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How Much Do We Value Future Generations? Climate Change, Debt, and Attitudes towards Policies for Improving Future Lives⁵

Do people care much about future generations? Moral philosophers argue that we should, but it is not clear that laypeople agree. Humanity's thus-far inadequate efforts to address climate change, for example, could be taken as a sign that people are unconcerned about the well-being of future generations. An alternative explanation is that the lack of action is due to public scepticism about climate policies' effectiveness, rather than the discounting of future lives per se. Based on surveys and survey experiments with representative samples of respondents in four countries—Sweden, Spain, South Korea, and China—we find that most people say they care

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about future generations, and would even be willing to reduce their standard of living so that people can enjoy better lives in the future. Many do not, however, support policies for reducing either global warming or the national debt—both of which would impose a net cost on current generations for the benefit of future generations. We show that a significant part of the public's apparent lack of concern for future generations is actually due to disbelief or distrust in the likely benefits of government actions.

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1. Introduction

How can we explain the lack of action in the face of the unfolding climate crisis? Given that scientists have been warning about the problem of climate change for decades, and all that time policy experts have been suggesting ways of responding to it, why has humanity taken so few steps?

One reason for humanity's failure to solve the massive collective action problem that is global climate change could be the fact that climate change is a massively intergenerational issue. Given that the costs of reducing greenhouse gas emissions are incurred immediately while the greatest benefits will be enjoyed in the future, it may be that people alive today simply do not much care about future generations. While moral philosophers and welfare economists ascribe substantial value to future generations (Parfit 1984; see also Arrhenius (forthcoming), (2000); Arrhenius, Ryberg, & Tännsjö (2010); Blackorby, Bossert, & Donaldson (2005); Broome (2004)), perhaps laypeople do not.

This paper investigates the role that the well-being of future generations—both their quality of life and their number—plays in the thinking of current generations with respect to the issue of climate change. Specifically, the paper asks:

- (i) How much do people care about future generations? What kinds of people care more versus less? In principle, how willing are people to sacrifice their own standard of living for the benefit of future generations?
- (ii) More specifically, how much do people support public policies that would benefit future generations but also entail some sacrifice on the part of current generations?

- (iii) To what extent does support for (or opposition to) those policies reflect people's valuation of future generations, versus their beliefs about the policies' effectiveness and/or their trust in major social institutions?

To answer these questions, we report the results of surveys and survey experiments conducted in 2019 in four countries—Sweden, Spain, South Korea, and China. Across these four countries, most people say they care about future generations, and many would even be willing to reduce their own standard of living somewhat if that helped improve people's lives in the future. At the same time, many respondents were unsupportive of two policy actions that government could use to benefit future generations, albeit at some cost to people alive today: reducing either global warming or their country's national debt. We tested how people evaluated policies for reducing either of these two things, for two reasons. First, there are potential linkages between them (as explained further below). Second, while climate change and debt are both issues of intergenerational distribution, policies for mitigating them might appeal to people with rather different political views.

We found that people who report being more concerned about future generations are more supportive of both kinds of policies. So are people who report being more trusting in major social institutions, consistent with a number of prior studies showing that support for environmental policies depends heavily on people's political trust (e.g., Fairbrother 2016a, 2019; Fairbrother et al. 2019; Klenert et al. 2018). Political trust can be defined as positive expectations about the likely behaviours of policymakers and public authorities—the belief that they could but will not do someone trusting them harm—including when they are not being scrutinized (see e.g., Levi and Stoker 2000; Hamm, Smidt, and Mayer 2019). We argue therefore that a lack of concern about the well-being of future generations is not the only reason why a person alive today may fail to support policies intended to benefit future generations. Instead, people may oppose such policies because they do not believe the policies will actually work. Some of our results suggest the latter is in fact the more important reason for people's weak support for future-oriented policies.

This argument speaks to an important debate in scholarship on the ethics and economics of climate change, and climate policy. Though reducing greenhouse gas emissions has a cost, some researchers suggest the cost need not be borne by current generations. By means of public debt, or perhaps a "climate world bank", the costs of climate policies could be deferred to future generations (Broome 2016; Broome and Foley 2016; Sachs 2014). These researchers believe that this would be fair, not only because future generations will be the main beneficiaries of climate policies, but also because future people will probably enjoy higher standards of living (e.g.,

Keramidas et al. 2018).⁶ At the same time, some of the same researchers also interpret the current lack of global action on climate change as proof that people today are “just not moral enough” (Broome 2018). There is a certain tension between these two claims: If the costs to present generations of mitigating climate change could be reduced to zero, selfishness cannot explain a lack of action. In contrast, our results point to the prevalence of excessive “effectiveness scepticism”, or scepticism about the effectiveness of an environmental policy (Bolderdijk et al. 2017). If that is indeed the major problem, then it could be hard to win people’s support even for policies that will cost them little or nothing.⁷ It would seem a higher priority to find ways of raising public confidence in the policies’ effectiveness rather than looking for creative ways of delaying paying for them.

The remainder of this paper proceeds as follows. First, we contextualize our study by reference to literature on the ethics and economics of climate change, climate policies, and intergenerational fairness. Second, we present the data and research design we employ in our empirical investigation. Third, we present the results from our surveys and survey experiments. Fourth, we conclude with a discussion of the study’s limitations and implications.

2. Context and Background

Since emitting greenhouse gases causes harm to others, moral philosophers argue that people should not do it (e.g., Broome (2008), (2012)(1992), Conly 2015). The imposition of costs through the effects carbon pollution are well-known to be directional in time. The externalized costs of greenhouse gas emissions largely flow forward, across generations, making climate change an issue of intergenerational justice—in the sense of being related to “the moral duties owed by present to future people and the rights that future people hold against present people” (Kolstad et al. 2014: 216). The preamble to the United Nations Framework Convention on Climate Change therefore concludes by referring specifically to the signatories’ determination “to protect the climate system for present and future generations.”

