



Governing for Future Generations: How Political Trust Shapes Attitudes Towards Climate and Debt Policies

Malcolm Fairbrother^{1,2,3*}, Gustaf Arrhenius^{1,4}, Krister Bykvist^{1,4} and Tim Campbell¹

¹Institute for Futures Studies, Stockholm, Sweden, ²Department of Sociology, Umeå University, Umeå, Sweden, ³Department of Sociology, University of Graz, Graz, Austria, ⁴Department of Philosophy, Stockholm University, Stockholm, Sweden

Policy decisions, and public preferences about them, often entail judgements about costs people should be willing to pay for the benefit of future generations. Economic analyses discount policies' future benefits based on expectations about increasing standards of living, while empirical studies in psychology have found future-oriented people are more motivated to protect the environment. In this article, using original surveys and survey experiments in four countries—Sweden, Spain, South Korea, and China—we show that support for future-oriented policies also strongly reflects people's political trust. Focusing on policies for reducing either global warming or public debt, we find political trust operates on attitudes by shaping people's (a) confidence in policies' effectiveness and (b) willingness to sacrifice for others. The influence of political trust outweighs that of subjective concern, while discounting has so little impact that people who expect future generations to be richer are more, not less, willing to sacrifice.

OPEN ACCESS

Edited by:

Sonja Zmerli,

Université Grenoble Alpes, France

Reviewed by:

Chong-Min Park,

Korea University, South Korea

Robert A Huber,

University of Salzburg, Austria

*Correspondence:

Malcolm Fairbrother

malcolm.fairbrother@umu.se

Specialty section:

This article was submitted to

Political Participation,

a section of the journal

Frontiers in Political Science

Received: 20 January 2021

Accepted: 22 April 2021

Published: 11 May 2021

Citation:

Fairbrother M, Arrhenius G, Bykvist K and Campbell T (2021) Governing for Future Generations: How Political Trust Shapes Attitudes Towards Climate and Debt Policies.

Front. Polit. Sci. 3:656053.

doi: 10.3389/fpos.2021.656053

Keywords: political trust, future generations, climate change, national debt, public opinion, intergenerational justice, discounting

INTRODUCTION

This article aims to test the mechanisms by which political trust theoretically shapes policy attitudes, and to assess how strongly political trust, relative to other key factors, influences people's support for policies meant to benefit future generations. We call such policies "future-oriented" for shorthand. Prior studies have shown that people's trust in political institutions shapes support for many policies, but, with the exception of Jacobs and Matthews (2012), no prior studies have examined political trust's impacts specifically on attitudes toward future-oriented policies. Such attitudes represent a useful empirical focus, and a highly theoretically relevant one, given the literature's view that political trust "represents an expression of citizens' willingness to accept government promises about the future consequences of a policy" (Rudolph, 2017: 200, emphasis added).

The consequences of political trust have been less studied than its foundations (Van der Meer, 2017; Van der Meer and Zmerli, 2017). The literature highlights the benefits of a more politically trusting citizenry, though it also suggests some distrust is healthy for democracy (Bertsou, 2019). Our results show how problematic a lack of trust may be for the ability of governments to address some of the most pressing challenges confronting humanity. As Citrin and Stoker (2018) put it, "widespread political mistrust makes it harder for governments to get anything done."

Despite the importance of political trust, prior studies have yet to clarify precisely *how* it shapes policy attitudes. Our paper tests two key mechanisms by which, according to the main theoretical perspective in the literature—the "trust-as-heuristic" perspective—political trust operates (Hetherington and Husser, 2012; Rudolph, 2017). Those mechanisms are: (a) people's

confidence in policies' effectiveness, and (b) their willingness to sacrifice for others. One implication of this perspective is that trusting individuals support policies primarily because they believe these policies will work, and they are less bothered about exactly *who* benefits from a policy than whether *anyone* does. Another implication is that more trusting individuals should be more optimistic about future living standards. This expectation, however, challenges a second possible theory of public attitudes toward future-oriented policies: that laypeople *discount* future costs and benefits in the same way as policy and economic analyses. Such analyses quantify the sacrifice prior generations should make for those who come after them, using a discount rate based on expected future changes in living standards (see UNDP, 2007/2008; Greaves, 2017). The rationale for this is that, on fairness and efficiency grounds, the richer future generations will be, the less we should sacrifice our living standards for theirs—and the weaker our duty to enact policies embodying such a sacrifice. So if laypeople discount the way economists do, and if trusting individuals are indeed more optimistic about future standards of living, then political trust should be associated with *less* willingness to sacrifice for future generations—precisely the opposite of what the political trust literature predicts.

We also assess how strongly political trust shapes attitudes toward future-oriented policies relative to another potentially important influence: a person's overall future orientation, subjective concern for future generations, and/or associated moral sentiments (e.g., Milfont et al., 2012; Carmi and Arnon, 2014; Barnett et al., 2019). According to studies emphasizing this perspective, support for future-oriented policies should reflect the general value that people ascribe to generations, and any altruistic sense of duty they feel to sacrifice for those who come after them.

Empirically, this article reports results from original surveys and survey experiments in Sweden, Spain, South Korea, and China. The surveys focused on attitudes toward policies for reducing either global warming or public debt. We first compare the impact of political trust with that of generalized concern for future generations, weighing these factors' relative roles in shaping public attitudes toward future-oriented policies. Second, we test the two mechanisms by which political trust theoretically shapes attitudes toward any public policies. Third, we assess whether more optimistic individuals are more or less willing to sacrifice, and more or less supportive of policies of reducing either climate change or debt.

To preview our main results, first, respondents who reported being more concerned about future generations were more supportive of policies for reducing either global warming or national debt. But respondents who reported more political trust were even more supportive.¹ Second, consistent with theory, we found politically trusting respondents were more willing to sacrifice and more confident that future-oriented policies would work, and individuals who were either more

willing or more confident were more supportive of future-oriented policies. Third, respondents with higher political trust were more optimistic about future living standards, and optimists were more—not less—supportive of future-oriented policies. Our results therefore suggest that attitudes toward future-oriented policies reflect people's political trust more strongly than their subjective concerns about future generations, and that discounting plays little role in most laypeople's thinking.

CONTEXT AND MOTIVATION

In this section, we review prior studies of people's concern for future generations, and of public support for future-oriented policies. We discuss reasons to expect political trust to be an important influence on support, and the more general issue that, while prior studies have documented the impacts of political trust on attitudes toward various policies, the literature has barely assessed the major theory of *how* political trust has such impacts. We therefore articulate that theory and the two mechanisms it emphasizes. Finally, we explain why the impact of political trust on attitudes toward future-oriented policies can be further assessed by measuring people's optimism about future living standards, with optimism strongly tied to the economic concept of discounting.

Public Concern for Future Generations

Philosophers and welfare economists argue that people alive today are morally obliged to give weight to the well-being of future generations, and to respect their rights (Kolstad et al., 2014; Caney, 2018). This includes being willing to make some sacrifice for the benefit of future generations (Parfit, 1984; Arrhenius, 2000; Arrhenius, 2020). But while moral philosophers and economists ascribe substantial value to future lives, it seems that laypeople may not. Judging by governments' indebtedness and societies' failure to tackle the problem of global climate change, for example, it appears possible that many people are indifferent to the well-being of future generations, and that policymakers are taking decisions accordingly.

At least some research, however, suggests otherwise. A number of studies (particularly in psychology) have found evidence that many people do care about future generations (see Wade-Benzoni and Plunkett Tost, 2009; Graham et al., 2017). Given their future time perspectives and/or their levels of altruism, many people for example value the health of the natural environment that future generations will inherit (Milfont et al., 2012). This emphasis on the importance of subjective concern for future generations is consistent with psychological literature emphasizing altruistic values as the very foundation of people's environmental commitments, including support for environmental policies (Stern et al., 1999). From this perspective, environmental attitudes and behaviours depend on moral intuitions, how other-oriented a given person is, and/or how willing they are to sacrifice for the benefit of other people—including socially, spatially, and/or temporally distant people—and/or non-human species (Markowitz and Shariff, 2012; Dietz et al., 2020; Kennard, 2020).

