



Immediate rewards or delayed gratification? A conjoint survey experiment of the public's policy preferences

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Abstract

Previous scholarship has focused primarily on how citizens' form policy preferences and how those preferences are taken into account in democratic decision-making. However, the temporal aspect of policy preferences has received little attention, although many significant societal problems have consequences that extend far into the future. To fill the gap, we examine to what extent citizens are willing to support policies, when rewards can only be expected after several electoral cycles. Using a conjoint survey experiment, we demonstrate that while a slight tendency towards more immediate policy rewards is discernible, citizens are not as impatient as has been widely assumed. In contrast with previous research, political trust does not affect the impact of the time horizon of policy choice. Instead, we find that people with higher education are more likely to choose policies the benefits of which materialize in the distant future. These findings add to the growing evidence which suggests that citizens' short-sightedness is not a very strong driver of democratic myopia.

Keywords Long-term policy · Democratic myopia · Conjoint survey experiment

Introduction

It is widely assumed that policy-making in a representative democracy should be determined by public preferences (e.g. Soroka and Wlezien 2005). Indeed, without a functioning link between the will of the people and the output of the political system, a democratic regime will face legitimacy problems. Given the centrality of the public will for democracy, it is unsurprising that much research has focused on how citizens make policy choices and how their policy preferences are communicated through elections.

However, as Jacobs (2008: 193) and Pierson (2004) have noted, research in this field has predominantly focused on *who* gets *what and how*, leaving the *when* largely outside the

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scope of examination when following Laswell's classical definition of politics. In the complex contemporary world, many of the most acute political problems have consequences that extend far into the future. They require what Jacobs (2011) has called 'policy investments', that is, solutions to problems that demand making choices for the long-term. This forces the *when* into the research agenda in the study of policy preferences. As Jacobs (2016: 434) maintains, while long-term policy issues, such as environmental problems or pension funds, have been studied in terms of how these problems should be tackled economically, little is known about intertemporal choices as democratic choices: under what circumstances are democratic governments willing and able to implement long-term policy investments? (Also Wang 2018).

In this article, we examine how the temporal aspect of policy-making affects citizens' policy choices. We rely on a conjoint survey experiment ($n=830$) designed to examine how much the temporal aspect affects the policy choices of ordinary citizens, compared to other relevant policy aspects, such as policy area, expected costs and level of decision-making. Conjoint analysis makes it possible to disentangle the causal effects of multiple factors on the choices of respondents (Hainmueller et al. 2014; Knudsen and Johannesson 2018). This technique therefore makes it possible to determine how the time horizon affects policy choices and to compare the degree of effect with other relevant aspects of these policies.

The results reveal certain indications of a tendency towards more secure short-term policy benefits, but they do not reinforce the assumption that the democratic public is fundamentally short-sighted. Contrasting previous research, we do not find that the effect of time horizon differs depending on political trust. However, people with high educational attainment, considered here as a proxy for political sophistication, are more willing to accept delayed benefits. If, as our findings suggest, the public is not quite as impatient as has previously been thought, the possibilities for long-term policy investments in democracies could be better than widely presumed.

Time and citizens' policy preferences

Representative democracies are widely believed to be predisposed towards short termism in policy-making. Faced with intertemporal choices where investments in future welfare diminish possibilities to advance present welfare, democratic political systems tend to value immediate gratification over possible future rewards (e.g. Nordhaus 1975; Ferrera 2017). Several factors may account for this short-sightedness. A complex world is difficult for a democratic system to deal with, even if the people involved are not particularly short-sighted (MacKenzie 2013: 52). Substantial economic interests could be at stake where powerful economic actors and well-organized interest groups work to ensure their own, short-term benefit (MacKenzie 2013: 44; Jacobs 2016). The fundamental problem for long-term decision-making is that rewards may first be reaped decades after decisions were made. Since those benefitting from long-term decision-making are often not represented when choices are made, democratic policy-making is inherently inclined towards short-term solutions (MacKenzie 2013; Thompson 2010; Tremmel 2009).