With respect to climate change and many other issues of intergenerational justice, moral philosophers and welfare economists argue we must give weight to the well-being of future generations, and that current generations should be willing to

⁶ However, not everyone agrees that shifting the costs to future generations would be fair. For an opposing view, see Gardiner 2017.

⁷ To be clear, in focusing on the mass public while seeking to understand humanity’s overall failure to address major environmental problems, we are not dismissing the influence of top-down political pressures from elites with a stake in the status quo. Rather, we regard public attitudes as partly a product of such campaigns, and of elite cues. One of the goals of elite campaigns is precisely to shape public views, because the latter’s views matter politically (Manza and Brooks 2012).

make some sacrifice on behalf of future generations (see e.g., Parfit 1984; Arrhenius 2000; Arrhenius et al. 2010; Blackorby et al. 2005; Broome 2004). Judging by the public inaction on climate change, however, it seems that the public does not in fact care much about future generations.⁸ This lack of concern would make sense given that, as van der Linden et al. (2015) put it: “mounting evidence from across the behavioral sciences has found that most people regard climate change as a nonurgent and psychologically distant risk—spatially, temporally, and socially—which has led to deferred public decision making about mitigation and adaptation responses.” Future generations and their well-being may be very far from most people’s minds.

The value that people attach to future generations is not well understood, and measuring people’s preferences about the temporal distribution of policy benefits is difficult (Jacobs 2016). Few studies have attempted to investigate what people causing the “externalized” costs of climate change—i.e., polluters—think about the future generations whose well-being they are influencing. In 2010, in a rare exception, the International Social Survey Programme asked about people’s agreement with the statement “We worry too much about the future of the environment and not enough about prices and jobs today.” The distribution of answers on this item was about evenly balanced between agreement and disagreement.

Similarly, some prior studies have looked at discounting—the degree to which people discount the value of well-being in the future (Bernauer 2013; for the morality of discounting, see e.g., Broome (1994); Parfit (1984)). Decisions about climate policy are closely tied to the discount rate applied in cost-benefit analyses, and a fair allocation of climate policy costs and benefits across generations is closely tied to expectations about differences in the standards of living of different generations (Dasgupta 2008; Neumayer 2007). As Neumayer (2007: 301) puts it, “few people would want the future to be worse off than us or would want to violate the inalienable rights of future generations. They are also possibly willing to sacrifice quite a bit for preventing this from happening.” In other words, if it is to be fair, the cost burden of mitigating climate change should fall more heavily on people who are richer. Economists’ general expectation that future generations will be richer therefore has important implications for what moral philosophers think we should do in terms of climate change (e.g., Broome 2008). Among the lay public,

⁸ Of course, another possibility is that the public doesn’t believe climate change is real and/or will genuinely affect people’s lives. But surveys show that is not actually a widespread view, as Steg (2018) discusses for example with respect to Europe. Recent polls have found more than 70% of Americans believe climate change will harm future generations (Leiserowitz et al. 2019). There are also some people who say climate change is a natural (not significantly anthropogenic) process, and there is little anyone can do to influence it; but such people are few.

likewise, expectations about the incomes of future generations relative to people alive today may strongly influence people's support for policies that will benefit future generations at the expense of current generations. And it is not clear that laypeople share economists' optimistic view that future generations will enjoy higher standards of living than current generations.

The dearth of public actions on climate change—and people's statements that they are not willing to support some future-oriented policy—are not necessarily, however, proof that people are unconcerned about (or discount the well-being of) future generations. Instead, a second possibility is that people are simply unconvinced that some potential measure for mitigating climate change will actually work, or have the benefits ascribed to them. Prior studies have therefore shown, for example, that opposition to environmental taxes is largely driven by people's political distrust (Fairbrother 2016a, 2019; Hammar and Jagers 2006; Harring 2013). Insofar as distrust is a *belief* about the likely behaviours of another—a belief that the behaviours will not be *trustworthy*—we can therefore say that opposition to climate policies can be rooted in either values or beliefs (or both).

This distinction reflects, theoretically, the diversity of ways that the social sciences suggest we can think about the environment. According to one classic and influential perspective in psychology, altruistic attitudes are the very foundation of the environmental movement, including support for environmental policies (Stern 2000; Stern et al. 1999). Such a perspective suggests that supporting environmental protection is, fundamentally, about a willingness to make sacrifices for the benefit of socially, spatially, and/or temporally distant people—plus perhaps non-human species. From this perspective, low public support for key environmental policies, and the inadequacy of humanity's response to major problems like climate change, would seem to be clear evidence of people's selfishness and lack of concern for the well-being of future generations. If previous generations are unwilling to stop imposing costs on future generations, and unwilling to pay any form of compensation for those costs, that is evidence of selfishness (or the opposite of altruism).

But from another perspective, the real costs of even quite aggressive environmental protection are surprisingly modest. Vandyck et al. (2016) estimate for example that mean global temperature increase could be kept at no more than 2° for less than a 1% reduction in global GDP. Keramidas et al. (2018) argue that a 2° pathway could be achieved even if global GDP were to more than double between 2020 and 2050. From this second perspective, environmental policy is predominantly an issue not of what people value, but of their beliefs about costs, benefits, and their distribution; environmentalism is not about sacrifice, but social coordination and the improvement of human lives (Fairbrother 2016b). But the complexity of that coordination may make it appear more costly to solve than it

actually is. Jacobs and Matthews (2012) have for example shown, using survey experiments, that people substantially discount the future benefits of public policies, and largely because of uncertainty about the future—including doubts about the likely future benefits of policies.

Uncertainty about whether the state will deliver what it promises undermines support for many policies with long-run benefits (Jacobs 2016). Scepticism about the effectiveness of an environmental policy—effectiveness scepticism—can both lead to opposition, and reflect people’s prior dislike of a policy such as because of feelings it is unfair (Bolderdijk et al. 2017). A view of public attitudes as rooted in effectiveness scepticism, and in excessive doubts about the real benefits of public policies, stands in contrast to arguments that people are not moral enough — presumably meaning they do not attach much value to future generations.