¹We refer to "global warming" and "climate change" interchangeably. We used the former phrase in our survey, in order to maximize the linguistic parallel between either "policies to reduce global warming" or "policies to reduce the national debt."

Political Trust

An unwillingness to support some future-oriented policy may not, however, be proof that someone is unconcerned about future generations. Another possibility is that people are unconvinced future-oriented policies will actually yield the benefits their advocates promise. Policies might fail, for example, if policymakers and/or public administrators are corrupt or incompetent. And if people doubt that a policy for which they themselves will have to pay an immediate price will actually benefit future generations, they may understandably oppose it.

Uncertainty about whether the state will deliver what it promises, and doubts about policies' likely future benefits, have previously been shown to undermine public support for policies oriented to long-term outcomes (Jacobs and Matthews, 2012; Jacobs, 2016). More generally, for people to support any kind of policy proposal, they "must trust the government to think its programs will produce societal benefits and not waste resources" (Hetherington and Husser, 2012: 313). That is, laypeople's views of policy proposals likely reflect their political trust—their willingness to accept vulnerability to policymakers and/or public agencies, including in the absence of continual scrutiny, based on perceptions of their honesty, integrity, and competence (McKnight and Chervany, 2001; Sønderskov and Dinesen, 2016; Hamm et al., 2019). People who mistrust governmental institutions—i.e., believing they (or the office-holders within them) are dishonest, corrupt, and/or incompetent—will doubt that their government can or will design and/or implement policies in societally beneficial ways. They may fear that political authorities will seize or waste public funds, rather than use them for an official, stated, and/or socially desirable purpose (Barnes, 2015).

But how exactly do levels of political trust shape attitudes toward public policies? The dominant theory in the literature points to two key mechanisms by which political trust operates. Despite articulating these two pathways, however, the literature has not yet subjected them to strong empirical testing. Next, then, we briefly specify these two mechanisms, drawing on the perspective that political trust operates as a heuristic: people trust policy proposals insofar as they trust the proposers (Hetherington, 2005; Rudolph, 2017).

Confidence in Policies' Effectiveness

The literature suggests that political trust influences policy support, first, by giving individuals confidence in policies' effectiveness. That is, politically trusting individuals tend to believe that policies will actually yield the future benefits that their advocates claim they will. As such, trust "represents an expression of citizens' willingness to accept government promises about the future consequences of a policy" (Rudolph, 2017: 200; see also; Hetherington and Husser, 2012; Jacobs and Matthews, 2012). Trust mitigates perceptions that policies represent a risk, in the sense that political and/or administrative elites might—whether because of intentional malfeasance or simple incompetence—waste public resources.

Willingness to Sacrifice for Others

Second, the theory further specifies that political trust is consequential specifically for attitudes toward policies that demand a sacrifice (Rudolph and Evans, 2005). For example

political trust will strongly shape the attitudes of an individual being asked "to give money or to pay taxes in order to ... benefit social groups to which that individual does not belong" (Rudolph, 2017: 201). By implication, the theory suggests that political trust makes individuals less concerned about getting benefits themselves than about whether a policy will have benefits for *someone* (presumably other than politicians and bureaucrats). Even though individuals know that they themselves will not benefit, they may be willing to pay a price, if they are confident in the mechanism.

Though we have presented confidence and willingness as independent pathways linking political trust to policy support, another possibility—arguably consistent with the theory that political trust operates as a heuristic—is that they operate sequentially. In other words, potentially trust leads to confidence, confidence to willingness, and willingness to policy support. In our empirical analysis, we therefore tested for this possibility also.

Two Future-Oriented Policies

In our surveys, which we describe in more detail below, we asked respondents questions about policies for reducing either global warming or their country's national debt. We suggested explicitly that both types of policy would entail sacrifices for people alive today, but could benefit future generations. Next we therefore discuss some key features of these two types of policy, and of attitudes toward them.

Climate Change Mitigation

Climate change is a massively intergenerational issue. While people alive today are already paying a price for it (in the form of floods, fires, droughts, etc.), the price will be even higher for people who are not yet born. Conversely, future generations will reap the greatest benefits of any efforts by current generations to reduce greenhouse gas emissions (UNDP, 2007/2008). That those who will lose out from pollution "do not yet exist ... and so are not here to defend themselves" (Boyce, 1994: 169) is one of the most fundamental reasons why environmental degradation occurs at all. Anthropogenic climate change, like other environmental harms, thus represents an intergenerational dilemma, in which the interests of different generations are inconsistent (Milfont et al., 2012).

Previous studies have shown that support for specific climate and environmental policies, especially pollution taxes, reflects political trust (Klenert et al., 2018; Fairbrother et al., 2019; Davidovic and Harring, 2020; Kulin and Johansson Sevä, 2020). Most studies are based on observational data, but Fairbrother (2019) used a survey experiment to provide stronger evidence of a causal relationship. Our investigation of attitudes toward climate policies builds on these studies.

Debt Reduction

Like economic activities that emit greenhouse gases, the accumulation of public debt generally represents a transfer of well-being from future to present generations (Labonte and Makinen, 2008). Older/prior generations accumulate debt from consumption benefiting themselves, for which younger/subsequent generations must pay. That said, not all debt is necessarily a burden, as it can help finance investments that

will benefit future generations. Nevertheless, public debt can generally be understood as a burden on future generations, raising similar distributional questions as climate change, and policies for debt reduction can be taken as beneficial for future generations.

An important difference between climate change and debt reduction policies, for our purposes, is that in many countries the former are more popular among individuals on the political left, while the latter are somewhat more supported by the right (e.g., Kohut, 2012; Bremer and Bürgisser, 2021). Also importantly, attitudes toward policies for reducing public debt have no direct relationship with beliefs about global warming, or about other environmental problems or issues. Potentially, politically conservative individuals, who would prefer less governmental activity (e.g., social spending) and intervention in markets, may be more keen to reduce public debt. On the other hand, their aversion to state regulatory actions may them more hostile to policies for reducing climate change (Campbell and Kay, 2014; Kahan et al., 2015). Some public opposition to climate policy actions is also due to doubts that climate change is real, anthropogenic, and/or dangerous, though surveys show climate sceptics are in the minority, and their numbers are shrinking (Steg, 2018; Leiserowitz et al., 2019). In our empirical study, our comparison of attitudes toward either debt or climate allows us to test whether our results are particular to either issue.

Discounting

Insofar as future-oriented policy decisions embody some weighting of future generations' welfare against that of people alive today, the most influential advice scholars have provided about how to strike an appropriate balance has been by reference to *discounting* (see Greaves, 2017). Discounting is the ascription of lower value to benefits (or costs) the further off in the future they will be enjoyed (or paid). The discount *rate* (such as the 1.3% per year adopted in the well-known Stern Review of the economics of climate change) makes a substantial difference in policy analyses attempting to allocate costs and benefits across generations in a fair way (Keeler et al., 2016). The choice of discount rate in turn reflects expectations about different generations' relative standards of living (Dasgupta, 2008).² Insofar as similar principles of fairness apply among as within generations, and so it would be unfair to expect the poor to pay more than the rich, economists' expectation that future generations will have higher incomes than us has major implications for what policies we ought to choose (Broome, 2008). Though discounting is a technical concept of economists, expectations about the incomes of future generations might similarly influence laypeople's support for future-oriented policies. It is not clear though that laypeople share economists' confidence that future generations will enjoy higher standards of living and correspondingly better lives. Many Europeans and Americans, for example, think society is changing for the worse (Steenvoorden and

Van der Meer, 2017; Parker et al., 2019), and as we show below this includes living standards.

The logic of discounting, then, is that the more optimistic a person is about future living standards—i.e., the more they expect incomes to rise—the more they should discount the future. And the more they discount the future, the weaker the duty they should believe current generations have to enact costly future-oriented policies. If laypeople think like economists, the optimists among them should be less supportive of future-oriented policies.