From the perspective of elected officials, there are strong incentives to produce short-term wins to secure electoral success, since the public memory is short and interest groups are typically well organized to block long-term reforms that threaten their interests (Jacobs 2016). Moreover, the future is always uncertain, and the distant future is practically impossible to predict with any reasonable amount of certainty. As politicians typically seek

re-election, investing one's political capital on very uncertain future policy rewards, is understandably a risky strategy. Scholarship has demonstrated that politicians often try to time the receiving of policy benefits around elections, in order to maximize electoral success (Sáez and Sinha 2010), and that due to re-election concerns, they struggle with policy choices that require investments in the present for benefits that materialize in the distant future (Ferrera 2017).

Another alleged reason for democratic short-sightedness is that voters, or more broadly citizens, (MacKenzie 2013: 28 ff) are notoriously impatient and demand that politicians deliver the goods immediately. Weaver (1986) notes that voters react more strongly to possible losses rather than potential gains and this predisposition towards negativity incentivizes incumbents to short-termism in order to be re-elected. A tendency towards negativity in political thinking can be seen as a consequence of a more general human tendency to put more emphasis on avoiding losses than making possible gains, which, from an evolutionary perspective, is likely to have contributed to human survival (Soroka et al. 2019; Urminsky and Zauberman 2015; Kahneman and Tversky 2000).

Although institutional arrangements, such as term lengths, create varying settings for the interplay between politicians and voters in terms of intertemporal choices, there is a widespread belief that voters are to blame for democratic short-termism (Jacobs and Matthews 2012). There is, however, very little research directly addressing the impact of the time horizon of a policy on policy choices empirically. While several studies investigate public attitudes towards issues with long-term consequences, such as pension plans or environmental issues, they do not consider the importance of timing of policy rewards in line with the public's policy preferences.

In one notable exception, Healy and Malhotra (2009) assessed voter myopia by looking at how voters responded to investments in relief aid in natural disasters, compared with long-term investments in preparedness to prevent natural disasters. They found conclusive evidence of myopia, documenting voter support for immediate relief aid instead of disaster prevention measures. Despite convincing results, the study has some serious drawbacks. Its conclusions are based on the link between aggregate measures of candidate support at county-level and spending on two different types of natural disaster policies, without any information about why voters may have behaved differently in two consecutive elections. It is by no means obvious that voters have realized that a trade-off existed between two types of policies for handling natural disasters, and if they did, a number of other reasons may have had a stronger impact on their vote choice. Moreover, the analysis is restricted to a 3-year period within just one mandate period at one decision-making level in the USA, which makes drawing general conclusions untenable.

Jacobs and Matthews (2012, 2017) examined citizens' intertemporal policy choices in two articles where they tested for the presence and individual-level determinants of the citizens' preference for short-term policies in the USA, by undertaking survey experiments and representative surveys. While they found clear evidence of myopia, they warned against overstating the results, because the findings did not reveal a 'radically' short-sighted electorate (Jacobs and Matthews 2012: 932). Most importantly, they concluded that to the extent that preference for short-term policy rewards could be detected, it seemed not only to derive from mere impatience, but also because people did not trust politics to deliver on long-term promises. These results cast doubt on the assumption that politicians seeking re-election should be overly cautious about advocating long-term policy investments (Jacobs and Matthews 2012).

The same authors then proceeded to examine the role of institutions in generating public trust for long-term policy investments (Jacobs and Matthews 2017). They designed survey

experiments that varied the decision-making institution (local government, US federal government or military) since public trust in these institutions varies considerably. The findings confirmed that long-term investments were more popular when introduced by institutions perceived as more trustworthy. Moreover, policies with a fiscal constraint, which forced politicians to spend money on a specific policy in question, without the possibility of investing the same money in another area, were supported more strongly. These findings showed that trust in the policy process is key to understanding popular support for long-term policies. Lack of trust in the ability of democratic institutions to deliver future benefits implies that uncertainty could be an important underlying mechanism explaining individual-level preferences for the timing of policy benefits: when people do not trust in political institutions, policy goals of the future start to feel very uncertain to them.

Assessing temporality in public preferences for reducing the number of fossil fuel cars in the USA, also Rinscheid et al. (2020) conclude that the public's unwillingness to support such long-term goals may have been overestimated. The authors do not include a measure of (un)certainly, but instead they demonstrate the significance of psychological distance, which is linked with partisanship: people who, for whatever reason, feel a sense of closeness to environmental concerns, are willing to support major policy shifts aimed at mitigating climate change.