As we mentioned earlier, insofar as there are costs associated with addressing climate change, Broome (2016) suggests that it should be possible for intergenerational transfers to be organized such that no generation is disadvantaged. In his argument, current generations would reduce greenhouse gas emissions (at some cost to themselves, and for the sake of future people) but receive *de facto* compensation for incurring that cost—in the form of consumption paid by debt. Future generations would be burdened with debt, but reap the benefits of reduced climate change. This view reflects an economic take on environmental problems—wherein any such problem is one of injustice, since there is an externalized cost paid by someone other than the polluter (see Fairbrother 2016b). If there are externalities, there is an efficiency loss—and in principle it should be possible to improve efficiency in such a way as to leave nobody worse off. The influential Stern Review of the economics of climate change emphasized how much less it would cost, in total, for humanity to act sooner rather than later to mitigate greenhouse gas emissions (Stern 2007). While doing that would mean current generations paying a price for the benefit of future generations, the overall cost savings to humanity would be substantial—maybe even massively so (Neumayer 2007). If so, though, that means there is an opportunity to reduce the overall cost—it just requires coordination across generations.

To sum up, then, we can distinguish two general (though not completely mutually exclusive) perspectives, which provide potential explanations for what is blocking progress in climate policy. According to the one perspective, the costs of action are large—which means only people willing to pay a significant cost, altruistically, for the sake of others, will support policies. The other perspective takes the costs of action as modest, or even negligible—such that no notable sacrifice is required, but some confidence in the policies/mechanisms is necessary. Each perspective makes a claim about the values people would have to possess in order to support policy

action. Yet no prior study has attempted to assess value-based as opposed to beliefs- or trust-based explanations of the lack of support for key climate policies. This article investigates empirically the degree to which each perspective succeeds in explaining public policy preferences, in four national contexts.

On a final note here, much of the above applies not just to the *quality* of future lives, but also their *quantity*—that is, the impacts of climate change and climate policies on the world’s total human population. While it is not an intuitive conclusion for many laypeople, a significant number of moral philosophers and welfare economists argue forcefully that population itself has value (e.g., Broome 2005). That is, *ceteris paribus*, more human lives are better than fewer, assuming that the additional lives are worth living, or at least if the lives are well worth living—i.e. the good aspects of the life greatly outweigh the bad (e.g., Arrhenius (2000); Blackorby et al. (2005); Broome (2004), (2005); Parfit (1984). Many people may dislike the idea of a growing global population, as they assume a trade-off between quantity of life and quality of life (as we show below to be the case). However, in light of the discussion in moral philosophy and welfare economics about the value of future lives, we investigate public views not only of policies for increasing the quality of future lives, but also the *number* of such lives. Here too we have little prior evidence of public attitudes. The International Social Survey Programme asked nationally representative samples of people in dozens of countries in 2010 to what extent they agreed that “The earth simply cannot continue to support population growth at its present rate.” Most people agreed, with relatively modest differences among nations. That question clearly did not ask, though, about whether population growth would be desirable in the *absence* of a trade-off with environmental sustainability and quality of life.

3. Research Design, Data, and Methods

Our empirical investigation proceeds in six stages. First, we describe what people, including people with different demographic characteristics, say about how much they think, care, and are willing to sacrifice for future generations. Second, we present people’s self-reported trust in four major social institutions, as preparation for including trust as a predictor in subsequent analyses of relevant outcomes. Third, we present people’s support for increasing the world population, including when encouraged to think about a population increase as necessarily implying a lower quality of life. Fourth, we examine people’s attitudes towards public policies for reducing either global warming or public debt—framing such policies as a cost to present generations and a benefit to future generations. In particular, we examine the degree to which people’s support for such policies correlates with their levels of

concern about future people and their levels of institutional trust. Fifth, we show that people's policy support is closely tied both to their confidence in policies' effectiveness and to their institutional trust. But people's assessments of policies' effectiveness are not only a cause of people's overall policy attitudes; we show they are also a reflection. Sixth, we show that people are more likely to be willing to sacrifice their own standard of living for the sake of future generations if they expect those future generations to be *better* off than themselves. And we further show that people with optimistic outlooks on the future evolution of human standards of living are more trusting, more confident about the benefits of policy interventions (whether climate or debt), more supportive of increasing the population, and more supportive of climate/debt reduction policies.

Sample

Prior studies have shown that public attitudes towards many kinds of policies, including climate and other environmental policies, are heavily conditioned by political trust—including not just an individual survey respondent's political trust, but also that of the whole society in which s/he lives (Fairbrother 2016a). For our empirical study, we therefore conducted surveys, with embedded survey experiments, in four countries with substantially variable levels of political trust: Sweden, Spain, China, and South Korea. Based on prior polls and studies, levels of institutional trust are high in Sweden and China, and low in Spain and South Korea. We also chose these four countries because they span two culturally dissimilar world regions. The surveys were fielded by the international firm Ipsos MORI, using reasonably high-quality, nationally representative samples of adults.⁹ Achieved N's were: Sweden 1084, Spain 1298, South Korea 1176, China 1165. Background demographic variables were gender, age, household income, education, and the number of children in the household. The age ranges covered by the samples were: Sweden 16-65, Spain 16-65, South Korea 18-54, China 18-50. The four countries encompass quite varying levels of climate policy performance, with Sweden a strong performer, South Korea a poor performer, and the others in between (Burck et al. 2019).

Survey Questions

Our survey investigated: respondents' self-assessed concern for the well-being of future people; their preferences about the size of the global human population; their

⁹ The age ranges covered by the samples varied somewhat: 16-65 in Sweden and Spain, 18-50 in China, and 18-54 in South Korea.

attitudes towards some key public policies; and some of their relevant beliefs and general political views.