Optimism

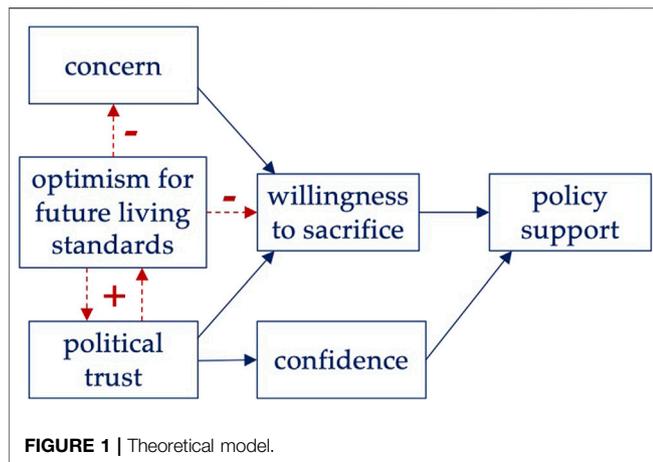
This expectation, however, runs directly contrary to that implied by the political trust literature. According to this literature, as explained earlier, the more politically trusting an individual, the more confident they should be that future-oriented policies will work. That confidence gives them reason to support policy actions, and also gives them reason to expect rising standards of living. In a sense this is a self-fulfilling prophecy: as Jacobs and Matthews (2012: 933) argue, trusting societies should experience more economic growth, since “greater levels of public trust ought to lend officeholders greater temporal room for manoeuvre, allowing them to impose a larger sacrifice on constituents today in order to generate longer-run social gains.” One of the studies that has had the greatest impact in validating the importance of trust is (Knack and Keefer, 1997), which argued specifically that trust fosters greater economic growth, and is greater in countries with better (more trustworthy) institutions. By this logic, being politically trusting should make individuals more optimistic about future standards of living.³

Implications

In light of all of the above, the full theoretical model we test appears in **Figure 1**. The solid arrows represent theoretical expectations from the literature. Specifically, political trust should shape policy attitudes by influencing people's (a) willingness to sacrifice and (b) confidence that policies will be effective. Willingness should also depend on concern, and function as the key mechanism by which concern shapes policy support. **Figure 1** also shows how theory provides contradictory and/or weaker expectations about various potential relationships between optimism and other variables (represented with dashed arrows). Optimism might be a consequence of trust (or a cause, or even a part of trust). Alternatively, optimism could be a negative influence on willingness—directly and/or via concern. The important empirical question is whether optimism correlates positively or negatively with willingness and support. A positive correlation will demonstrate the importance of trust for policy attitudes, and suggest a spurious relationship between optimism and willingness

²Aside from expectations about future changes in consumption, discount rates may also reflect a “pure rate of time preference.” As this is effectively just impatience, most economists and ethicists do not consider it a very strong reason to impose costs on future generations.

³The literature also suggests trust may be a consequence of optimism (e.g., Mishler and Rose, 2001). Albeit with respect to social rather than political trust, Uslaner, 2005: 77) for example argues that trust “is based upon an optimistic view of the world. Trusters believe that the world is a good place, will continue to get better, and that they can make it better.”



to sacrifice.⁴ If optimism is negatively correlated with willingness and support, on the other hand, that will suggest discounting plays a more important role in laypeople's thinking.⁵

MATERIALS AND METHODS

Research Design

We conducted original surveys and survey experiments in 2019 in Sweden, Spain, South Korea, and China. The surveys asked respondents about their concern for future generations (how much they think and care); their willingness to sacrifice for the sake of future generations; and their support for policies that would impose a cost in the present but benefit people in the future. We randomly assigned respondents to receive one of several different potential questions about either climate or debt policies. As we explain below, this randomization allowed us to compare attitudes toward either type of policy, and relative levels of support for different instruments. Nonetheless, our key results are observational rather than experimental.

Our empirical analysis proceeds in three main steps.

First, we assess the roles of concern and trust in shaping support for policies framed explicitly as a cost to present generations and a benefit to people in the future. Respondents received a question either about global warming or public debt, with some versions making no reference to any specific instrument and others referring specifically to taxation, technology (for climate change), or spending cuts (for debt). We model respondents' policy support, treating their levels of concern for future people and their political trust as independent predictors. We compare the relative weights of these two

predictors, including when controlling for background demographics, and we assess differences in the responses to questions about different types of policies.

Second, we examine the two mechanisms that, theory suggests, lead political trust to shape policy attitudes: confidence in policies' effectiveness and willingness to sacrifice. We test that each one correlates with political trust, and also predicts policy support. We compare confidence in different policies, and we also use a simple experiment to assess whether respondents doubt their government's ability to design an effective policy for reducing global warming or national debt. We do so by randomly assigning respondents to receive a question about the likely benefits to future generations of either *actually reduced* warming/debt, or of only an *announcement* that their government will enact (unspecified) new policies with the aim of achieving such reductions.

Third, we assess whether respondents' willingness to sacrifice for the sake of future generations, and their support for future-oriented policies, reflect more their concern about future generations or their confidence in the effectiveness of such sacrifices/policies. We do so by testing for a negative or positive correlation between willingness/support and respondents' expectations about future standards of living. The logic behind this test is that people who are more optimistic about future living standards could be either less or more willing to sacrifice, as explained earlier. If willingness and policy support mostly reflect concern, and a logic of discounting, they will correlate negatively with expected future living standards. If willingness and support mostly reflect a sense of efficacy and confidence in the functioning of future-oriented policies, the correlation will be positive.

Samples

We conducted our study in four countries, in two culturally distinct world regions: Sweden, Spain, South Korea, and China. In choosing these four countries, our aim was not to test any hypotheses about cross-national differences, but to check the consistency of our study's results across a diverse (albeit small) set of countries. Insofar as the results in different countries are similar, we have more reason to be confident about their robustness; in a sense the logic is of a most different systems design.⁶ We selected these four specific countries because, based on prior polls and studies, we expected them to have variable levels of political trust (high in Sweden and China, and low in Spain and South Korea), and different levels of optimism about the future (higher in the Asian countries than the European countries).

The surveys were fielded by the international firm Ipsos MORI. Achieved N's were: 1084 in Sweden; 1298 in Spain; 1176 in South Korea; and 1165 in China. Background demographic variables were: gender; age in years; household income; education (dichotomized as post-secondary or not); and a binary variable for the presence of one or more children in the household. **Table 1** presents country means for the

⁴That is true irrespective of whether optimism is a cause of consequence of trust: as **Figure 1** shows, trust may shape both optimism and support/willingness, or optimism may influence support and willingness *via* trust.

⁵To be clear, we do not see public attitudes as the only important determinant of policy. With respect to climate change, for example, lobbying by organized interest groups, such as fossil fuel corporations and industries, has also had a big impact (Brulle, 2014). Public attitudes are, in part, an intended product of interest groups' campaigns, given public opinion's political importance (Manza and Brooks, 2012).

⁶We thank an anonymous *Frontiers* reviewer for suggesting this formulation.

TABLE 1 | Country means of all variables.

	Sweden	Spain	S Korea	China
Age	40.86	41.67	36.98	33.95
Male	0.49	0.50	0.56	0.50
Post-sec. Educ.	0.50	0.58	0.70	0.86
Income	4.97	6.91	5.52	16.10
Child in House.	0.57	0.59	0.56	0.82
Think	1.44	1.38	1.79	2.63
Care	5.83	6.55	4.59	7.95
Willing	4.98	5.19	4.10	6.35
Support	5.16	5.43	5.47	7.43
Confidence	4.43	5.09	5.09	6.92
Optimism	1.84	1.74	2.43	3.04
Political trust	4.52	4.31	3.02	7.58
Concern	2.61	2.59	2.76	4.50

variables we use in the analysis; full descriptive statistics appear in **Supplementary Table S1** in the Supplementary Materials.⁷ The samples are not perfectly representative of the national populations. Respondents came from online panels, such that we only have data on individuals with internet access, and the samples differ according to variable levels of internet penetration in the four countries. The age ranges they cover also differ: for Sweden and Spain the samples spanned ages 16–65; for South Korea 18–54; and for China 18–50. All four national samples included disproportionate numbers of respondents with a post-secondary education (50% in Sweden, 58% in Spain, 70% in South Korea, and 86% in China). Given all these properties of the samples, then, we do not emphasize cross-national differences in the average responses to different questions.

