emancipatory interests (achieving freedom from domination). On this view, the very enterprise of research is structured by political and normative commitments, whether these are acknowledged or not. Claims to neutrality are, as Lara Drew and Nik Taylor (2014) argue, “ideological sleights of hand” because apoliticality is a “myth promoted on behalf of the institutions with a vested interest in maintaining the... status quo” (p. 158).

When critical theorists say that ‘all research is political’, they mean that it’s bound up with ongoing struggles over authority, legitimacy, and emancipation. Knowledge either reinforces the status quo or helps to transform it; there’s no neutral middle ground. While many critical theorists, such as the Harvard Law School Conference Organizers (2022), go on to argue that scholars should directly engage in activist activities outside of the ivory tower, critical theory doesn’t mandate that all science is political in this way. Like the claims made by feminists and late twentieth century philosophers of science, the critical theorist claim doesn’t excuse political behaviour of the sort that decreases trust in science.

Beyond these fundamental claims about the nature of scientific knowledge production – which were at the centre of the science wars in the 1990s until the early 2000s (Mermin, 2008), skirmishes of which continue today (see Hyde, 2025b) – another reason why it might be the case that ‘all science is political’ is that scientists need to *apply* the knowledge that they produce. This literally forms part of the Science Council (2009) definition of science. As Rene Brauer et al. (2025) say, “all research is activist, in the technical term of activation, as without it nothing would be produced, not even new knowledge.” In a less technical sense, the United Kingdom Research Excellence Framework has in recent years adopted an ‘impact agenda’ which expects research to have social and policy relevance (see Martin, 2011). I’ve also urged philosophers of science in particular to pursue more applied, interdisciplinary work with defined impacts (anonymized).

The problem for trust in science is *political* involvement, not simply involvement in policy. Pew Research Center staff Alec Tyson and Brian Kennedy (2024) found that Americans are split over scientists’ role in policymaking: 51% say that scientists should be actively involved in policy, while 48% say that they should focus on the science and leave policymaking to the policymakers. However, this doesn’t seem to have much of an effect on distrust in science. Empirical evidence gathered by John Kotcher et al. (2017) suggests that climate scientists are just as trusted when they advocate for policies as when they remain impartial. Viktoria Cologna et al. (2021) even present evidence to suggest that people *want* scientists to get more involved in policy, and Lindsay Beall et al. (2017) found that advocating for politically uncontroversial policies *increased* trust in scientists.

Ultimately, neither ‘political’ value-judgements nor involvement in policymaking are the crux of the politicization of science. The evidence for concern about the former (i.e. Elliott et al., 2017) couldn’t be replicated anyway (Hicks & Lobato, 2022). The real concern for trust in science that I’m drawing attention to in this study is political behaviour such as endorsing a presidential candidate (Zhang, 2023) or making political comments on social media (Alabrese et al., 2024). That’s where the most obvious losses of trust have been observed. After it was observed that Nature’s endorsement of Joe Biden had damaged the reputation of the journal and of science more widely, the editors defended their decision to do so. Their defence essentially boils down to the claim that they had no choice but to get involved in politics, and thus serves as another possible objection to my argument.

In their first political endorsement, Nature (2008) didn’t claim that they had no choice. Rather, their argument was that it follows from “the values of scientific enquiry, rather than any particular policy positions on science,” that Obama would make a better president than McCain. In their view, scientific principles such as disinterestedness, systematic testing of ideas, and deference to expertise “can be usefully applied when making decisions about the world of which science is but a part.” Because Nature believed that Obama surrounded himself with a wider and more able cadre of advisers than McCain, they believed that a scientific approach to the election would result in the presidency of the former. This is a very bold, controversial, and scientific attitude to take. Many political theorists and philosophers of science, for example, would take great offence at the claim that politics ought to adhere to scientific values (Feyerabend, 1978). On the contrary, many claim that science in a democratic society ought to adhere to political values (Kitcher, 2001, 2011), or must at least be accountable to the public (Douglas, 2021), hence motivating citizen science as well as patient and public involvement. Of more relevance to my investigation here, Nature didn’t claim in their editorial that they *needed* to get involved. In fact, it’s quite unclear to me why

they broke 140 years of apoliticality to endorse Obama. The endorsement of Biden over Trump by Nature (2020a), Scientific American (2020), and The New England Journal of Medicine (2020) makes a lot more sense given the prevailing attitudes of scientists towards Trump, the fact that many scientists had been driven to political activism in apposition to him (Marris, 2016) and, as I'll discuss below, the argument that scientific and medical institutions were obliged to protect human lives and wellbeing from what they saw as Trump's dangerous pandemic policy. By comparison, the endorsement of Obama seems frivolous.