We introduced the series of questions we asked respondents by saying: “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.” Note that this statement did not mention climate change, or any specific policy domain. (Depending on the random assignment, some respondents never received a question mentioning global warming.)

To measure people’s concerns about future generations, we asked three questions. First, we asked respondents: “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, we asked: “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.” The purpose of these two questions was to capture people’s self-assessed conscientiousness about future generations. Third, as a measure of people’s willingness to sacrifice for the sake of future generations, we asked respondents to what extent they would “be willing or not to reduce [their] standard of living, so that people in the future can lead better lives” (on a 0-to-10 scale from not at all willing to completely willing).

Next, after explaining to respondents that “the decisions we make in society today could also influence the size of the world population in the future,” we asked people one of twelve versions of a question about being “in favour or not in favour of increasing the population.” Respondents could express their opposition or support on 0-to-10 scale. In various different versions, an increased population was said to mean “a lower future standard of living,” “no difference to people’s standard of living,” to be possible even if future people “could definitely enjoy a high standard of living.” That randomized treatment was crossed with a randomly assigned reminder either that “increasing the population would mean more people get the chance to live” or “not increasing the population would mean fewer people get the chance to live.” The point was to test the impact of different beliefs about future standard of living on preferences about the size of future generations.

Having gotten respondents thinking about the consequences of decisions today for future generations, we then investigated people’s support for one of two randomly assigned policy actions that governments could take for the benefit of people in the future. These were framed as “examples” of ways that people today could reduce their standard of living for the sake of improving the lives of people in the future. The two actions were “policies to reduce global warming” and “policies to reduce the national debt.” Some respondents, furthermore, received versions of

these questions specifically saying the goal of reducing global warming or reducing the national debt would be achieved “by increasing taxes,” (in the case of global warming only) “by paying for more research on new technologies,” or (for national debt only) “by cutting spending.” Respondents expressed their support on a 0-to-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 kinds of policies which experts think would generally be effective but laypeople may not.

Next, we asked about respondents’ belief in the policies’ effectiveness. On a 0-to-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 if the government said it was introducing certain specific policies towards these ends. By randomly assigning respondents to hear a question either about *actual, achieved reductions* in global warming or the national debt, versus just statements of policies being introduced, we can measure the impact of people’s distrust in government claims and/or their intention and ability to achieve what they say they will achieve.

Next, we asked how respondents thought “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.” We take this as a measure of optimism about the future. And, finally, we also asked about people’s trust (on a scale of 0 to 10) in each of a short series of institutions or groups—university research centres, the news media, business and industry, and the national parliament (or congress, in the case of China).

4. Findings

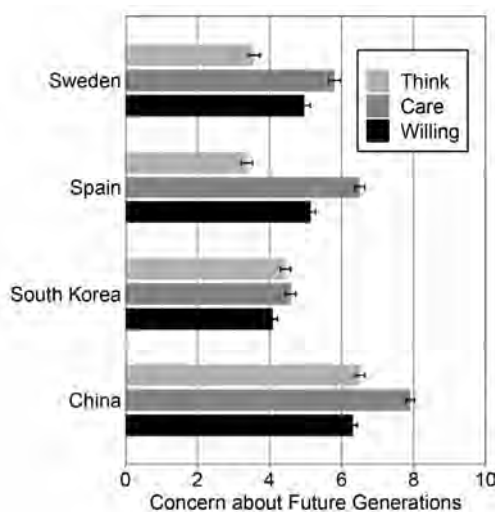
First, we begin by presenting results about people’s level of concern about the well-being of future generations—whether people think much and/or care about future people, and would be willing to sacrifice their own standards of living for them. Second, we briefly note what we find about people’s answers to the four institutional trust questions, ahead of using trust as a second key predictor (along with concern) of various other attitudes. Third, we consider people’s attitudes towards policies for benefiting future generations, comparing the associations between their support for various policies and either concern or trust. Fourth, we compare those results with those for support for increasing the population. Fifth, we examine people’s confidence in whether the policies would actually work. And sixth, we consider the issue of people’s expectations about future standards of living.

In general, we do not make much of cross-national differences in the average responses to different questions. Comparisons across the four countries must be considered inexact, given that survey questions (translated into different languages) can be received and interpreted differently in different cultural contexts (Davidov et al. 2014). The representativeness and demographic biases of the samples may also differ across the four countries.

(1) Concern about Future Generations

Figure 1 presents the average level of concern people in each of the four countries possess about future generations—judging by respondents’ answers to three different questions. (The three questions are about how often respondents think about future people who have not even been born yet; how much they care about the future quality of life of people who have not even been born yet; and about how willing they would be to reduce their standard of living, so that people in the future can lead better lives.) Judging by their answers to these three questions, most people do seem to care at least somewhat about future generations. There was a lot of variation across different people’s responses to these questions, but as regards “caring” about future people, for example, a majority of people in all four countries gave an answer of 5 or higher on a 0 to 10 scale (74% in Sweden, 83% in Spain, 54% in South Korea, and 95% in China). Scores for “thinking” about future generations were lower than for “caring”, as were those for being willing to sacrifice. In all four countries, a majority of the respondents gave scores of 5 or higher for willingness.

Figure 1. Average concern, by three measures, about future people, by country



The “think” variable, originally measured on a 1–5 scale, has been rescaled to range from 0 to 10.

Responses to the three different questions are correlated in each country (Cronbach's alpha is 0.59 or higher), so we constructed an index of overall concern, using a factor analysis (regression scores, using varimax rotation). We make use of this index in further analyses reported below, but first we can treat it as the outcome in regression models, with age, gender, education, income, and presence of children in the household as predictors—see Table 1.