Survey Questions

As the topics addressed in our questions were likely to be unfamiliar and potentially abstract for many respondents, we arranged them in as accessible a sequence as possible (See the Supplementary Materials for the full questionnaire, which also included some questions we do not use here.). We began by telling respondents: “The next few questions are about how the decisions we make in society today could affect the lives of people who are not even born yet.”

To measure people’s concerns about future generations, we then asked two questions. First: “How often would you say you think about the lives of future people who have not even been born yet?” Respondents could answer on a five-point scale from “Never or almost never” to “Very often.” Second: “On a scale from 0 to 10, how much would you say you care or do not care about the future quality of life of people who have not even been born yet? 0 means you do not care at all, 10 means you care a great deal.”

Next, as a measure of people’s willingness to sacrifice for the sake of future generations, we asked to what extent respondents would “be willing or not to reduce [their] standard of living, so

that people in the future can lead better lives” (on a 0–10 scale from not at all willing to completely willing). We then investigated people’s support for one randomly selected government action, framed as something that could be done for the benefit of “people in the future, though it would have costs in the shorter term for people alive today.” These actions were either “policies to reduce global warming” or “policies to reduce the national debt.” Some respondents, furthermore, received versions of these questions specifically saying the goal of reducing warming or debt would be achieved “by increasing taxes”; “by paying for more research on new technologies” (in the case of global warming only); or “by cutting spending” (for national debt only). Respondents reported their support on a 0–10 scale, from “not support at all” to “completely support.” We used the random assignment here to investigate the difference between respondents’ views of “policies” generically and specific policies which experts generally think could help but laypeople might not.

Next, we asked about respondents’ belief in policies’ effectiveness. On a 0–10 scale, from “not confident at all” to “completely confident,” we asked respondents how confident they were that the lives of future generations would be improved if the government succeeded in reducing either global warming or the national debt—or, alternatively, if the government *said* it was introducing policies to achieve these ends. We randomly assigned respondents to hear a question either about *actual, achieved reductions* in global warming or the national debt, versus just statements of policies being introduced. This manipulation allowed us to measure the impact of people’s distrust in government claims and/or their intention and ability to achieve what they say they will achieve. Respondents received one of the four questions about global warming if and only if they had previously answered a question about support for global warming policies, and one of the four questions about debt if and only if they had previously answered a question about debt reduction policies. Respondents were therefore tracked only to receive questions about global warming (and none about debt), or only question questions about debt (and none about warming).

We then asked, as a measure of optimism about the future, how respondents think “most people’s standards of living will probably change compared to today”—on a five-point scale from “Get much lower” to “Get much higher.” Finally, we asked about people’s trust (on a scale of 0–10) in each of four political and social institutions: university research centres, the news media, business and industry, and the national parliament or congress. In the analyses below, we only use answers to the question about parliament/congress, though responses to the four questions were positively correlated in all four countries, and we get substantively similar results if we use a four-item index.⁸ Political trust may depend on whether a respondent’s

⁷Four of the five demographic variables have substantive and roughly internationally comparable meanings, but income does not, as it is coded differently by country. We therefore include income in standardized form in all models (centered at zero, with a standard deviation of 1).

⁸Cronbach’s alpha was 0.72 or higher for each country. Trust was highest in university research centers in all countries but China (where the congress was the most trusted institution). Levels of trust were similar across the other institutions in Sweden and Spain, while in South Korea the national assembly was the least trusted institution by far.

TABLE 2 | Support for future-oriented policies.

Model		1	2	3	4	5
Demographics	Age	-0.01** (0.00)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)
	Male	-0.07 (0.08)	-0.01 (0.07)	-0.05 (0.11)	-0.01 (0.09)	-0.01 (0.07)
	Education	0.22** (0.09)	0.13 (0.08)	0.20 (0.13)	0.08 (0.10)	0.13 (0.08)
	Income	0.14** (0.04)	0.11** (0.04)	0.09 (0.06)	0.11* (0.05)	0.10* (0.04)
	Child in household	0.26** (0.05)	0.12** (0.04)	0.09 (0.07)	0.16** (0.05)	0.12** (0.04)
Policies	Global Warming	0.67** (0.09)	0.68** (0.09)			0.68** (0.09)
	Tax	-0.78** (0.09)	-0.80** (0.09)	-0.96** (0.13)	-0.67** (0.11)	-0.80** (0.09)
	Tech	0.07 (0.13)	0.02 (0.12)	-0.06 (0.13)		0.01 (0.12)
	Cuts	-0.39** (0.12)	-0.42** (0.11)		-0.35** (0.11)	-0.42** (0.11)
Attitude	Concern		0.52** (0.04)	0.45** (0.06)	0.58** (0.05)	0.53** (0.04)
	Political Trust		0.71** (0.04)	0.67** (0.06)	0.74** (0.05)	0.71** (0.04)
	Concern x Trust					0.07* (0.03)
Country	Spain	0.34* (0.11)	0.33** (0.10)	0.72** (0.15)	0.02 (0.14)	0.33** (0.10)
	S Korea	0.33** (0.11)	0.39** (0.10)	0.48** (0.16)	0.27 (0.14)	0.39** (0.10)
	China	2.09** (0.12)	2.23** (0.11)	2.15** (0.17)	2.25** (0.14)	2.23** (0.11)
(Intercept)	5.13** (0.18)	5.04** (0.17)	5.80** (0.26)	5.00** (0.22)	5.02** (0.17)	
N		4343	4343	1922	2421	4343
Adj. R-sq.		0.16	0.28	0.24	0.30	0.28
Policies		Both	Both	Warm.	Debt	Both

Notes: Coefficients, with standard errors in parentheses. The reference category for country is Sweden, and for policy type it is debt reduction. See the Supplementary Information for full question wordings.

** $p < 0.01$, * $p < 0.05$.

preferred political party is in power, and we do not have a measure of party preferences (or left-right ideology). The positive correlations across trust in each of the four institutions, however, suggest our measure of political trust is capturing a more diffuse confidence in national legislative and administrative systems, not respondents' specific views of the current holders of major political offices.

RESULTS

Before presenting the statistical models, we begin by briefly describing some key variables in the analysis. Judging by their answers to the questions about how often they think about and how much they care about future people, most respondents are at least somewhat concerned about future generations. As regards "caring" about future people, for example, a majority of respondents in all four countries gave an answer of 5 or higher on a 0–10 scale (74% in Sweden, 83% in Spain, 54% in

South Korea, and 95% in China). Responses to the questions about thinking and caring were highly correlated (r ranging from 0.48 in Spain to 0.71 in South Korea), and we constructed an index of overall concern based on these two items (taking their geometric mean, given their different scales). Turning to the other key independent variable in our analysis, levels of political trust varied substantially across the four countries, with 56% of the respondents in Sweden reporting scores of 5 or higher, 55% in Spain, 28% in South Korea, and 93% in China. We therefore captured the difference we anticipated in political trust between the two Asian countries, though not the minimal difference between the two European countries. Overall, the Chinese respondents were clearly distinct from those of the three other countries, but, as mentioned above, we do not wish to over-interpret any cross-national differences in means, as they may reflect differences in the samples and/or survey languages. The correlation between the two-item concern index and political trust ranged from 0.11 (in Spain) to 0.23 (China), indicating that they are related, but not strongly.