To summarize, the scholarly debates that address the human tendency to short-termism strongly suggest that citizens are also likely to be myopic in their policy preferences (Urminsky and Zauberman 2015), but no conclusive support is found for this contention in the literature on public policy. In fact, much of the available evidence suggests that temporality in public policy preferences is driven less by plain impatience than commonly assumed, and that especially the uncertainty of receiving policy benefits in the future is a key factor in determining public opinion.

The timing of policy benefits seems to be an important but understudied research field. In this study, we add more evidence regarding the short-sighted citizen argument, using a conjoint survey experiment. The conjoint method is suitable for the purpose, because evidence of causal mechanisms, underlying the assumed citizen short-sightedness, is particularly scarce (Urminsky and Zauberman 2015). Moreover, analyses accounting simultaneously for the impact of multiple factors on intertemporal choices are equally rare (Urminsky and Zauberman 2015). The conjoint survey experiment method allows us to start filling this gap, because it is specifically designed to reveal causal mechanisms, while including several factors in the same analysis.

We make several other suggestions in addition to contributing to the limited, existing evidence. Firstly, compared with previous research we offer a broader test of the temporal dimension in policy choices, by using three instead of two temporal levels as experimental manipulations. Secondly, instead of focusing on just one policy area, we examine the temporal dimension across five different policy topics. Thirdly, with the advantage of building on previous research, we include in the experimental design those factors that have been identified as key, outcome certainty and significance, as well as different decision-making institutions that enjoy varying degrees of public trust. Perhaps most importantly, the design allows us to examine whether and how temporality in policy choices varies across respondent groups, in terms of relevant individual-level factors. We here examine differences across age, political sophistication and political trust, all of which have been highlighted as potential factors affecting the time horizon of people (more on this below). Consequently, the study offers a significantly more detailed picture of the temporal aspect of policy choices, both across a combination of policy-level factors and individual-level factors.

Research design

We test our hypotheses with the help of a conjoint experiment. In the following, we first outline the reasons for why this approach is preferable for the current purposes. We then present the basic considerations on the survey sample, before presenting the details of the conjoint attributes and level used here.

Why conjoint analysis

Conjoint analysis provides a way to test multidimensional causal relations on a representative sample (Hainmueller et al. 2014, 2015; Knudsen and Johannesson 2018). While some question the approach and in particular the conclusions to be drawn based on the results (Abramson et al. 2019), this approach offers important advantages compared to more traditional analyses of surveys. Instead of asking respondents directly what policy aspects they prefer or dislike, their preferences are revealed by asking them to choose between alternatives where the features have been randomized. This makes it possible to identify the causal impact of each feature while reducing dangers of social desirability bias, in the form of respondents giving the answers they perceive to be more acceptable. This could potentially be a risk in this case since it may be sensible to admit preferring immediate gains over long-term decision-making, which is usually highly valued in political discourse in Finland and today is even institutionalized in the Committee for the Future in the Finnish Parliament (Koskimaa and Raunio 2020). At the same time, conjoint analysis has been shown to have a relatively high external validity in the sense of being able to recover the true effects when humans make similar choices under real-world conditions (Hainmueller et al. 2015).

The survey sample

Our conjoint experiment was embedded in a survey distributed to an online sample, representative of the Finnish population of voting age, categorized in terms of age, gender and place of residence, as shown in “Appendix” ($n=830$). Since the sample match the general population fairly well, we do not employ weighting when analysing the results.

The sample size in terms of number respondents may be said to be less relevant for conjoint designs, since the unit of analysis is the number of profiles evaluated rather than the number of respondents. Consequently, there is a lack of definitive guidelines comparable to power analysis in a traditional experimental setting. We therefore rely on several rules of thumbs to determine the adequate sample size. A recommended minimum threshold for the number of respondents is $(nta)/c \geq 500$ (Orme 2010: 64), where n is the number of respondents, t is the number of comparisons made (here 7), a is the number of alternatives or profiles to choose from (here 2) and c is the largest number of levels for any attribute (here 15, since the analyses include a 3x5 interaction). This implies a minimum number of respondents (n) should be 535 people. However, it is also necessary to consider generalizability with regard to the general population of interest (Aguinis and Bradley 2014), which in this case is the Finnish population. We therefore decided to increase the sample target to 800. In the end, the number of respondents were 831, when all quotas had been met and

low-quality respondents had been removed from the data.¹ The number of units of analysis is 11,634 (2 profiles × 7 comparisons × 831 respondents).