Table 1: Models of Concern for Future Generations

	Sweden	Spain	S Korea	China
Age	-0.01** (0.00)	-0.00** (0.00)	-0.01* (0.00)	-0.01** (0.00)
Male	-0.25** (0.06)	-0.15** (0.05)	0.05 (0.06)	-0.07 (0.05)
Education	0.22** (0.06)	0.08 (0.05)	0.19** (0.06)	-0.17* (0.08)
Income	-0.03* (0.01)	0.01 (0.01)	0.01 (0.01)	0.04** (0.00)
Child in Household	0.26** (0.06)	0.20** (0.05)	0.32** (0.06)	0.27** (0.06)
(Intercept)	0.44** (0.11)	0.12 (0.11)	-0.08 (0.11)	-0.36** (0.13)
N	951	1113	1124	1155

*Coefficients (with standard errors in parentheses). Dependent variable ranges from 0 to 10. **<0.01, *< 0.05.*

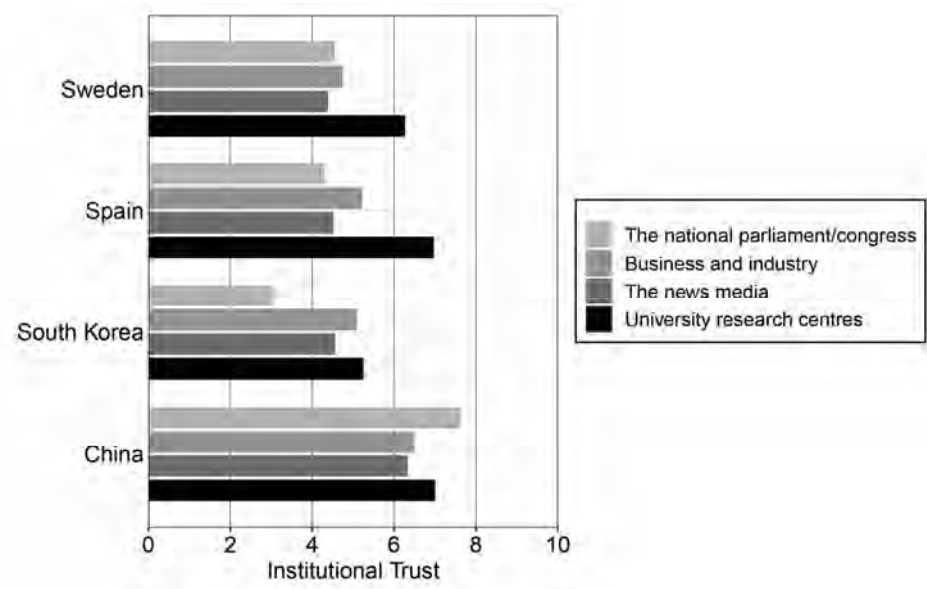
Based on these models, in every country, older respondents expressed less concern about future generations, while respondents in households with children expressed more concern. By comparison, the relationships with gender, education (coded dichotomously as any education beyond secondary or not), and income differed across the four countries.

(2) Institutional Trust

The four questions about trust in major social institutions also correlated with each other—Cronbach's alpha was 0.72 or higher. Levels of institutional trust varied substantially across the four countries—see Figure 2: 47% of respondents in Sweden had an average score of 5 or higher (across the four institutions), 52% in Spain, 87% in China, and 32% in South Korea. We therefore captured the difference we expected in institutional trust between the two Asian countries, but the minimal

difference between the two European countries in their average levels of trust was surprising (as was the fact that the level of institutional trust was slightly higher in Spain than in Sweden).

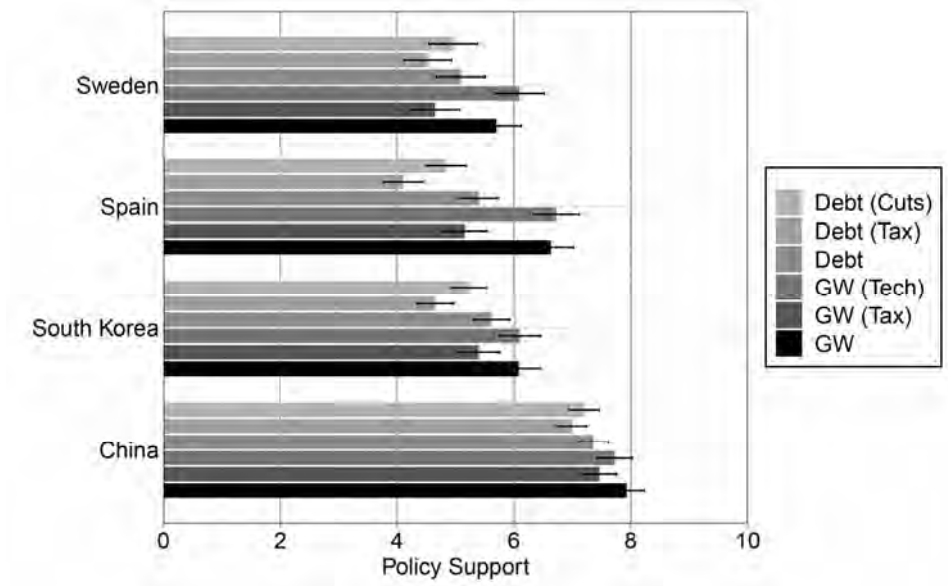
Figure 2. Average institutional trust, by country



(3) Policy Support

When asked about policies for benefiting future generations, people were moderately supportive—see Figure 3. Support declined if respondents were told the policy entailed paying higher taxes. Respondents were more supportive about helping future generations by reducing climate change than by reducing national debt.¹⁰ But, whatever the issue (climate change or national debt), raising taxes is unpopular. And, otherwise, (randomly assigned) differences among the hypothetical policies do not make much difference.

¹⁰ Note that one of the policies is global (climate change) whereas the other is national (debt). We might have expected less support for climate change, given that many of the benefits of climate policies (i.e., of mitigating greenhouse gas emissions) will accrue to more socially distant people. But that is not what we find.