Support for Future-Oriented Policies

Table 2 presents linear regression models of policy support, as functions of respondents' background demographics, concern and trust, and indicators for different types of policies. As a reminder, the dependent variable ranges from 0 to 10, and each respondent was asked about a single policy (to reduce either global warming or national debt, and possibly employing tax, technology, or spending cuts). The reference category is a question about debt reduction, with no reference to a specific policy instrument. The models in **Table 2** pool the data from all four countries together, and include dummies for three countries (relative to the reference country, Sweden).⁹ Fitting these models separately by country yielded, in most cases, similar results; in the remainder of this section, unless otherwise noted, relationships were substantively consistent across the four countries.

The first model in **Table 2** shows that some demographic groups reported more support for future-oriented policies: younger respondents, with a post-secondary education, higher income, and with one or more children living in their household. We did not, however, find that any of these relationships were at all consistent across the four countries. Some statistically significant coefficients became non-significant in the second model in the table. As such, we do not consider the demographic differences a notable finding.

Next, the first model in **Table 2** shows that policies for reducing global warming (rather than reducing debt) received more support. Consistent with prior research, also, policies of either increasing taxation or reducing public spending received less support. On the other hand, respondents were neutral about the policy of spending more money to develop new technologies, for climate change mitigation.¹⁰

The second model in **Table 2** adds, as predictors, the two-item concern index and the single-item measure of political trust. Both these variables are standardized (centred at zero and divided by their standard deviation), such that the coefficient on each one captures the change in the outcome associated with a one-standard deviation change in the predictor. Support for future-oriented policies is clearly more strongly related to political trust than it is to concern (And this was consistent across all four countries.). The adjusted R-squared is larger for this model than the first model, showing that concern and trust explain nontrivial shares of the variation in the dependent variable. We can directly compare the sizes of the coefficients on concern and trust, given their standardization (though the relative strengths of the relationships must still be compared with some caution, given that they may reflect the two variables' measurement error).¹¹

The third and fourth models in **Table 2** examine attitudes toward climate and debt policies separately. The results are very similar; in both cases, in particular, the strength of the

relationship with trust clearly exceeded that with concern. So the results here are not driven by any particularities of attitudes or beliefs vis-à-vis either climate change or public debt (such as scepticism that climate change is real or dangerous).

Finally, the fifth model adds an interaction effect between political trust and concern. We conducted this test, on the logic that the two factors might be jointly sufficient for policy support, or that political trust may moderate the translation of concern into policy support. The interaction is positive, and statistically significant, suggesting that these two influences may indeed be jointly sufficient. The magnitude of the relationship is not large, however, and when analysing the countries one at a time, we found the interaction effect only in one of them (China). While political trust may moderate the effect of concern on policy support, then, trust's influence is predominantly as an independent predictor rather than as a moderator.

Tests of Mechanisms: Confidence and Willingness to Sacrifice

Next, we test two mechanisms by which the literature suggests political trust shapes policy support: confidence in policies' effectiveness, and individuals' willingness to sacrifice for others. This section will focus on a series of models presented in **Table 3**, with three different outcomes. We test for statistical mediation, by regressing confidence and willingness on trust, and then support on both trust and these two potential mediator variables. Insofar as the coefficient on trust is smaller than it is in a model of support without the mediator (the second model in **Table 2** above), then we will have evidence of mediation (Baron and Kenny, 1986).

Confidence

We begin with respondents' confidence that future-oriented policies will genuinely benefit future generations. Pooling the answers to the different versions of the question about confidence, when asked whether they believed people in the future would really benefit from a future-oriented policy, 54% of respondents in Sweden gave answers of at least 5 or higher (on a 0–10 scale), 64% in Spain and Korea, and 87% in China.

The first two models in **Table 3**, combined with the fourth, test whether trust potentially works via people's confidence in policy effectiveness. In the first two models, confidence is the outcome; the fourth model tests confidence as a *predictor* of policy support. The first model includes demographics, indicators for the different versions of the question about confidence, dummies for three countries, and concern and political trust. Higher-income respondents reported more confidence in policies' effectiveness, as did men and respondents living with one or more children. Comparing reactions to different (randomly assigned) policies, respondents expressed more confidence in the benefits of policies for reducing global warming, compared to public debt (or, in one version, of actually reduced global warming rather than reduced debt). As for specific instruments, respondents were less convinced about the benefits of raising taxes (to reduce either emissions or debt) and more convinced about the benefits of spending on the development of new

⁹We thank two anonymous reviewers for the suggestion to fit single models with all countries together, rather than each country separately.

¹⁰We did not find any consistent interactions between demographics and treatment indicators for different policies.

¹¹We checked for interactions between either concern or trust and the randomized treatments, and did not find any that were at all consistent across all four countries.

TABLE 3 | Confidence and willingness.

Outcome		Confidence		Willingness	Support	
		1	2	3	4	5
Demographics	Age	-0.00 (0.00)	-0.00 (0.00)	0.01** (0.00)	-0.00 (0.00)	-0.00 (0.00)
	Male	0.22** (0.07)	0.21** (0.07)	-0.20** (0.07)	-0.11 (0.06)	-0.04 (0.06)
	Education	0.02 (0.08)	0.02 (0.08)	0.01 (0.08)	0.14* (0.07)	0.14* (0.07)
	Income	0.11** (0.04)	0.11** (0.04)	0.04 (0.04)	0.04 (0.03)	0.03 (0.03)
	Child in household	0.13** (0.04)	0.13** (0.04)	0.12** (0.04)	0.07 (0.04)	0.04 (0.04)
Policies	Global Warming	1.03** (0.08)	1.03** (0.08)		0.19* (0.08)	0.34** (0.07)
	Said	-0.59** (0.10)	-0.59** (0.10)			
	Tax	-0.83** (0.10)	-0.83** (0.10)		-0.62** (0.07)	-0.60** (0.07)
	Tech	0.37** (0.13)	0.38** (0.13)		0.06 (0.10)	0.07 (0.10)
	Cuts	-0.12 (0.12)	-0.11 (0.12)		-0.22* (0.09)	-0.21* (0.09)
Attitudes	Concern	0.43** (0.04)	0.43** (0.04)	0.76** (0.03)	0.31** (0.03)	0.13** (0.03)
	Political Trust	0.89** (0.04)	0.81** (0.04)	0.49** (0.03)	0.28** (0.03)	0.21** (0.03)
	Trust x Tax		0.32** (0.08)			
	Confidence				1.26** (0.03)	1.06** (0.03)
	Willingness					0.69** (0.03)
Country	Spain	0.75** (0.10)	0.75** (0.10)	0.18 (0.10)	0.29** (0.09)	0.30** (0.08)
	S Korea	0.77** (0.10)	0.77** (0.10)	-0.82 (0.10)	0.33** (0.09)	0.32** (0.09)
	China	2.54** (0.11)	2.53** (0.11)	1.39** (0.10)	2.20** (0.09)	2.19** (0.09)
(Intercept)	4.44** (0.18)	4.44** (0.18)	4.64** (0.15)	5.27** (0.15)	5.30** (0.14)	
Adj. R-sq.	0.33	0.33	0.25	0.45	0.50	

Notes: Coefficients, with standard errors in parentheses. The reference category for country is Sweden, and for policy type it is debt reduction. See the Supplementary Information for full question wordings. *N* for all models is 4343.

***p* < 0.01, **p* < 0.05.

technologies. Respondents were fairly neutral about the benefits of a policy of reducing debt by cutting public spending.

The coefficients on “Said” capture the difference between the expected benefits of *actual* reductions in warming or debt versus the likely benefits if a government merely *said* it was introducing new policies to achieve one of these ends. We can interpret this as a quantification of people’s (not unreasonable) scepticism about the likelihood of policy success. Respondents in each country (except China) expected fewer benefits for future generations if told their governments had merely “said” they would introduce new (undefined) policies, compared to being asked about the benefits if either global warming or national debt were actually reduced. In three countries, then, we have clear experimental evidence that the typical respondent doubted their government’s ability to design policies that would achieve their stated aims.

The first model in **Table 3**, also, shows that both political trust and concern predict more confidence in policies’ benefits, with the coefficient on trust more than twice the size of that on concern. Political trust strongly predicts confidence in policy effectiveness, consistent with theory.