The survey was distributed during February 2019 using the Qualtrics module for conjoint designs. In the survey, the respondents first completed basic socio-demographic information, before being asked a series of questions about their general political attitudes and preferences. Following this, we included a short introduction to the conjoint experiment. This introduction stated that the respondent would be shown examples that resembled significant real-life policy choices and that they should make seven comparisons. The conjoint analysis was presented as an examination of attitudes to political decision-making and attitudes to different policy proposals, without any reference to the temporal dimension of politics and the experimental component. In the policy proposals, seven attributes with 3–5 levels were randomly varied.

A conjoint analysis of the effect of the time horizon

We have used a choice-based conjoint analysis in which respondents are presented with two alternative profiles that randomly vary multiple attributes with several levels. The levels should be discrete categories describing theoretically, the relevant values of the attribute in question. For each comparison of profiles, the respondents are asked to choose the alternative they prefer.

Each respondent can be asked to evaluate several pairs of profiles, or conjoint tasks. The number of conjoint tasks included in conjoint analyses vary considerably. Bansak et al. (2018) show that treatment effects remain stable, even with up to 30 conjoint tasks. Nevertheless, to avoid any risk of survey satisficing reducing the quality of responses, we limit the number of conjoint tasks to seven evaluations for each respondent, which affords us sufficient opportunities to examine the assumption that citizens prefer short-term policy gains.

In the conjoint, we included the time horizon together with six other attributes that complement the time perspective. These attributes are also identified in previous literature as being important in analysing the temporal dimension of policy choices (Jacobs and Matthews 2012, 2017).

Table 1 summarizes the attributes and levels that were randomly assigned to each of the seven comparisons shown to each respondent.

In the following sections, we describe each of the factors and explain their relevance, before moving on to discussing potential differences in the effects of the time horizon across the characteristics of the respondents.

Attributes and levels

Our primary interest is how the respondents perceive the temporal factor in the policy choices. We operationalize this here with three different time horizons with different implications for the respondent. The shortest time horizon is 0–2 years, referring to the benefits that are expected to materialize in the short-term and within the same electoral cycle, which in Finland is 4 or 5 years, depending on the level of decision-making. The

¹ This included respondents who completed the survey in half the median time and those who took more than 2 h to complete the survey.

Table 1 Attributes and levels in the conjoint experiment

Attribute	Levels (R = Reference category)
Time horizon: When can positive results be expected?	0–2 years (R) 5–10 years 20–30 years
Policy topic	Immigration: Investment to facilitate integration of immigrants (R) Education: Investment to improve basic education Infrastructure: Investment to build new roads Environment: Investment to improve household water quality Public health: Investment to build training facilities and increase health awareness
Level of decision-making: Who is the decision-maker?	Own municipality (R) Parliament EU
Costs: What are the cost implications for the citizens?	No increased taxes or payments (R) A small tax increase A significant tax increase
Certainty: Is it likely that the project will materialize as planned?	Very uncertain (R) Relatively likely Very likely
Benefits: What are the expected benefits?	No significant improvement to current conditions (R) Slight improvement to current conditions Significant improvement to current conditions
Elite cues: What do politicians and experts think?	Both politicians and experts support the policy (R) Politicians are positive, experts are hesitant Experts are positive, politicians are hesitant

next level is 5–10 years, i.e. benefits that are expected to occur after a longer period of time but nevertheless in the foreseeable future. In terms of the political cycle, the time frame spans over at least two mandate periods in Finnish politics. The third level is 20–30 years, which is significantly more distant than the two other levels. For most respondents, such a time frame surely exceeds the planning horizon for one's life in general and for some it may even go beyond their expected remaining life span. In terms of politics, the period stretches over several electoral cycles and raises normative questions concerning the well-being of children and people who are not yet born. These three time horizons correspond to those identified as re-occurring in the research literature concerning intertemporal choice in fields such as marketing, psychology and behavioural economics (Lynch and Zauberma 2006). Here we follow the bulk of the research, which suggests that longer time horizons have a negative effect on policy favourability (H1).

