

The influence of political ideology on trust in science

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Abstract

In recent years, some scholars, journalists, and science advocates have promoted broad claims that ‘conservatives distrust science’ or ‘conservatives oppose science’. We argue that such claims may oversimplify in ways that lead to empirical inaccuracies. The Anti-Reflexivity Thesis suggests a more nuanced examination of how political ideology influences views about science. The Anti-Reflexivity Thesis hypothesizes that some sectors of society mobilize to defend the industrial capitalist order from the claims of environmentalists and some environmental scientists that the current economic system causes serious ecological and public health problems. The Anti-Reflexivity Thesis expects that conservatives will report significantly less trust in, and support for, science that identifies environmental and public health impacts of economic production (i.e., impact science) than liberals. It also expects that conservatives will report a similar or greater level of trust in, and support for, science that provides new inventions or innovations for economic production (i.e., production science) than liberals. Analyzing data from a recent survey experiment with 798 adults recruited from the US general public, our results confirm the expectations of the Anti-Reflexivity Thesis. Conservatives report less trust in impact scientists but greater trust in production scientists than their liberal counterparts. We argue that further work that increases the accuracy and depth of our understanding of the relationship between political ideology and views about science is likely crucial for addressing the politicized science-based issues of our age.

Keywords: political ideology, trust in science, production science, impact science

1. Introduction

Recent years have witnessed political polarization on anthropogenic climate change (ACC) in the general publics of the US (Hamilton 2011, Malka *et al* 2009, McCright and Dunlap 2011), Australia (Tranter 2011), the United Kingdom (Poortinga *et al* 2011, Whitmarsh 2011), and a range of other countries around the world (Kvaløy *et al* 2012, Tjernström

and Tietenberg 2008). A growing body of scholarship that examines the crucial relationship between views about science and public understanding of ACC (e.g., Ding *et al* 2011, Hmielowski *et al* 2012, Leiserowitz *et al* 2013, Lewandowsky *et al* 2013, McCright *et al* 2013) signals that closer attention to the association between political ideology and views of science will improve our understanding of public opinion on ACC—and also public opinion on other environmental problems more generally.

At the same time, other scholars note a declining trust in science among conservatives in the US in recent years, arguing that conservatives increasingly oppose the findings



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and cultural legitimacy of science (e.g., Gauchat 2012). Some scholars and science advocates argue that this trend directly relates to the political polarization on ACC discussed above. Their work is known by attention-grabbing titles such as ‘Why Conservatives Turned against Science’ (Conway and Oreskes 2012), *The Republican War on Science* (Mooney 2006), and *The Republican Brain: The Science of Why They Deny Science and Reality* (Mooney 2012). Yet, too often these scholars and observers treat science monolithically—if only because the few survey items measuring views about science on nationally representative datasets (e.g., the General Social Survey) ask about science as an undifferentiated institution.

The Anti-Reflexivity Thesis, which explains the rise in ACC denial on the Right (McCright and Dunlap 2010, 2011, 2012), provides a more nuanced explanation of how political ideology influences views about science. The Anti-Reflexivity Thesis examines how certain sectors of society mobilize to defend the industrial capitalist order from the claims of environmentalists and some environmental scientists that the current economic system causes serious ecological and public health problems. In the process, this theory distinguishes between scientific endeavors in the service of economic production (termed ‘production science’) and those in the service of understanding human impacts on the environment and human health (termed ‘impact’ science) (Schnaiberg 1977, 1980, 1994). The latter type of science regularly provides evidence used to justify governmental regulation of environmentally consequential activities. Thus, the Anti-Reflexivity Thesis suggests that ideological conservatives would increasingly oppose impact science but likely not oppose production science.

This study draws insights from the Anti-Reflexivity Thesis to examine the relationship between political ideology and views about science in a more nuanced fashion than in earlier studies (e.g., Gauchat 2012). Our general research question is: *How do conservatives and liberals vary in their trust in both production science and impact science?* The Anti-Reflexivity Thesis expects that, compared to their liberal counterparts, conservatives report (a) significantly less trust in, and support for, impact science/scientists but (b) a similar level of trust in, and support for, production science/scientists. We analyze data from a recent experiment with 798 adults recruited from the US general public. Our survey experiment manipulated brief messages about science prior to asking a range of questions about trust in scientists, support for the role of science in policy-making, and social, political, and demographic attributes.