We tested for interactions between political trust and each of the policy type indicators, and found one that was statistically and substantively significant for the pooled analysis of all four countries at once; this appears as the third model in **Table 3**. Specifically, respondents with more political trust were significantly less sceptical of the benefits of tax policies.¹²

¹²The interaction was significant for three out of the four countries analyzed separately—all but Sweden.

The fourth model in **Table 3**, next, treats confidence as a *predictor* of policy support. This model is identical to the second model in **Table 2**, except with the inclusion of confidence (here standardized, with mean zero and a SD of 1). The coefficient on confidence is large, and statistically significant. The R-squared has increased from 0.28 to 0.45, showing that confidence explains a lot of the variance in policy support. We can also see that the coefficients on both concern and trust have shrunk considerably—by 40% and more than 60%, respectively. The substantial reduction in the size of the coefficient on political trust is consistent with the theory that much of its influence on policy support operates via confidence. On the other hand, the substantial shrinkage in the coefficient on concern is not consistent with the theoretical model presented in **Figure 1**.

Overall, the results here confirm that political trust, confidence, and policy support are all strongly related, suggesting that political trust operates on policy attitudes by influencing perceptions of policy effectiveness. If we fit models for attitudes toward either climate or debt policies separately, we find substantively similar results.

Willingness

Next, we consider the second mechanism: willingness to sacrifice for future generations. The percentage of respondents who described their willingness as 5 or higher on a 0–10 scale ranged from 52% (in South Korea) to 83% (in China). Here we focus on the third model in **Table 3**, which treats willingness as the outcome, and the fifth model, which includes willingness as a predictor of policy support.

Women, older respondents, and respondents with children in their household were more willing to sacrifice for future generations. Model 3 in **Table 3** shows that willingness, like confidence, was also significantly higher among respondents with both more political trust and more concern. This result would appear consistent with the theoretical model in **Figure 1**, which presents willingness as a reflecting both trust and concern. In contrast to confidence, however, for willingness the coefficient on concern is substantially higher than the one on political trust.

The fifth and final model in **Table 3** builds on the fourth, by adding willingness (standardised) as a predictor of policy support. This increases the R-squared from 0.45 to 0.50, and further reduces the size of the coefficients on concern and trust. Relative to the second model in **Table 2**, confidence and willingness together have shrunk the coefficient on political trust by 70% (and that on concern by 75%). This is consistent with the theory, represented in **Figure 1**, that political trust shapes policy support via these two mechanisms. (The results are again similar if we fit separate models for climate or debt policies.) The fifth model in **Table 3** also allows us to assess whether confidence and willingness potentially operate as a sequence of mechanisms, rather than in parallel. If confidence and willingness are indeed links in a single chain, then adding willingness to a model of policy support that already includes confidence should substantially reduce the coefficient on the latter. In practice, Model 5 in **Table 3** shows it does reduce that coefficient, but only by less than 20%, such that most of the

impact of confidence cannot be via willingness, and they must be independent pathways. Furthermore, in an identical model excluding confidence (not shown), the coefficients on trust and willingness are 0.51 and 0.99, respectively. Given that the coefficient on political trust is not much reduced, relative to the second model in **Table 2**, political trust appears to operate substantially more via confidence than via willingness. If these pathways were serial rather than parallel, we would not see such a substantial difference between the coefficient on trust in models with either confidence or willingness.

Optimism About Future Generations' Standards of Living

Third, and finally, are people who expect standards of living to rise in the future more or less willing to sacrifice? Responses to the question about how standards of living will change in the future varied a great deal across the four countries. Respondents in Europe were not optimistic about future living standards: only 29 and 23% of those in Sweden and Spain, respectively, expected standards of living to rise. In the two Asian countries, by comparison, more people expected that living standards will continue rising in the future (52 and 83% of respondents in South Korea and China, respectively). While we do not wish to over-interpret these cross-national differences (given the reasons for caution we articulated earlier), the differences are consistent with prior studies about comparative levels of generalized social optimism and confidence about the future.

As explained earlier, there are reasons why people who expect standards of living to rise could be either less or more willing to sacrifice for future generations. To assess these competing expectations, **Table 4** presents models testing for a variety of possible relationships between optimism and several other variables. The first model, with optimism as the outcome, shows that optimism about future living standards (ranging from 0 to 4) was higher among older respondents, women, and respondents with children at home. It was also higher among respondents with more political trust, a result consistent with the theory that trust raises expectations about the functionality of society, and thus the prospects for further improvements to human lives.¹³

Next, the second model treats concern as the outcome, and shows that concern for future generations is higher, not lower, among respondents who are more optimistic about future living standards. It is not the case, then, that respondents' concern reflected economists' logic of discounting.

The third model shows that respondents who expect living standards to rise in the future are *more* willing to sacrifice (This relationship was consistent across all four countries, and holds either controlling or not controlling for demographics, concern, and trust.) The fourth model, finally, shows that optimists are also more supportive of future-oriented policies. Willingness to sacrifice and support for future-oriented policies therefore appear to reflect a concern that future generations will be

¹³It could also be that an optimistic worldview leads to trust, though we leave that as an open question here.

TABLE 4 | Optimism.

Outcome		Optimism	Concern	Willingness	Support
Model		1	2	3	4
Demographics	Age	-0.00** (0.00)	-0.02** (0.00)	0.01** (0.00)	-0.00 (0.00)
	Male	0.11** (0.03)	-0.15 (0.08)	-0.21** (0.07)	-0.05 (0.06)
	Education	0.02 (0.03)	0.29** (0.09)	0.00 (0.08)	0.14* (0.07)
	Income	0.05** (0.02)	0.15** (0.04)	0.03 (0.04)	0.03 (0.03)
	Child in Household	0.05** (0.02)	0.34** (0.05)	0.11** (0.04)	0.04 (0.04)
Policies	Global Warming				0.33** (0.07)
	Tax				-0.60** (0.07)
	Tech				0.07 (0.10)
	Cuts				-0.21* (0.09)
Attitude	Concern			0.75** (0.03)	0.13** (0.03)
	Political Trust	0.24** (0.01)		0.46** (0.03)	0.20** (0.03)
	Confidence				1.05** (0.03)
	Willingness				0.69** (0.03)
	Optimism		0.26** (0.04)	0.15** (0.03)	0.06* (0.03)
Country	Spain	-0.11* (0.04)	-0.03 (0.11)	0.18 (0.10)	0.30** (0.08)
	S Korea	0.58** (0.04)	0.07 (0.11)	-0.82** (0.10)	0.32** (0.09)
	China	1.14** (0.04)	2.61** (0.12)	1.40** (0.10)	2.19** (0.09)
(Intercept)	1.92** (0.07)	4.82** (0.18)	4.63** (0.15)	5.30** (0.14)	
Adj. R-sq.	0.27	0.23	0.25	0.50	

Notes: Coefficients, with standard errors in parentheses. The dependent variable is the response to one of eight different questions about climate or debt policy. The reference category is a question about debt reduction. See the Supplementary Information for full question wordings. *N* for all models is 4343.

***p* < 0.01, **p* < 0.05.

deprived (relative to current generations) less than they reflect a belief in the efficacy of sacrificing and confidence in the policies' benefits.¹⁴

DISCUSSION

This paper has explored the consequences of political distrust for future-oriented governance. Albeit with only partially representative samples, our surveys suggested that, on the

whole, people are moderately concerned about future generations. Many in principle feel concerned about the well-being of future generations, would prefer to avoid causing them harm, and are even willing to sacrifice their own standard of living to some degree so that future generations can lead better lives. But the results we have presented also show that political distrust makes many people sceptical about the very policies that governments would need to adopt to prevent the harms of climate change and public debt. They also validate the theoretical model in **Figure 1**, and help adjudicate between competing theories (represented with dashed arrows in that figure).