The second attribute concerns *policy area*.

It is commonly understood that citizens value policy areas differently, since life situations and circumstances shape which issues a person considers important. The idea of issue publics refers to the divisions amongst electorates, according to the varying degrees of salience assigned to specific political issues (Krosnick 1990). Many people only care about one or a few political issues and are well informed about them, while they completely ignore all other issues. Such selective attentiveness is necessary when limited time and capacity means people can only devote a restricted amount of time to political matters,

and they then choose the topics most salient to them (Bolsen and Leeper 2013). A recent study shows that issue publics may be more prevalent than previously assumed (Dufresne and Ouellet 2018).

The five policy proposals we included in the conjoint analysis represent five different policy areas that are likely to appeal to different segments of the population: environment, infrastructure, health, education and immigration. The presentation is formulated in such a way that the proposal focuses on a specific decision within each policy area, as shown in Table 1.

The third attribute concerns *the level of government* making the final decision.

Political decision-making processes also vary in terms of their distance from the individual citizen. Some issues are closer to the everyday lives of citizens while others are more distant. Citizens' views of the different political institutions making those decisions also differ. This has been empirically demonstrated by Jacobs and Matthews (2012, 2017), who have shown experimentally that a lack of trust in political institutions injects a feeling of uncertainty into preference formation. Consequently, feelings of trust and general attitudes towards decision-makers are likely to be reflected in citizens' choices with regard to specific policies, especially when it comes to comparing the EU with national decision-making.

The EU has been widely regarded as less popular, as citizens feel that EU decision-making is beyond their reach, contributing to a growing distance between EU nationals and policy-makers (Schmidt 2015). In Finland, voter turnout is approximately 40% in European parliamentary elections compared to more than 70% in national elections, clearly indicating that many citizens are less involved in EU matters. Trust levels for the EU are remarkably low in comparison with the national parliament, and lower than for other societal and political institutions (Bäck et al. 2016: 384–385). Consequently, we expect that policies decided by the EU have an adverse effect on policy favourability, compared to local or national authorities making a decision.

The envisioned costs of the policy constitute the fourth attribute. Even when a person would be willing to support a certain policy in principle, every policy involves expenditures—either directly through increased taxes or other payments or indirectly through budget cuts in other areas. The importance of economic considerations on political behaviour is well documented in extensive literature (e.g. Lewis-Beck and Whitten 2013). The economy matters both as a macro-level factor, affecting people's expectations of how the national economy and prosperity is going to develop (Duch and Stevenson 2008) and as a personal, pocketbook evaluation of one's personal economic prospects (e.g. Compton and Lipsmeyer 2019).

Economists have argued that it is necessary to distinguish between revealed and normative preferences. Revealed preferences are observable actions, while normative preferences are the actual interests of an actor. These are not necessarily identical, as there may be occasions when a person (or any other economic agent) prefers not to reveal their true preferences (Beshears et al. 2008). In the context of this study, a certain policy choice might be desirable in a normative sense but when costs are introduced, the revealed preference could mean choosing another policy option.

The concept of 'willingness to pay' (WTP) has been particularly influential in the study of environmental policy, because of its importance for long-term investments (Guagnano et al. 1994; Carlsson and Martinsson 2001). For citizens, the question is whether they are prepared to accept increased costs in the short-term, or immediately, in exchange for benefits that may materialize much later. Depending on just how distant the policy goal is, some people might only carry the costs without ever being able to enjoy the benefits.