2. Anti-reflexivity and conservative attacks on impact science

Reflexive modernization theory (e.g., Beck 1992, Cohen 1997, Giddens 1990, Mol and Spaargaren 2000, see also Rosa *et al* 2013) characterizes the current era of advanced or late modernity as a distinct stage of society, where the modern itself is modernized. Contingency and uncertainty loom, and institutions suffer from legitimacy crises brought on by their inability to effectively solve the ecological and technological

problems of modernization. Reflexive modernization scholars argue that a heightened level of reflexivity is a necessary precondition for getting past our current ecological and technological crises. In this sense, they define reflexivity as a form of critical self-evaluation—a self-confrontation with the unintended and unanticipated consequences of modernity’s industrial capitalist order. They identify two prominent forces of reflexivity: impact science and social movements (Beck 1992, Cohen 1997, Giddens 1990, Mol and Spaargaren 2000, see also Rosa *et al* 2013). Given our purpose here, we focus primarily on the former.

Corresponding to their distinction between primary modernization (the modernization of tradition) and reflexive modernization, these scholars also identify a crucial shift in the institution of science. In the first phase, conceptualized as primary scientization or ‘science as part of the problem’, scientists—largely in the physical and engineering sciences—worked within the industrial capitalist order to invent and innovate products and technologies. As a result, scientists, in such fields as polymer chemistry, nuclear physics, and petroleum geology, were implicated in the creation of many chemical, technological, and ecological risks in our society. In other words, through their participation in industrial capitalist organizations, scientists have contributed to many major problems we now face. In the second phase, reflexive scientization or ‘science as part of the solution’, new fields such as environmental science, technology assessment, and conservation biology have emerged that identify, examine, and attempt to ameliorate the negative effects of earlier scientific endeavors (Beck 1992, Cohen 1997, Giddens 1990, Mol and Spaargaren 2000).

Three decades ago sociologist Schnaiberg (1977, 1980, 1994) offered a similar distinction between two types of science: ‘technological-production’ science and ‘environmental–social impact’ science. Especially after WWII in the US, the dominant mode of science was oriented toward providing knowledge that generated innovative technologies that increased industrial capitalist production. This science in the service of production, or ‘production science’, has expanded the hegemony of economic producers by giving them more control over resources (environment) and people (workers and consumers). However, the decades after WWII also saw the rise of scientific analysis in fields such as ecology, public health, and conservation biology that raised serious concerns about the adverse effects of economic production—and the science and technology that underpins it—on human well-being and ecosystems (as prominently discussed in Rachel Carson’s *Silent Spring*). This ‘impact science’ has challenged the assumption that production science inevitably leads to advancement and progress for society. Indeed, ecologists and conservation biologists have reflected upon this identity for several decades (e.g., Sears 1964, Soulé 1985).

Writing in the late 1970s, Schnaiberg (1977, 1980) identified the numerous ways that production science dominated impact science, with the eventual result that ongoing negative effects of high-technology production were systematically ignored or downplayed. In recent decades the

impact sciences have become increasingly institutionalized, especially in academia and government agencies. Various strands of environmental science in particular have moved from 'frontier' to 'core' scientific standing (Dunlap and Catton 1994), producing knowledge used by environmental policy-makers, organizations, and activists.

Within the United States, recognizing and attempting to deal with major ecological crises has provoked anti-reflexivity, a strident opposition to forces of reflexive modernization (e.g., impact science and the environmental movement) in an attempt to defend the modern industrial capitalist system from challenge. McCright and Dunlap (2010, 2011, 2012) argue that the most prominent manifestation of anti-reflexivity in the US is the mobilization of the conservative movement and fossil fuels industry to deny the reality and seriousness of anthropogenic climate change. A key strategy of ACC denial is 'manufacturing uncertainty', whereby defenders of the industrial capitalist order attempt to undermine or obfuscate public recognition of the scientific knowledge and methods that justify governmental regulation of economic activity (Dunlap and McCright 2011, McCright and Dunlap 2010, Michaels 2008, Oreskes and Conway 2010).

ACC did not give rise to anti-reflexivity and the strategy of manufacturing uncertainty, as the above scholars are quick to point out. Attempts to undermine the legitimacy of impact science have been around for many decades. Yet, the mobilization of the US conservative movement since the late 1980s institutionalized anti-reflexivity in its efforts to promote anti-environmentalism (Jacques 2006, McCright and Dunlap 2003). While the conservative movement has long espoused anti-environmentalism (Switzer 1997), it learned in the early to mid-1980s that direct attacks on environmental regulations and Environmental Protection Agency would generate substantial public and Congressional opposition (Dunlap 1991). By the mid-1990s, the conservative movement had changed its strategy to challenge the seriousness of environmental problems not only by attacking the ideas and actions of environmentalists but also—and more importantly—the impact science providing the basis for environmentalists' claims (Brown 1997).