Four years later, when Nature (2012) endorsed Obama again, the editors didn't even justify why they thought it appropriate for a scientific journal to do so. The same was true when Nature (2016) endorsed Hilary Clinton. The editors waxed lyrical about a long list of Hilary's virtues while lambasting Trump's vices, but they seemed to have lost their consideration for science's role in society that Nature (2008) acknowledged eight years earlier when they wrote that "a scientific journal's discussion of these matters might be expected to stop" short of endorsing a candidate.

This changed during the Trump Presidency. One year before their endorsement of Joe Biden, Nature (2019) published an editorial arguing that "scientists *must* rise above politics and restate their value to society" (emphasis added). A week before, Nature (2020b) declared that it "*needs* to cover politics now more than ever" (emphasis added). And, in their endorsement, Nature (2020a) said that "*we cannot* stand by and let science be undermined" (emphasis added). In all three articles, the alleged necessity of scientists involvement with politics was just emphatic. Nature never argued that they genuinely couldn't avoid doing so, nor did they ever criticize scientists or other scientific institutions for abstaining from politics. Their arguments basically amounted to assertions of scientists' right to defend themselves from political attacks and to ensure that politicians are listening to what scientists tell them.

It was only three years later, when they were faced with evidence that their actions might have had catastrophic effects for trust in the journal (Zhang, 2023), that Nature (2023) properly revisited its claim, originally made fifteen years earlier to endorse Obama, that the journal should endorse political candidates. Their reasoning was, in short, that Donald Trump damaged science (see Tollefson, 2020) and thus "silence was not an option when he ran for re-election." Note that the pretence of necessity disappeared from the editorial's title, which defends the claim that Nature *should* endorse political candidates, not that it *must*. The editors slip into hyperbole in the body of the article, though, when they claim that silence *wasn't optional*. But this is too strong a conclusion from the premisses they defend: even if Trump did damage science, why does that justify a scientific journal endorsing a political candidate and, more importantly, why would they be *forced* to do so?

Nature's argument's don't support the *necessity* of political involvement. However, there's a (very) charitable reconstruction of the editors' argument that could imply that science really had no choice but to endorse various presidential candidates. Imagine an extreme scenario in which one candidate is a crazed science denialist and seeks to quite literally outlaw science. Should this candidate win, there will be no science to trust. Given this, any loss of trust in science is inconsequential and thus political involvement would be, in a very strict sense, absolutely necessary for science to achieve its scientific goals of producing and applying knowledge. In this scenario, political involvement would completely merge with scientific objectives. However, this argument only works when faced with the literal collapse of science. Perhaps this was what Nature's editors imagined when they opposed

Trump and formally endorsed his political opponents. Really, that's far too dramatic a claim, even given Trump's efforts to defund science in his second presidential term. Science is still kicking, whatever losses it may have suffered. When we look at earlier endorsements of Democratic candidates and opposition to Republicans, this argument clearly doesn't work at all. Nature claimed that the Democrats respected science more than the Republicans, not that the latter would destroy science.

None of Nature's political endorsements were strictly necessary and there's evidence to suggest they didn't work anyway (Zhang, 2023). However, their arguments raise a broader question: are there any scientific goals requiring political involvement that are so significant they justify some loss of public trust to achieve them? The possible existence of such goals presents a second challenge to my argument that scientists ought not be political for the sake of trust in science.