Figure 3. Average support for different policies in each country

Next, we fit models of policy support—see Table 2. The first model for each country shows only background demographics—age, gender, education (two categories), income, and the presence of a child in the respondent’s household. The second model shows coefficients for two randomly assigned treatments—whether the policy was global warming (rather than national debt) and whether it was a tax policy—plus two indices measuring concern about future generations and institutional trust. The third model for each country includes the full set of covariates.

Table 2 shows that background demographics are little related to policy support. In contrast, the four variables included in the second model for each country are all strong predictors of policy support. In such models, all variables are statistically significant, in all countries. Table 2 also shows (observationally rather than experimentally) that support for policies for reducing either climate change or public debt are a function (about equally, pooling all four countries) of both concern and trust.¹¹ In other words, trust appears to make as much difference to people’s policy attitudes as does concern for future generations, generally. And that is true for policies related to either global warming or debt reduction.

¹¹ We can directly compare the sizes of the coefficients on these two variables, as they are each standardized (centered at zero, and divided by their standard deviations). The beta coefficients here represent the change in Y associated with a 1 standard deviation change in X.

Table 2. Models of Policy Support

	Sweden		Spain		South Korea		China	
Age	- 0.03** (0.01)	-0.01* (0.01)	- 0.03** (0.01)		- 0.02** (0.01)	0.03** (0.01)	0.01* (0.01)	0.01 (0.01)
Male	-0.04 (0.19)	0.13 (0.16)	-0.30 (0.17)		-0.05 (0.14)	-0.07 (0.13)	-0.11 (0.17)	0.08 (0.10)
Education	0.30 (0.19)	-0.26 (0.16)	0.42* (0.18)		0.12 (0.17)	-0.04 (0.15)	-0.32 (0.18)	-0.15 (0.15)
Income	-0.02 (0.04)	-0.01 (0.03)	0.08** (0.03)		0.08** (0.03)	0.07** (0.02)	0.03** (0.01)	-0.00 (0.01)
Child in Household	0.41 (0.21)	0.12 (0.18)	0.15 (0.18)		0.33* (0.16)	0.01 (0.14)	0.54** (0.13)	0.26* (0.11)
Policy: Glob Warming		0.74** (0.15)	0.65** (0.16)		1.36** (0.14)	0.81** (0.13)		0.58** (0.10)
Policy: Tax		- 0.91** (0.16)	- 0.82** (0.17)	- 1.10** (0.15)	- 1.10** (0.16)	- 0.67** (0.13)		-0.25* (0.10)
Concern (Index)		0.98** (0.08)	1.00** (0.08)	0.84** (0.07)	0.86** (0.08)	0.66** (0.07)		0.43** (0.05)
Trust (Index)		1.00** (0.08)	1.01** (0.08)	0.53** (0.07)	0.51** (0.08)	0.61** (0.07)		0.76** (0.05)
(Intercept)	6.20** (0.37)	5.09** (0.12)	5.87** (0.35)	5.22** (0.10)	5.62** (0.32)	4.12** (0.27)	6.47** (0.29)	7.26** (0.07)
Valid N	951	1084	1113	1298	1113	1176	1155	1165
Adj. R-sq.	0.02	0.31	0.02	0.23	0.25	0.21	0.03	0.29

*Coefficients and standard errors (in parentheses). Dependent variable ranges from 0 to 10. Significance codes: ***<0.01, **<0.05.*

(4) Support for Increasing the Population

When asked their views about increasing the size of the earth's human population, respondents were lukewarm—see Figure 4. Unsurprisingly, they were less supportive if told the population increase would mean a lower standard of living for future generations, and more supportive if told that the increase would increase or at least not change future generations' standards of living. That people's support increases if they are asked about an increased population and no change in living standards shows that many people, by default, believe that a population increase would affect future people's standards of living. Insofar as respondents suggest they do not want more population, that is partly because they assume more population will mean lower standards of living.

Respondents were also more inclined to support a higher population if reminded it would mean extra people would get to live or that a smaller population would mean fewer people would get to live. That these kinds of manipulations made a difference suggests that without such a prompt people are not fully thinking through the implications of their answers. For this reason, then, we need to be careful about over-interpreting a seeming lack of concern about the size of the population.

Across the four countries, we did not find any consistent demographic correlates of support for rather than opposition to increasing the population.

Figure 4. Average support for increasing population, by country

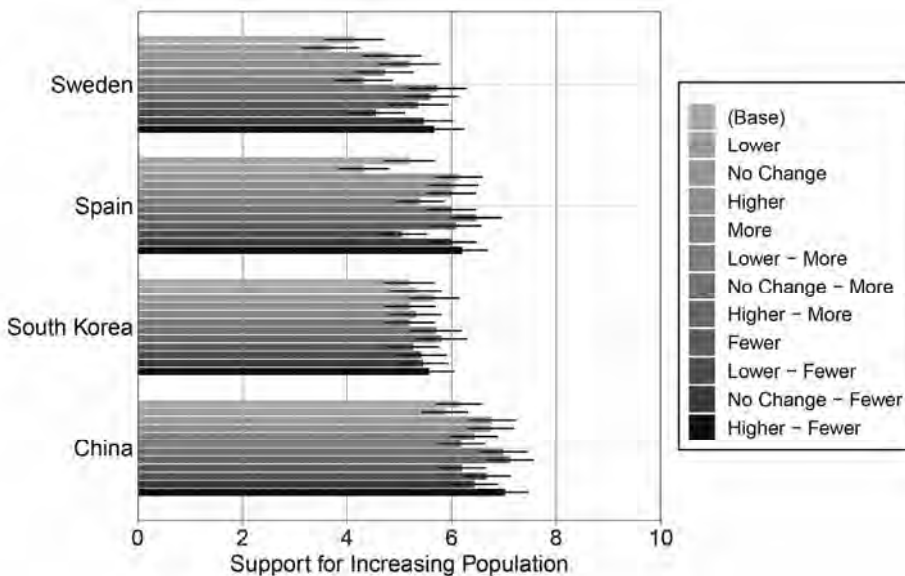


Table 3 presents models parameterizing the relationships represented in Figure 4, plus coefficients for the same two background covariates in Table 2: the three-item index for concern about future people, and the four-item index for institutional trust. Both are strong predictors of support for increased population, as they were of support for policies aimed at future wellbeing. The magnitudes of the relationships are also similar. For both quality and quantity of human life, then, we find evidence that people who are more concerned about future generations and more trusting in major social institutions are more supportive of measures for improving future lives.