A catalyst for that wave of the conservative movement's anti-environmentalism was the simultaneous fall of the USSR and rise of international environmentalism and environment policy-making efforts to deal with global environmental problems (signaled by the 1992 Rio Summit). In the early 1990s, the conservative movement substituted the 'green scare' for the disappearing 'red scare' (Jacques 2006, Jacques *et al* 2008)—now armed with the more nuanced strategy of attacking the impact science underlying arguments for governmental regulations.

Observation of the strategies of anti-environmental activists promoted by conservative think tanks since the early 1990s—such as the attorney Fumento, JunkScience.com founder Milloy, and the political scientist Sanera—shows that they regularly employ the derogatory term of 'junk science' when describing impact science (e.g., research on pesticide exposure, environmental carcinogens, and ozone

depletion). These anti-environmental activists routinely deny the evidence of environmental problems by exploiting scientific uncertainties, misinterpreting peer-reviewed research, and selectively presenting data that supports their own counter-claims (Fumento 1996, Milloy 1995, Sanera 1999). Indeed, Herrick and Jamieson (2001) find that political conservatives and other anti-regulatory activists use the term 'junk science' to undermine public support for those areas of science whose findings legitimate calls for governmental regulation.

Recent conservative and Republican attacks on individual climate scientists (Fischer 2010, Hickman 2010, McCright and Dunlap 2010, Piltz 2011, Schneider 2009), state-level environmental science standards (Timmer 2010), and the budgets of different government agencies (e.g., CIA, EPA, NASA, NOAA) (Conathan 2011, Jay 2011, Johnson 2011, Keyes 2011, Sheppard 2011a, 2011b, Washington Times 2011) seem to be motivated specifically to undermine impact science—but not production science. That is, conservative activists and Republican politicians do not seem to regularly attack science that promotes economic production. Instead, they direct their ire at those scientific fields and activities that provide scientific evidence used by journalists, activists, and policy-makers to push for governmental regulations.

The most expansive examination of the relationship between political ideology and views about science in the US general public finds that political polarization on trust in science began in the early 1990s (Gauchat 2012). This time period was also the beginning of significant political polarization on support for environmental protection in the US general public (Dunlap *et al* 2001). It is likely no coincidence that both of these trends began at the same time when the conservative movement ramped up its anti-environmental efforts by attacking the legitimacy of impact science. Yet, the General Social Survey item that Gauchat (2012) analyses—which asks respondents how much confidence they have in 'the scientific community'—is too general for us to know whether liberal and conservative respondents were thinking about the same aspects of the scientific community.

The Anti-Reflexivity Thesis holds that conservatives in the general public are likely to think of impact science when prompted to think about 'the scientific community', as the preponderance of conservative messaging about science for the last two decades has focused on criticizing impact science. Thus, survey questions that contain the generic stimulus of 'science' or 'the scientific community' are not well suited to detect the underlying nature of an ideological divide on trust in and support for science. Findings to date indicate that US conservatives are less supportive than liberals of 'generic' science; however, it may be that while they are less supportive of impact science, they are as or more supportive of production science (see Jacques 2009). To counteract this, we need survey items that measure views about specific types of science or scientists.

In our study, we conducted an experiment to examine how prompting respondents to think specifically about production science or impact science may influence how

Table 1. Descriptive statistics of the study sample. Standard deviation is given in parentheses.

	Sample description
Political ideology (1–7 scale: ‘extremely conservative’ to ‘extremely liberal’)	4.74 (1.46)
Gender (female %)	38.85
Age (1–8 scale: ‘18–19’ to ‘80 or higher’)	2.59 (1.06)
Race (% white)	72.43
Educational attainment (at least bachelor’s degree %)	45.74
Household income (1–5 scale: ‘less than \$25K’ to ‘\$100K and more’)	2.39 (1.23)
Party identification (1–7 scale: ‘strong republican’ to ‘strong democrat’)	4.76 (1.59)
Religiosity (1–9 scale: ‘never attend religious services’ to ‘more than once a week’)	2.69 (2.30)
Religious affiliation	
(% Christian)	40.23
(% non-christian)	9.90
(% non-religious)	49.87

they respond to questions about science in general and about production science and impact science more specifically. Do conservatives report less positive views of all science—impact science *and* production science—than their liberal counterparts?