Specifically, neither subjective concern about future generations, nor a willingness to sacrifice for them, is a function of expectations about declining living standards. People who are more optimistic about future living standards are more willing to sacrifice, and more supportive of future-oriented policies—directly contrary to economists' logic of

¹⁴In models of policy support, the coefficient on optimism is significant for debt policies alone, irrespective of controls. For climate policies, with the full set of controls included in Model 4, the coefficient is not statistically significant. However, the coefficient is significant in models that do not include confidence and willingness as predictors.

discounting. That respondents who expect standards of living to decline were less willing to sacrifice for future generations suggests that such willingness is rooted in positive expectations that sacrifices—and future-oriented policies—will work. It may be that people who are less optimistic about future standards of living possess more negative views of societal functioning generally, and are less trusting in both political and other institutions. As they understandably do not want to give away their money to institutions they perceive as dysfunctional or corrupt, they feel reluctant to sacrifice. This could explain the apparent inconsistency between our results and those of Graham et al. (2017), who found that respondents to their survey were more supportive of future-oriented policies. Their study presented policies such that the benefits—to present or future generations—were in no doubt whatsoever; in our study, the benefits were specifically not guaranteed. Our respondents therefore needed to judge whether they believed such benefits would materialize, and our study shows that many of them were sceptical, making our results more consistent with those of Jacobs and Matthews (2012).

Our study has shown how negative the consequences of distrust may be. Barring significant changes in public policy, public debts and (much more so) climate change will impose large costs on future generations of people. Our results suggest that advocates of policies for reducing these costs should look for ways of raising people's confidence in the policies' effectiveness and/or the trustworthiness of the institutions and office-holders designing and implementing them. Among our respondents, with the exception of those in South Korea, self-reported concern for the well-being of future generations exceeded confidence in the benefits of future-oriented policies (at least based on a very approximate comparison of the two ten-point scales).

One limitation of our study is that we are relying on self-reporting, which may be subject to social desirability bias. Another potential critique is that we have not quantified the values we measure, such as in terms of money. A useful direction for future research would therefore be to compare our results with those based on contingent valuation methods (Kling et al., 2012). There would also appear to be considerable scope for further research linking public optimism or pessimism about the future to people's assessments of the present, including their beliefs that institutions are either corrupt and dysfunctional, or trustworthy and likely to help change the world for the better. And we have not distinguished respondents according to ideology or party identification. Finally, our study has been based entirely on samples of internet users, and future research in this area could benefit from using more representative samples of national populations.

DATA AVAILABILITY STATEMENT

The datasets presented in this study can be found in online repositories. The names of the repository/repositories and

accession number(s) can be found below: <https://doi.org/10.5878/abr0-ba73>.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

MF conducted the empirical analysis, and drafted the first version of the manuscript. All the authors conceptualized the study, helped write the surveys and survey experiments, and contributed to the final manuscript. GA led the application for the grant that supported the research. All authors made a substantial, direct, and intellectual contribution to the work, and approved it for publication.

FUNDING

This research was supported by the Riksbankens Jubileumsfond (the Swedish Foundation for Humanities and Social Sciences, program grant M17-0372:1) and the Marianne and Marcus Wallenberg Foundation (project grant 2019.0196).

ACKNOWLEDGMENTS

Helpful comments were provided by participants in seminars at Gothenburg University's Centre for Collective Action Research, the Laboratory for Comparative Social Research at the Higher School of Economics, Saint Petersburg, Stockholm University's Institutet för social forskning (SOFI), and the 2019 Annual Conference of the research program Climate Ethics and Future Generations, at the Institute for Futures Studies, Stockholm. Bob Goodin provided particularly useful suggestions for the analysis. We also thank two *Frontiers* reviewers for comments that very much improved the manuscript.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpos.2021.656053/full#supplementary-material>