We operationalized this attribute with three levels of costs. Firstly, ‘no increased taxes or payments’ describes an ideal situation where no apparent costs are revealed and provides a baseline for comparison with the other two elements, which involve either ‘a small tax increase’ or ‘a significant tax increase’ to assess the impact of costs.²

The fifth attribute is *outcome certainty*, which is closely associated with WTP (Wielgus et al. 2009). Uncertainty is a central feature in human decision-making, and it is widely considered a plausible explanation as to why people are predisposed towards status quo choices (Samuelson and Zeckhauser 1988). The future is almost by definition less certain, and uncertainty only increases with time. Consequently, the impact of uncertainty on policy outcomes has been studied in different policy areas (Rolfe and Windle 2015: 126). Assessing outcome uncertainty involves risk evaluation (Burghart et al. 2007) and introducing uncertainty in experimental settings also makes the experiment more realistic for participants (Roberts et al. 2008). Jacobs and Matthews (2012, 2017) have repeatedly found outcome uncertainty to be the primary driver of citizen short-sightedness, rather than genuine impatience. They associate this uncertainty with citizens’ lack of trust in the ability of political actors to deliver policy goals.

The sixth attribute concerns *perceived benefits*, which has been identified as a key determinant of policy attitudes in the literature on public acceptance of energy policy (Sütterlin and Siegrist 2017; Visschers and Siegrist 2014), food policy (Costa-Font et al. 2008) and ICT policy Verdegem and Pascal (2009). Assessing it simultaneously with outcome certainty, citizens evaluate expected benefits through a risk calculus, which significantly affects their attitudes towards the proposed new policies (e.g. Visschers and Siegrist 2014).

The extant literature has focused on public acceptance of fundamental changes brought about by technological advances, such as the introduction of solar energy or genetically manipulated nutrition. This is also relevant in terms of the temporal dimension of policy attitudes, since temporally distant policy proposals often entail major changes in people’s daily lives. Therefore, support for policies for the long-term in particular could be affected by how significant the expected benefits are. We measure the impact of perceived benefits by presenting three alternatives for the expected impact on current living conditions: (1) no significant improvements; (2) slight improvements or (3) significant improvements.

The final attribute concerns *elite cues*. Keeping track of politics and remaining informed about various policies is laborious, even for highly engaged citizens. Consequently, ‘as a resource-saving device, individuals will rely on trusted experts and political elites to form their opinions on political issues without having to work through the details of those issues themselves’ (Gilens and Murakawa 2002: 15). Such behaviour can be seen as ‘rational ignorance’, which is compensated for through elite cues (Bechtel et al. 2017). According to optimistic accounts, elite cues can function as shortcuts and help citizens make informed choices without investing an unreasonable amount of time themselves (e.g. Popkin 1991). Others are more sceptical (e.g. Lau and Redlawsk 2001) and some have pointed out that citizens do not only rely on elite cues when forming political preferences (Bullock 2011) and that they even reject cues that disagree with existing attitudes (Darmofal 2005). Nevertheless, citizens’ policy preferences can be shaped by opinion leaders, mainly politicians and experts, and their views on proposed policy choices. For example, Brulle et al. (2012) found elite cues to have the largest impact on public opinion with regard to climate change. In a similar fashion, elite cues from the European Central Bank played an important role

² We do not here calculate specific estimates of the willingness to pay as done by Bechtel et al. (2019) since this is beyond the current aspirations.

in the development of public opinion and protest behaviour in the wake of the 2008 global crisis in Europe (Genovese et al. 2016). However, what matters is not only what they say, but also whether they agree on the best course of action. When politicians and experts disagree, it means citizens get mixed signals as to how to assess a given policy suggestion. It remains unclear how this situation affects attitudes towards policies. For this reason, we operationalize elite cues by distinguishing between two types of elites—politicians and experts—and whether both or only one of them support the policy proposal. Our primary aim is to capture the impact of elite (dis)agreement on policy choice, because elite cues are not necessarily, if ever, clear and unanimous. Especially when it comes to policy goals that lie ahead in the distant future, elite consensus is likely to play an important role in shaping citizens' attitudes. If elites give mixed messages about significant policy proposals with uncertain outcomes, citizens seem unlikely to give those policies their support.

Differences across subgroups

In addition to determining the direct effects of these attributes, we also explore whether the effects are stable across subgroups (Leeper et al. 2020). Since our main interest concerns the impact of the time horizon, we first examine whether there are differences in effects of other attributes depending on the time horizon of policies.

However, we also explore differences in the effects of the time horizon across the characteristics of the respondents, since previous research suggests that there are likely to be important differences. Here we focus on three potentially significant individual-level traits: age, education and political trust, all of which have been emphasized as important factors affecting how people perceive time differences.