Table 3. Models of Support for Increasing Population

		Sweden	Spain	S Korea	China
Change in Living Standards	Lower	-0.52* (0.21)	-0.72** (0.18)	-0.06 (0.18)	-0.04 (0.17)
	No Change	0.70** (0.21)	0.44* (0.18)	0.14 (0.18)	0.48** (0.17)
	Higher	0.74** (0.21)	0.47** (0.18)	0.17 (0.18)	0.73** (0.17)
Reminder	More People	0.68** (0.18)	0.39* (0.15)	0.11 (0.16)	0.37* (0.15)
	Fewer People	0.78** (0.18)	0.32* (0.15)	0.06 (0.16)	0.29 (0.15)
Indices	Concern	0.78** (0.08)	0.62** (0.06)	0.61** (0.07)	0.39** (0.06)
	Trust	0.52** (0.08)	0.56** (0.06)	0.51** (0.07)	0.60** (0.06)
	(Intercept)	4.21** (0.18)	5.51** (0.15)	5.31** (0.16)	6.04** (0.15)
Valid N		1084	1298	1176	1165
Adj. R-sq.		0.19	0.18	0.14	0.16

*Coefficients and standard errors (in parentheses). Dependent variable ranges from 0 to 10. Significance codes: ***<0.01, **<0.05.*

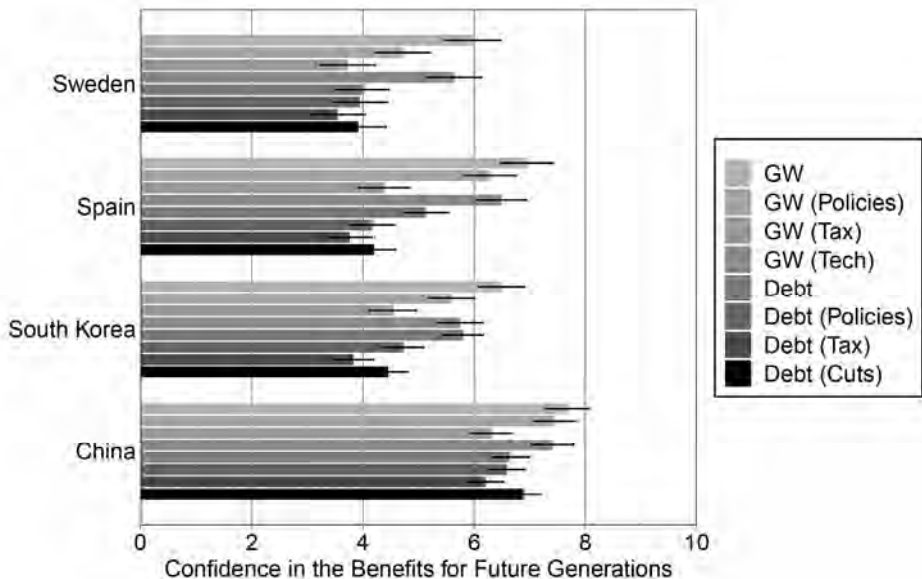
(5) Confidence Versus Effectiveness Scepticism

When asked whether they believed people in the future would really benefit from these policies, respondents' answers were again middling—see Figure 5. Many people appear to be sceptical that policies for reducing global warming or the national debt would actually help future generations. They were significantly less

convinced about the benefits of either cutting spending (to reduce debt) or raising taxes (to reduce either emissions or debt). On the other hand, there was no notable difference between their confidence in the benefits of reducing global warming vis-à-vis cutting the national debt. We also found that trust and confidence are very closely related, much like trust and policy support.

It is difficult to say what causes what: concern about future generations, support for policies, confidence in the policies' effectiveness. We can show, however, that mere mention of taxes changes people's confidence. Respondents who previously received any policy support question about tax (whether for reducing global warming or national debt) were less confident about policies in general. That is, just hearing "tax" made some people less confident, judging by their answers to a subsequent question about government actions generally, including about actions *unrelated to tax*. This shows that effectiveness scepticism is at least to some degree a consequence, not just a cause, of support for or opposition to a policy.