REFERENCES

- Arrhenius, G. (2000). An Impossibility Theorem for Welfarist Axiologies. *Econ. Philos.* 16, 247–266. doi:10.1017/s0266267100000249
- Arrhenius, G. (2020). “Population paradoxes without transitivity,” in *Oxford Handbook of Population Ethics*. Editors G. Arrhenius, K. Bykvist, T. Campbell, and E. Finneron-Burns. (Oxford: Oxford University Press).
- Barnes, L. (2015). The Size and Shape of Government: Preferences over Redistributive Tax Policy. *Socio-Economic Rev.* 13, 55–78. doi:10.1093/ser/mwu007
- Barnett, M. D., Archuleta, W. P., and Cantu, C. (2019). Politics, Concern for Future Generations, and the Environment: Generativity Mediates Political Conservatism and Environmental Attitudes. *J. Appl. Soc. Psychol.* 49, 647–654. doi:10.1111/jasp.12624
- Baron, R. M., and Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *J. Personal. Soc. Psychol.* 51, 1173–1182. doi:10.1037/0022-3514.51.6.1173
- Bertsou, E. (2019). Rethinking Political Distrust. *Eur. Pol. Sci. Rev.* 11, 213–230. doi:10.1017/s1755773919000080
- Boyce, J. K. (1994). Inequality as a Cause of Environmental Degradation. *Ecol. Econ.* 11, 169–178. doi:10.1016/0921-8009(94)90198-8
- Bremer, B., and Bürgisser, R. (2021). *Do Citizens Care about Government Debt? Evidence from Survey Experiments on Budgetary Priorities*. Available: <https://osf.io/preprints/socarxiv/gw5ea/> (Accessed March 19, 2021).
- Broome, J. (2008). The Ethics of Climate Change. *Scientific Am.* 298, 69–73. doi:10.1038/scientificamerican0608-96
- Brulle, R. J. (2014). Institutionalizing Delay: Foundation Funding and the Creation of U.S. Climate Change Counter-movement Organizations. *Climatic Change* 122, 681–694. doi:10.1007/s10584-013-1018-7
- Campbell, T. H., and Kay, A. C. (2014). Solution Aversion: on the Relation between Ideology and Motivated Disbelief. *J. Personal. Soc. Psychol.* 107, 809–824. doi:10.1037/a0037963
- Caney, S. (2018). Justice and Future Generations. *Annu. Rev. Polit. Sci.* 21, 475–493. doi:10.1146/annurev-polisci-052715-111749
- Carmi, N., and Arnon, S. (2014). The Role of Future Orientation in Environmental Behavior: Analyzing the Relationship on the Individual and Cultural Levels. *Soc. Nat. Resour.* 27, 1304–1320. doi:10.1080/08941920.2014.928393
- Citrin, J., and Stoker, L. (2018). Political Trust in a Cynical Age. *Annu. Rev. Polit. Sci.* 21, 49–70. doi:10.1146/annurev-polisci-050316-092550
- Dasgupta, P. (2008). Discounting Climate Change. *J. Risk Uncertain* 37, 141–169. doi:10.1007/s11166-008-9049-6
- Davidovic, D., and Harring, N. (2020). Exploring the Cross-National Variation in Public Support for Climate Policies in Europe: The Role of Quality of Government and Trust. *Energ. Res. Soc. Sci.* 70, 101785. doi:10.1016/j.erss.2020.101785
- Dietz, T., Shwom, R. L., and Whitley, C. T. (2020). Climate Change and Society. *Annu. Rev. Sociol.* 46, 135–158. doi:10.1146/annurev-soc-121919-054614
- Fairbrother, M., Johansson Sevä, I., and Kulin, J. (2019). Political Trust and the Relationship between Climate Change Beliefs and Support for Fossil Fuel Taxes: Evidence from a Survey of 23 European Countries. *Glob. Environ. Change* 59, 102003. doi:10.1016/j.gloenvcha.2019.102003
- Fairbrother, M. (2019). When Will People Pay to Pollute? Environmental Taxes, Political Trust and Experimental Evidence from Britain. *Br. J. Polit. Sci.* 49, 661–682. doi:10.1017/s0007123416000727
- Graham, H., Bland, J. M., Cookson, R., Kanaan, M., and White, P. C. L. (2017). Do People Favour Policies that Protect Future Generations? Evidence from a British Survey of Adults. *J. Soc. Pol.* 46, 423–445. doi:10.1017/s0047279416000945
- Greaves, H. (2017). Discounting for Public Policy: a Survey. *Econ. Philos.* 33, 391–439. doi:10.1017/s0266267117000062
- Hamm, J. A., Smidt, C., and Mayer, R. C. (2019). Understanding the Psychological Nature and Mechanisms of Political Trust. *PLoS ONE* 14, e0215835. doi:10.1371/journal.pone.0215835
- Hetherington, M. J., and Husser, J. A. (2012). How Trust Matters: the Changing Political Relevance of Political Trust. *Am. J. Pol. Sci.* 56, 312–325. doi:10.1111/j.1540-5907.2011.00548.x
- Hetherington, M. (2005). *Why Trust Matters*. Princeton: Princeton University Press.
- Jacobs, A. M., and Matthews, J. S. (2012). Why Do Citizens Discount the Future? Public Opinion and the Timing of Policy Consequences. *Br. J. Polit. Sci.* 42, 903–935. doi:10.1017/s0007123412000117
- Jacobs, A. M. (2016). Policy Making for the Long Term in Advanced Democracies. *Annu. Rev. Polit. Sci.* 19, 433–454. doi:10.1146/annurev-polisci-110813-034103
- Kahan, D. M., Jenkins-Smith, H., Tarantola, T., Silva, C. L., and Braman, D. (2015). Geengineering and Climate Change Polarization. *ANNALS Am. Acad. Polit. Soc. Sci.* 658, 192–222. doi:10.1177/0002716214559002
- Keeler, B. L., Gourevitch, J. D., Polasky, S., Isbell, F., Tessum, C. W., Hill, J. D., et al. (2016). The Social Costs of Nitrogen. *Sci. Adv.* 2, e1600219. doi:10.1126/sciadv.1600219
- Kennard, A. (2020). My Brother’s Keeper: Other-Regarding Preferences and Concern for Global Climate Change. *Rev. Int. Organ.* 16, 345–376. doi:10.1007/s11558-019-09374-w
- Klenert, D., Mattauch, L., Combet, E., Edenhofer, O., Hepburn, C., Rafaty, R., et al. (2018). Making Carbon Pricing Work for Citizens. *Nat. Clim Change* 8, 669–677. doi:10.1038/s41558-018-0201-2
- Kling, C. L., Phaneuf, D. J., and Zhao, J. (2012). From Exxon to BP: Has Some Number Become Better Than No Number? *J. Econ. Perspect.* 26, 3–26. doi:10.1257/jep.26.4.3
- Knack, S., and Keefer, P. (1997). Does Social Capital Have an Economic Payoff? a Cross-Country Investigation. *Q. J. Econ.* 112, 1251–1288. doi:10.1162/003355300555475
- Kohut, A. (2012). *Debt and Deficit: A Public Opinion Dilemma*. Pew Research Center. <https://www.pewresearch.org/politics/2012/06/14/debt-and-deficit-a-public-opinion-dilemma/>.
- Kolstad, C., Urama, K., Broome, J., Bruvoll, A., Cariño Olvera, M., Fullerton, D., et al. (2014). Social, Economic and Ethical Concepts and Methods in AR5 Climate Change 2014: Mitigation of Climate Change. *Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Editors O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, et al. (New York: Cambridge University Press), 207–282.
- Kulin, J., and Johansson Sevä, I. (2020). Who Do You Trust? How Trust in Partial and Impartial Government Institutions Influences Climate Policy Attitudes. *Clim. Pol.* 21, 33–46. doi:10.1080/14693062.2020.1792822
- Labonte, M., and Makinen, G. E. (2008). *National Debt: Who Bears its Burden? Congressional Research Service Report RL30520*. Library of Congress. Available: <https://www.hsdl.org/?view&did=715715> (Accessed March 16, 2021).
- Leiserowitz, A., Maibach, E., Rosenthal, S., Kotcher, J., Bergquist, P., Ballew, M., et al. (2019). *Climate Change in the American Mind*. Available: https://www.climatechangecommunication.org/wp-content/uploads/2019/12/Climate_Change_American_Mind_November_2019b.pdf (Accessed January 15, 2020).
- Manza, J., and Brooks, C. (2012). How Sociology Lost Public Opinion. *Sociological Theor.* 30, 89–113. doi:10.1177/0735275112448054
- Markowitz, E. M., and Shariff, A. F. (2012). Climate Change and Moral Judgement. *Nat. Clim Change* 2, 243–247. doi:10.1038/nclimate1378
- McKnight, D. H., and Chervany, N. (2001). “Trust and Distrust Definitions: One Bite at a Time,” in *Trust in Cyber-Societies*. Editors R. Falcone, M. Singh, and Y.-H. Tan (London: Springer-Verlag), 27–54.
- Milfont, T. L., Wilson, J., and Diniz, P. (2012). Time Perspective and Environmental Engagement: A Meta-Analysis. *Int. J. Psychol.* 47, 325–334. doi:10.1080/00207594.2011.647029
- Mishler, W., and Rose, R. (2001). What Are the Origins of Political Trust? *Comp. Polit. Stud.* 34, 30–62. doi:10.1177/0010414001034001002
- Parfit, D. (1984). *Reasons and Persons*. Oxford: Oxford University Press.
- Parker, K., Morin, R., and Horowitz, J. (2019). *Looking to the Future, Public Sees an America in Decline on Many Fronts*. Pew Research Center. <https://www.pewresearch.org/social-trends/2019/03/21/america-in-2050/> (Accessed March 21, 2021).
- Rudolph, T. J., and Evans, J. (2005). Political Trust, Ideology, and Public Support for Government Spending. *Am. J. Polit. Sci.* 49, 660–671. doi:10.1111/j.1540-5907.2005.00148.x
- Rudolph, T. J. (2017). “Political Trust as a Heuristic,” in *Handbook on Political Trust*. Editors S. Zmerli and T. W. G. van der Meer (Cheltenham: Edward Elgar), 197–211.

- Sønderskov, K. M., and Dinesen, P. T. (2016). Trusting the State, Trusting Each Other? the Effect of Institutional Trust on Social Trust. *Polit. Behav.* 38, 179–202. doi:10.1007/s11109-015-9322-8
- Steenvoorden, E. H., and Van der Meer, T. W. (2017). Continent of Pessimism or Continent of Realism? A Multilevel Study into the Impact of Macroeconomic Outcomes and Political Institutions on Societal Pessimism, European Union 2006–2012. *Int. J. Comp. Sociol.* 58, 192–214. doi:10.1177/0020715217710809
- Steg, L. (2018). Limiting Climate Change Requires Research on Climate Action. *Nat. Clim. Change* 8, 754–761. doi:10.1038/s41558-018-0269-8
- Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A., and Kalof, L. (1999). A Value-Belief-Norm Theory of Support for Social Movements: The Case of Environmentalism. *Hum. Ecol. Rev.* 6, 81–97.
- UNDP (2007/2008). *Human Development Report 2007/8: Fighting Climate Change - Human Solidarity in a Divided World*. New York: United Nations Development Programme. Available: <http://hdr.undp.org/en/content/human-development-report-20078> (Accessed March 21, 2021).
- Uslaner, E. M. (2005). “Trust and Corruption,” in *The New Institutional Economics of Corruption*. Editors J. G. Lambsdorff, M. Taube, and M. Schramm (London: Routledge), 76–92.
- Van der Meer, T. W. G. (2017). “Political Trust and the “Crisis of Democracy,”” in *Oxford Research Encyclopedia of Politics* (Oxford: Oxford University Press). doi:10.1093/acrefore/9780190228637.013.77
- Van der Meer, T. W. G., and Zmerli, S. (2017). “The Deeply Rooted Concern with Political Trust,” in *In Handbook on Political Trust*. Editors S. Zmerli and T. W. G. van der Meer (Cheltenham: Edward Elgar), 1–15.
- Wade-Benzoni, K. A., and Tost, L. P. (2009). The Egoism and Altruism of Intergenerational Behavior. *Pers Soc. Psychol. Rev.* 13, 165–193. doi:10.1177/1088868309339317

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Copyright © 2021 Fairbrother, Arrhenius, Bykvist and Campbell. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.