3. Methodology

We administered a survey experiment via SurveyMonkey to respondents recruited via Amazon Mechanical Turk (MTurk). MTurk is a crowdsourcing website where ‘requesters’ solicit ‘workers’ to perform human intelligence tasks (HITs) for pay. In recent years MTurk has emerged as a practical way for recruiting a large number of respondents for online experiments from a reasonably wide cross-section of the general public—considerably more diverse than the traditional recruitment pool of university undergraduates (Berinsky *et al* 2012, Buhrmester *et al* 2011, Paolacci *et al* 2010). According to Amazon Web Services (2013), MTurk has over 500 000 workers; according to Paolacci *et al* (2010), 47% of them reside in the United States.

To solicit a broad cross-section of research participants and minimize self-selection by MTurk workers highly interested in science, we advertised an MTurk HIT titled ‘Popular Topics in the US Survey’. We limited participation to adults residing in the United States. We paid participants \$0.25 for completing the survey, which took slightly more than four minutes on average. Compared to a representative sample of the US general public, our MTurk sample is more male, more highly educated, less religious, and more liberal/democratic (see table 1). The sample had 825 respondents, and we analyzed the data from the 798 respondents who completed the entire survey.

At the beginning of the survey, respondents read a brief message about science in the United States. Respondents were randomly assigned to one of two conditions that emphasized the benefits of production science or impact science. The beginning of the message stated: ‘Science is important to the United States for a few reasons. Science improves our knowledge of the world. Thus, science helps us make better decisions over time’. The rest of the message varied across the two conditions. The production science message stated: ‘perhaps even more important, science produces new

technologies that: make new products for people to buy, create jobs to increase employment, and drive economic growth. Thus, science is good for our economy’. The impact science message stated: ‘perhaps even more important, science identifies the harmful impacts of technology on: the natural environment, the medical health of individuals, and the well-being of our communities. Thus, science is good for environmental protection and our public health’.

Answers to two comprehension questions demonstrated that respondents accurately comprehended the message. 96.12% of all 798 respondents correctly identified that the message they read implied that scientific knowledge of the world will help us make better decisions over time. Very high percentages of respondents correctly identified that their respective message claimed that science is good for ‘our economy’ (90.67% of respondents in the production science condition) and for ‘environmental protection and public health’ (85.92% of respondents in the impact science condition).

The remainder of the survey contained items we used to create our composite outcome variables and that measured respondents’ social, demographic and political characteristics. Table 2 shows the views about science questions and response options used in the study. We created four composite indices to measure views about science: general trust in scientists, support for scientists’ influence on policy, trust in production scientists, and trust in impact scientists. Table 1 describes the measure of respondents’ political ideology, which—along with the manipulated message—is the main predictor in our models. Table 1 also describes measures of respondents’ demographic and social characteristics that we used as controls in our models: gender, age, race, educational attainment, annual income, party identification, religiosity, and religious affiliation (two dummy variables of ‘Christian’ and ‘non-Christian’ with ‘non-religious’ as the reference category).

4. Results

Table 3 presents the unstandardized coefficients from ordinary least squares regression models predicting the four indicators of views about science. We first answer our main research question about whether conservatives and liberals differ in

Table 2. Measures of dependent variables in the study.