Little is More Important to Science Than Public Trust

Public trust in science has significant *scientific* importance. In the first place, science tends to be externally funded. For example, according to the House of Lords Science and Technology Committee (2019), 62% of research at British universities was publicly funded, 15% was funded by charities, 11% by the European Union, and 4% by businesses. Of total research and development spending in the United Kingdom, only 8% was provided by higher education institutions themselves, according to a House of Commons Library briefing (Panjwani et al., 2023). If the public – and that includes charities and businesses as well as government decisionmakers – doesn't trust science, then scientists will lose 92% of funding. Additionally, the 8% that universities were able to contribute towards their own research came from tuition fees and endowments which, in principle, if there were to be a catastrophic loss of trust in science, would also dwindle or disappear. By contrast, when people perceive science positively, they're more willing to support funding for those scientific domains (Benson-Greenwald et al., 2022). Science is inseparable from society. It's impossible to do science without public support which, in turn, requires the public to trust what science is doing.

Society is integrated with science at the top (outputs) as well as at the bottom (inputs). To do anything with the knowledge produced by science, public trust is required because it acts as the bridge between expert knowledge and public behaviour. For example, when people don't trust biomedical science, they don't comply with public health recommendations such as wearing masks or policies such as lockdown (Algan et al., 2021). Vaccine hesitancy is rooted in distrust of science, government, and pharmaceutical companies (Goldenberg, 2021). During the pandemic, willingness to get vaccinated was closely related to trust in science (Carrieri et al., 2023). To benefit society – which is one of science's goals (de Melo-Martín, 2024) – scientists need the public to trust what they tell them.

So, public trust is important because, without it, science couldn't even function. But what this means is that public trust is only *instrumentally* valuable to science. Ethically speaking, trust in science might be objectively important for a healthy relationship between science and society (Hyde, 2025a). However, restricting ourselves to a methodological discussion about the functioning of science, what scientists care about are the products achieved through trust in science: namely, funding and compliance. These, in turn, allow science to

achieve its wider mission of improving society. What this means is that, if funding and compliance can be secured, then it's fine to lose trust in science. Similarly, if we lose those ends even if science is trusted, then trust in science isn't valuable anymore. Therefore, if involvement of science in politics achieves those goals, even at the expense of trust in science, that political involvement would be scientifically justifiable (i.e. according to the internal logic of science's own purpose).

In fact, it follows that, if there's a risk of losing funding or public compliance with scientific directives, but these can be protected by getting involved in politics, then science ought to do so – assuming that the loss of funding and compliance caused by the loss of public trust is *less* than the gain of these scientific goods achieved by political involvement. This is probably the kind of argument that Nature (2020a) had in mind when opposing the election of Donald Trump (though it's not the one they technically expressed). Its editors and journalists believed that Trump would continue to “damage” science (Tollefson, 2020), by which they meant that scientific directives – such as environmental regulations and public health policy – would no longer be complied with. When Nature (2023) defended their political endorsements, they acknowledged the potential costs of doing so, but emphasized that “inaction has costs, too” and that “this journal judged that silence was not an option” (p. 561). I suppose they believed that any damage Nature would do to trust in science by endorsing a political candidate would be offset by gains in or the protection of scientific funding and compliance should Trump fail to be re-elected.

Of course, Nature lost its gamble because Trump won, the journal hurt its reputation, and evidence suggests that their endorsement had little effect on voting patterns anyway (Zhang, 2023). What would it take for science to win when getting involved in politics? Political involvement only pays off if two things happen: there's a high enough chance that science can actually influence the outcome, and the impact of that influence is significant enough to outweigh any probable damage to trust in science. In short, science wins politically when the likelihood of meaningful success is large enough, and the expected benefits of that success are greater than the expected harm from lost credibility. It's exceedingly hard to calculate that and I hypothesize that such winning scenarios are exceedingly rare. If they exist at all, they probably constitute minor political campaigns with strong influences on policy-makers. I doubt that major political involvement, such as high profile activism, marches and rallies, or endorsing presidential candidates could ever justify getting involved in politics.

Educate the Public or Stay Out of Politics

In this study, I've brought to attention a problem for trust in science that scientists should consider when engaging in politics. Despite claims by editors at Nature (2023) that they think carefully about endorsing political candidates (but end up endorsing a Democrat each cycle anyway), many scientists feel an entitlement to be politically involved and *expect* to be able to do so. Many senior scientists who've advised governments bemoan politicians' unwillingness to listen to them (e.g. Boyd, 2024). In fact, scientists' desperation to be heard by politicians is precisely what led scientific journals to start endorsing political candidates.

