

Polarisation is not a myth

Political views shape the creation and spread of technology

In 2008, political scientists Alan I. Abramowitz and Kyle L. Saunders wrote the influential paper “Is polarization a myth?” presenting evidence that Democrat and Republican voters were becoming increasingly polarised in outlook. Since then, researchers have documented how Democrats and Republicans are leading increasingly separate lives – not only do they support different parties, but also watch different television programmes (Bertrand and Kamenica, 2023), shop in different places (Ordabayeva, 2018) and even choose different books for their children (Mumma, 2024). Our research shows that this divide extends to a less visible but highly consequential area: the creation of new technologies and the way those technologies spread.

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Red, blue and green inventions

To investigate the influence of polarisation on invention, we put together a new dataset linking US inventors from 2001 to 2023 to voter files from four large, highly innovative states: Florida, New Jersey, New York and Pennsylvania. In the United States, voter registration records often include party affiliation, allowing us to observe inventors’ political affiliation directly. In these four states, inventors are split approximately evenly among Democrats (36%), Republicans (35%) and those who are either unaffiliated or registered with a third party (29%).

We focus on three socially and economically important areas of technology in which partisan disagreement is especially pronounced: climate change mitigation, including cleaner energy and emissions-reducing technologies; women’s reproductive health, including contraception and related health technologies; and weapon-related technologies.

We find that compared with Republican inventors, inventors affiliated with the Democratic party are about one-third more likely to patent green or women’s health technologies, and about one-third less likely to patent weapons and related technologies. These differences closely mirror partisan differences in public opinion on the same issues. For example, a 30% gap between Democrats and Republicans in support for urgent action on climate change corresponds

to about a 30% gap in the likelihood of patenting green technologies.

Inventors’ views matter

To examine how the alignment between inventors’ political affiliation and these polarised technologies might occur, we tested two other explanations.

First, rather than reflecting differences in political opinions, perhaps the gap is due to differences in the skills needed to work on these technologies. Second, rather than choosing to pursue problems aligned with their views, perhaps inventors are working for firms which allocate them to certain projects in politically polarised ways.

We rule out the gaps being due to differences in skill, as we find that the gaps between Democrat and Republican inventors remain among similarly successful inventors. We did this by checking how many people cite an inventor’s patent – a way of measuring success – and splitting the inventors into two groups: those whose number of forward citations is below average and those whose number is above average. We find that the alignment between party affiliation and technology type is the same in both groups – suggesting that the differences in the types of technology worked on are not due to an inventor’s ability.

We also look at how much of the party-technology alignment is due to inventors choosing to work for certain firms. We find

people choosing to work for organisations that reflect their views is an important factor – but even within non-specialised organisations, we still observe an alignment between party and technology. And the alignment also shows up where inventors are likely to have more freedom over what they work on, such as academia and solo-inventor patents. This suggests that inventors are motivated not only by financial returns, but also by whether a technology fits with their views or beliefs. Similar patterns have been documented in other professions: some physicians, for example, decline to provide certain reproductive services even when compensation is available, because they object on moral or religious grounds (Curlin et al, 2007).

The partisan divide in innovation has widened since the early 2000s, a period marked by rising political polarisation. By 2015, the gap between Democratic and Republican inventors had doubled in green technologies and women's health, and widened even more in weapon-related technologies. This increase is driven both by new inventors and by those already active in earlier years, suggesting that the divide reflects both who enters these fields and how inventors shift their work over their careers.

Inventors' party affiliation also shapes how ideas spread. Looking at patent citations – that is, earlier inventions which later inventors build on – we find that Democrats are more likely than Republicans to cite green and women's health technologies, and less likely to cite weapon-related technologies. Part of this may reflect the

fact that people are more likely to interact with others who are politically similar to them. But we find that the content of the technologies matters too: inventors are more likely to build on ideas that align with their views.

Political polarisation is shaping who innovates what

Economists often treat innovation as a response to financial rewards, regulation and market demand. Those forces clearly matter, but they are not the whole story. If inventors also care about whether a technology aligns with their views or political beliefs, then shifts in social and political views may shape innovation not only through shifts in consumer demand, but also through the technologies that inventors are willing to work on. These effects may persist over time, as today's inventions shape the questions that future innovators ask and the ideas they choose to build on. If polarisation changes what gets invented today, it may also influence which kinds of technologies are developed in the future and, with that, who benefits from technological progress.

More broadly, our findings highlight a new channel linking politics and innovation. Recent discussions have focused on the idea that technological change contributes to social and political polarisation. Our findings suggest that the relationship may also run in the other direction. Political polarisation and the evolution of society's views on important issues are not only consequences of technological change; they can also shape which technologies are developed.

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Today's inventions shape the questions that future innovators ask and the ideas they choose to build on



Further reading

Abramowitz, A.I., and Saunders, K.L. (2008) 'Is polarization a myth?', *Journal of Politics*, 70(2), pp. 542–555.

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Curlin, F.A, Lawrence, R.E, Chin, M.H., and Lantos, J.D. (2007) 'Religion, conscience, and controversial clinical practices', *The New England Journal of Medicine*, 356(6).

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