Variable	Survey items	Coded responses
General trust in scientists index (Alpha = 0.80)	‘How much do you distrust or trust scientists to?’ ‘Create knowledge that is unbiased and accurate?’ ‘Create knowledge that is useful?’ ‘Advise government officials on policy?’ ‘Inform the public on important issues?’	1 = completely distrust 2 = partially distrust 3 = neither distrust nor trust 4 = partially trust 5 = completely trust
Support for science in policy index (Alpha = 0.79)	‘Please tell us how much you disagree or agree with the following statements’ ‘Science is too concerned with theory and speculation to be of much use in making concrete government policy decisions that will affect the way we live’ ‘Science is too influenced by the politics of scientists to be of much use in making concrete government policy decisions that will affect the way we live’ ‘Science is too influenced by government funding to be of much use in making concrete government policy decisions that will affect the way we live’	1 = strongly agree 2 = moderately agree 3 = I’m not sure 4 = moderately disagree 5 = strongly disagree
Trust in production scientists index (Alpha = 0.82)	‘Many different kinds of scientists provide information that is used to inform government policy. For each of the following types of scientists, please tell us how much you distrust or trust them to advise elected officials on important science-based policy’ ‘Food scientists who invent new processed food products in their laboratories’ ‘Industrial chemists who create stronger synthetic materials for use in construction’ ‘Petroleum geologists who identify new locations to drill for petroleum’ ‘Polymer chemists who create more durable plastics for use in automobiles’ ‘Agricultural scientists who create new fertilizers to boost agricultural production’ ‘Materials scientists who help us design higher-quality screens for our smart phones’	1 = completely distrust 2 = partially distrust 3 = neither distrust nor trust 4 = partially trust 5 = completely trust
Trust in impact scientists index (Alpha = 0.88)	‘Public health scientists who study the health impacts of new types of processed food’ ‘Epidemiologists who study the health risks of distrust new synthetic chemicals used in housing construction’ ‘Climate scientists who measure the amount of greenhouse gas pollution in the atmosphere’ ‘Wildlife ecologists who investigate how the disposal of human-made plastics affect wildlife habitats’ ‘Oceanographers who research how pollution from agriculture is degrading coral reefs’ ‘Environmental scientists who study the ecological impacts of mining for minerals used in smart phones’	1 = completely distrust 2 = partially distrust 3 = neither distrust nor trust 4 = partially trust 5 = completely trust

their views about production science and impact science. The first and second models, which refer to ‘scientists’ and ‘science’ generically, produce results consistent with conventional wisdom (e.g., Mooney 2006, 2012, Conway and Oreskes 2012) and recent empirical research (Gauchat 2012, Xiao 2013). That is, self-identified conservatives report less trust in scientists in general and less support for the use of science in policy-making than their liberal counterparts.

The Anti-Reflexivity Thesis (McCright and Dunlap 2010, 2011, 2012) expects that conservatives report (a) significantly less trust in impact science/scientists but (b) at least a similar level of trust in production science/scientists compared to their liberal counterparts. The results of the last two models in table 3 support this thesis. Liberals

report much greater trust in scientists engaged in impact science activities than their conservative counterparts, but conservatives actually report greater trust in scientists engaged in production science activities than their liberal counterparts. Thus, consistent with the Anti-Reflexivity Thesis, the ideological divide on views about science seems to be aligned with the distinction between science in the service of economic production and science that provides evidence of harmful environmental and public health impacts of economic production—which is often used to justify governmental regulation of economic markets.

The performance of our social and demographic controls across the four models also deserves attention. Consistent with past research (Evans 2012, Freeman and Houston 2011,

Table 3. Unstandardized coefficients from ordinary least squares regression models predicting four views about science ($N = 798$). (Note: standard errors in parentheses.)

	General trust in scientists index	Support for science in policy index	Trust in production scientists index	Trust in impact scientists index
Message condition (impact science = 1)	0.07 (0.05)	0.01 (0.07)	-0.04 (0.05)	0.01 (0.05)
Political ideology	0.09 ^a (0.03)	0.14 ^b (0.04)	-0.07 ^c (0.03)	0.13 ^a (0.03)
Gender (female = 1)	-0.11 ^c (0.05)	0.09 (0.08)	-0.27 ^a (0.05)	-0.01 (0.05)
Age	0.01 (0.02)	0.02 (0.04)	-0.04 (0.03)	-0.03 (0.02)
Race (white = 1)	0.05 (0.05)	0.18 ^c (0.08)	-0.04 (0.06)	-0.02 (0.06)
Educational attainment	0.01 (0.02)	0.07 ^c (0.04)	0.03 (0.02)	0.03 (0.02)
Household income	0.01 (0.02)	0.03 (0.03)	0.01 (0.02)	0.01 (0.02)
Party identification	0.03 (0.02)	0.10 ^b (0.04)	0.05 (0.03)	0.05 ^c (0.02)
Religiosity	-0.01 (0.01)	-0.02 (0.02)	-0.00 (0.01)	-0.01 (0.01)
Christian	-0.24 ^a (0.06)	-0.32 ^b (0.10)	-0.21 ^b (0.07)	-0.24 ^a (0.07)
Non-christian	-0.13 (0.06)	-0.07 (0.13)	-0.20 ^c (0.09)	-0.22 ^b (0.09)
R^2	0.13	0.15	0.06	0.19

^a $p < 0.001$. ^b $p < 0.01$. ^c $p < 0.05$.