Given that political involvement isn't necessary, but poses a significant threat to trust in science, I conclude that, by and large, scientists should stay out of politics. This heuristic is the best we'll get for now. Further tools must be developed to determine when it's worth get-

ting involved in politics (i.e. when losses caused by decrease in public trust are offset by the gain achieved by political involvement). Even more importantly, we must establish a system for making these decisions. Perhaps scientists ought to be referred to a research ethics committee or institutional review board before being allowed to get involved in politics so that the benefits of proposed political involvement can be assessed against the potential loss of public trust in politicized science. But, until such a system is put in place, scientists ought to distinguish between speaking as scientists and speaking as concerned citizens (Tetlock, 1994) – if they're even to get involved in politics at all.

An open question about my conclusion is what qualifies as 'political involvement'. I've deliberately left this vague because it's unclear what the public see as politicization. The empirical evidence we have suggests that endorsements of political candidates and political social media posts decrease trust in science, whereas policy involvement and the making of value judgements doesn't appear to have the same effect. The trust literature often presents contradictory evidence. For example, a study by Claudia Schneider et al. (2022) found that communicating uncertainty decreases trust, while Charlotte Dries et al. (2024) observed that it had the opposite effect. For this reason, I'm not arguing here that any political involvement should be prohibited. What I'm aiming to bring to attention in this study is that scientists and scientific institutions too often neglect the impacts of their actions on public trust in science. As long as we have evidence that political activity might foster distrust, we ought to refrain from it where possible.

Because of the amount of uncertainty in the trust literature, I'm hesitant to offer more than this heuristic. I think a blanket prohibition on social media use, for example, would be very heavy handed and, at present, I'm not sure whether the evidence truly warrants it. I'd personally avoid making political comments on social media and, if I were an editor of *Nature*, wouldn't endorse a political candidate because, in my view, the risks outweigh the rewards. A very risk averse scientist might even avoid voting (because I'm an independent adviser to government, I personally abstain from voting to maintain absolute independence). However, if readers have strong reasons for political involvement and are convinced the benefits outweigh the potential effect on public trust in them and on science as a whole, then I wouldn't (*currently*) go as far as to prohibit them from doing so. If the evidence were to mount, it'd be a different story though.

There is, however, another option for science: namely, educate the public so they don't lose trust in trustworthy science (Hyde, 2025a). As I shew at the start of this study, science isn't necessarily any worse because scientists have political opinions and sometimes get involved in politics. Scientists are citizens too, to which extent they get a vote. People often forget that. They expect science to be perfect and make no mistakes while scientists live in their ivory tower away from the messiness of the real world. Most people, including many scientists, still believe in this 'storybook image' of the scientist (Veldkamp et al., 2017). As long as the public *believes* that politicized science isn't trustworthy, it doesn't matter how trustworthy we make it; they'll never trust it.

The fact of the matter is that, to the average man on the street, science *looks* politically biased. He doesn't have a sophisticated understanding of scientific methodology or standpoint epistemology. From his perspective, he won't put his trust in institutions that seem more interested in politicking than doing the research that they're allegedly paid to do with his tax dollars. If scientists don't want to act the way that *he* expects them to (nor should they have to), then more work needs to be done to educate people to understand what they

can and ought to expect from science (see also Intemann, 2023). Until that work is done, scientists had best stay out of politics. Like Nature (2024), you might think that Donald Trump damaged trust in science, but scientists trying to wade into politics are likely to only make matters worse.

Scientific journals, for one, clearly didn't learn their lesson from the loss of trust they experienced during the pandemic. Both Nature (2024) and Scientific American (2024) dived head first into endorsing Kamala Harris as the 47th President of the United States. Why are we surprised that, when her political opponent won, he started a war on science? When science has spent twenty years positioning itself as an opponent of the Republican Party and paints their leader as Public Enemy No. 1, it seems obvious what would happen when the guy is in power. Will scientists learn their lesson? Or can we expect another Nature editorial come October 2028? Then they'll wonder why trust in science is down again.

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