Figure 5. Average confidence in different policies, by country

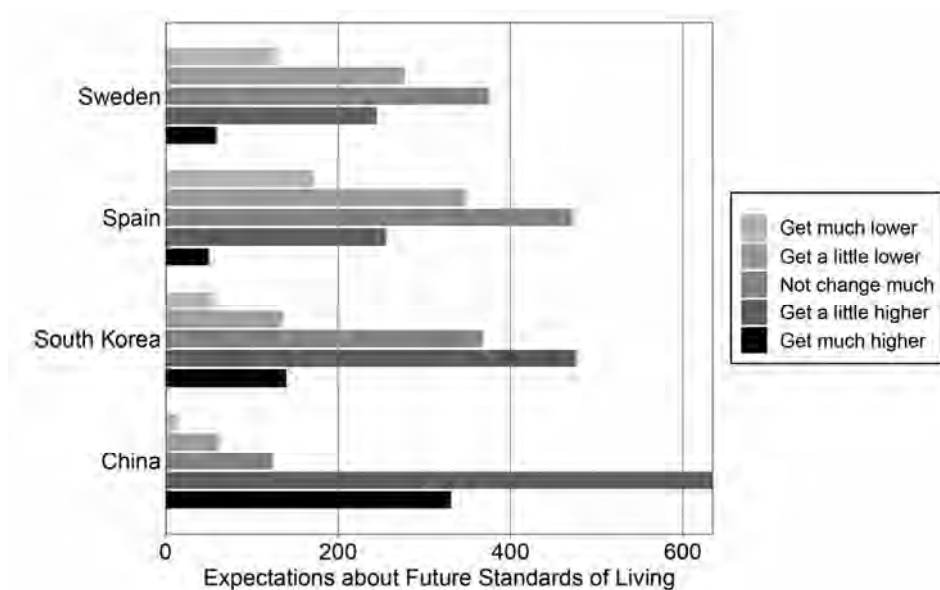


(6) Optimism about Future Standard of Living

Lastly, we asked respondents how they expected standards of living would change in the future. The distribution of the responses appears in Figure 6, and while we

would not want to over-interpret the cross-national differences (given the reasons for caution we articulated earlier), the differences here do some consistent with prior studies about comparative levels of generalized optimism. A YouGov survey in 2015, for example, found Chinese respondents agreed far more than respondents from any other country that the world is “getting better”. In contrast, Swedes were far less positive; a majority thought the world is getting worse.¹

Figure 6. Expectations about future standards of living, by country



In this case, clearly, respondents in the two European countries are far less optimistic about future standards of living. Contrary to what economists generally expect, more of the European respondents said they expected standards of living to decline rather than rise. In the two Asian countries, by comparison, more respondents expected that standards of living would continue rising in the future. We found no demographic variables that consistently predicted more optimism, across the four countries.

There are two possible ways that expectations about future standards of living might be related to people’s willingness to sacrifice for the benefit of future

¹ See <https://yougov.co.uk/topics/lifestyle/articles-reports/2016/01/05/chinese-people-are-most-optimistic-world>.

generations. First, it could be the case that willingness to sacrifice is a consequence of expectations about the future: if so, then people who expect standards of living to decline should be more willing to sacrifice. Alternatively, willingness to sacrifice could reflect general optimism about the future, rooted in positive expectations that sacrifices—and potentially future-oriented policies—will work. In this case, people who expect standards of living to decline should be *less* willing to sacrifice, as they have more negative views of societal functioning, and doubts that any sacrifice they make will in fact benefit future people (perhaps instead of corrupt policymakers and public administrators).

We find the latter view is supported. People who are more optimistic about future standards of living were *more*, not less, willing to sacrifice for future generations—and in all four countries. People who are optimistic about future standards of living are also more trusting, more confident about the benefits of policy interventions (whether climate or debt), more supportive of increasing the population, and more supportive of climate/debt reduction policies. We also found that, in every country, policy support is substantially more correlated with willingness to sacrifice than with the three-item index for concern, or just the other two items on their own. Likewise, in every country, policy support is most correlated with confidence in the policy's effectiveness, which is in turn also more correlated with willingness than with the three-item index for concern.

In sum, then, policy support is more tied to willingness than to the other two items measuring concern (in every country). Willingness appears to be measuring something different than the questions referring to thinking and caring about future generations. Willingness is also more correlated with trust than the other two items. It appears to reflect people's beliefs about the efficacy of sacrificing for the future more than it does people's beliefs about future people's standards of living.

It seems reasonable to think that optimism about future standards of living reflects trust. These two variables correlate (positively), and trust in institutions is a likely reason for people's expectations about the efficacy of their sacrifices. People's support for future-oriented policies reflects their institutional trust more than it does their generalized concerns for future people. We interpret these results to mean there are many people with suspicious outlooks on the world, and their negative views of social institutions—and their pessimism about the effectiveness of key public policies—lead them to be misanthropic.

5. Conclusions

Our empirical study has investigated what value people say they attach to the quality and quantity of future lives, and whether people's apparent lack of concern for

future generations is actually disbelief in the efficacy of policy actions. We have found evidence, based on surveys in four countries, that most people are at least somewhat concerned about future generations. They are even willing to sacrifice their own standard of living, to some degree, so that people in the future can lead better lives. But we have also shown, consistent with prior studies, that many people do not support policy actions that experts say would benefit future generations, at low or even no cost to current generations.

Why does concern about the well-being of future generations not lead to support for policy actions that would contribute to that well-being? Our results suggest that support for such actions is tied not just to the level of people's concern for future generations, but also to their trust in major social institutions, which for many people is not high. Many people do not believe that future-oriented policies will in fact yield significant benefits to people in the future. Many doubt that measures with a short-term cost will actually yield the longer-term benefits that would make them worth the cost. Most people believe that mitigating climate change will make future people's lives better, but they have little confidence that public policies will mitigate climate change. Even if debt could be used to make future generations pay to mitigate climate change, then, current generations might well be suspicious.

Why might doubts about the effectiveness of climate and other future-oriented policies be as prevalent as we have found here? Though this is a topic for another paper, part of the answer may be that measures for environmental protection generally impose significant and concentrated costs on a minority of people: asset-holders and workers in specific industries. We therefore have evidence that workers in polluting industries are therefore less likely to support policies for climate change mitigation (Tvinnereim and Ivarsflaten 2016). And there is now ample evidence that industrial interest groups who stand to lose out from regulatory actions have worked hard politically to prevent or delay those actions (Oreskes and Conway 2010; Farrell 2016; Brulle 2014). One way they have done so is by mounting public campaigns to confuse the broader public, and to spread doubt and misinformation, including about the costs and effectiveness of potential policy responses to the environmental problems their industries cause.

One clear limitation of our study is that we are relying on self-reporting, which may be subject, for example, to social desirability bias. Another potential objection to our study is that we are not adequately quantifying the values we attempt to measure, such as in terms of the metric of money. But, as Neumayer (2007: 300) says, "many effects of climate change simply cannot be adequately monetarily valued."

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