Gauchat 2008), Christians report less trust in scientists in general, less trust in both production scientists and impact scientists, and less support for science to be used in policy-making than non-religious respondents. Further, compared to non-religious respondents, non-Christians report less trust in both production and impact scientists. Consistent with past research (Blocker and Eckberg 1997, Fox and Firebaugh 1992), men report greater trust in scientists in general and in production scientists more specifically. Not surprisingly, self-identified Democrats report greater trust in impact scientists and greater support for the use of science in policy-making than their Republican counterparts. Whites and the more highly educated report greater support for the use of science in policy-making than their non-white and less educated counterparts. Finally, age, income, and religiosity have no influence on views about science.

It is clear that the messages highlighting the benefits of production science or impact science did not influence citizens' views of science. In other words, emphasizing the benefit of science to the environment and public health versus the benefit of science to the economy did not influence respondents' trust in scientists in general, trust in production scientists, trust in impact scientists, or support for the role of science in policy-making. In additional analyzes, we tested for 'message * ideology' interaction effects but found none.

That our experimental messages failed to produce an effect is not surprising given that changing people's views on polarized issues is quite difficult (Nyhan and Reifler 2010). Two likely explanations demand discussion. First, our brief experimental messages simply might have been inadequate to produce an effect. The messages likely were not sufficiently provocative, in that they merely described

benefits of one of the two types of science—but stopped short of clearly normative prescriptions. It could be that most citizens have come to accept these respective roles, regardless of whether or not they are supportive of them. Longer, more in-depth messages with supportive evidence and illustrative examples—and possibly with a normative frame—might have been more likely to produce an effect. Second, citizens' views about science—which are highly politically polarized (Gauchat 2012)—may simply be resistant to most attempts at manipulation, as are citizens' views about the politically polarized issue of ACC (Hart and Nisbet 2011, Lockwood 2011, Spence and Pidgeon 2010, Villar and Krosnick 2011). That is, few or no alternatively framed messages may influence people's views about science, because they are especially resistant to manipulation.

5. Conclusion

Our study examined the relationship between political ideology and views about science in a more nuanced fashion than in earlier studies (e.g., Gauchat 2012). When survey questions generically referred to 'scientists' or 'science', conservatives reported less trust in scientists in general and less support for the use of science in policy-making than their liberal counterparts. Such results seem to confirm the conventional wisdom that conservatives distrust or oppose science (Mooney 2006, 2012, Conway and Oreskes 2012). Yet, the results of other models challenge this conventional wisdom. Consistent with the expectations of the Anti-Reflexivity Thesis (McCright and Dunlap 2010, 2011, 2012), conservatives report much less trust in impact scientists

but *greater* trust in production scientists than their liberal counterparts.

These results come from a convenience sample of the US general public. For greater confidence in these findings, future work should replicate this study using a nationally representative sample of the general public. Nevertheless, these results suggest that scholars, observers, and science advocates ought to refrain from making broad claims that ‘conservatives distrust science’ or ‘conservatives oppose science’. Such claims are too simplistic and can be empirically inaccurate. Indeed, our analysis indicates that conservatives may trust or support some areas of science more than do their liberal counterparts. Measures of overall trust in science may underestimate the ideological divide with regard to some types of science and underestimate it for other types. Continuing to promote such overgeneralizations will likely not help reduce the political divide on serious science-based ecological, public health, and technological problems. Rather, it may stoke further miscommunication across the political spectrum in a way that crystallizes the divide.

Scholars can assist science advocates interested in promoting scientific literacy and citizens interested in addressing some of the most pressing problems of our day by improving our understanding of the causes of distrust and opposition to different scientific activities—and by extension at least some of the opposition to dealing with such problems. Much research on public scientific and technical controversies finds that what often appears at first glance to be a conflict over science is more accurately defined as a conflict over competing values (Mazur 1981, Nelkin 1984, McCright 2007). Our study here supports this finding. We find that political ideology aligns closely—but not perfectly—along a fault line between views defending the current economic order and views promoting reform of the current economic order to protect environmental and human health. Future research might test the effectiveness of different frames that might increase conservative support for impact science (see Feinberg and Willer 2013).

Further work that increases the accuracy and depth of our understanding of the relationship between political ideology and views about science is likely crucial for addressing the politicized science-based issues of our age (nuclear energy, genetically modified organisms, anthropogenic climate change, and vaccines—to name a few). By more accurately identifying the underlying nature of public conflict on such science-based issues, stakeholders may place conflicting views directly in the public eye. Doing so may facilitate an honest public discussion about these competing views, decreasing the likelihood that they will invade and distort discussions of science (Dietz 2013).

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