Psychologists and behavioural economists have examined age differences in terms of positive time preferences, that is, a predisposition towards the present (or near future) at the expense of the future. While the evidence is inconclusive regarding the direction of the effect, most studies reveal a variation in time discounting and orientation towards the future amongst different age groups (e.g. Read and Read 2004; Strough et al. 2011), suggesting that future orientation in policy choice situations might also differ between individuals in different ages. The commonly theorized mechanism linking age and time preferences states that the expected remaining lifespan corresponds positively with risk-taking propensity (e.g. Bommier 2006); the longer a person expects to live, the more prepared that person is to take risks. This is particularly true when it comes to financial risk-taking (Rolison et al. 2014), which is an important aspect in any policy choice. In the context of our design, this leads us to presume that the negative effects of a longer time horizon are less significant for younger age cohorts (H2).

Political sophistication might be another driver of differences in temporal policy choices. Politically sophisticated individuals follow politics closely, are knowledgeable and hold more stable political opinions (Delli Carpini and Keeter 1996; Rapeli 2013 for review). Due to their more nuanced and deeper understanding of the complexities of political issues, they might also be more likely to show more patience. Politically sophisticated individuals might better realize that making long-term policy is necessary but also time-consuming. This could plausibly make them more willing to accept delays in receiving policy benefits, simply because they understand that it is often necessary to resist the temptation of immediate rewards for even greater rewards in the future. In the absence of a direct measure of sophistication, we use education and thereby follow the bulk of existing research, which has demonstrated a strikingly strong relationship between the two

indicators (e.g. Althaus 2003: 16–18; Highton 2007: 1564–1567).³ We expect the negative effect of a longer time horizon to be less significant for those with higher education (H3).

According to Jacobs and Matthews (2012, 2017), however, the primary force behind short-sighted policy attitudes is political trust. In their estimation, voter myopia is not so much caused by genuine impatience, as is often assumed but by a distrust of democratic politics to produce policy benefits in the long-term. Therefore, the negative effects of a longer time horizon have less impact on those with a high level of political trust (H4).

Methods of analysis

The design had 3645 possible combinations of levels across the factors. Although some of the combinations were unlikely to occur, none of them were logically impossible and we, therefore, did not make any restrictions on the possible combinations, as recommended by Hainmueller et al. (2014).

Examining H1 involves a straightforward regression analysis in which the respondents' choices are included as the dependent variable (coded profile chosen yes/no) and the attributes are included as categorical variables. Standard errors are clustered at the individual level to take into account the fact that each respondent makes seven comparisons. The regression coefficients equal the *Average Marginal Component Effects* (AMCE), or the average change in the probability that a profile will win support when it includes the listed attribute value instead of the baseline attribute value. This is presented here as the increase in favourability of a policy.

It is also possible to examine the interaction between attributes to study whether the causal effects of an attribute depend on other attributes and respondent characteristics. This average component interaction effect (ACIE) can be obtained by including interaction effects. Here we examine whether the attribute effects are stable across the time horizon and respondent characteristics; we include interaction effects. To evaluate the time horizon, we include interactions effects between this and all other attributes. With regard to age, respondents were grouped into four categories: 18–30 (202 respondents); 31–45 (231 respondents); 41–60 (246 respondents) and 61 or older (156 respondents). While there is no objectively correct classification of age groups, this categorization captures different life cycles and provides four groups of relatively equal sizes.⁴ In terms of education, respondents were classified according to whether they had concluded primary (98 respondents), secondary (425 respondents) or tertiary education (298 respondents). When considering political trust, an index was used based on the level of political trust with regard to parliament, politicians and political parties (all scored 0–10 with 10 indicating total trust; Cronbach's $\alpha = 0.93$). The index was subsequently divided into three groups: low (0–9, 298 respondents), intermediate (10–20, 391 respondents) and high political trust (21–30, 87 respondents).

³ As Highton (2007) shows, (high) educational attainment does not lead to high political sophistication as such; however, at an individual level, education is a strong marker for political sophistication. In the appendix, we also examine differences across political interest, which is another commonly used indicator of political sophistication.

⁴ We also tested an alternative classification in which respondents were grouped according to generation (Generation Y, Millennials, Generation X and Boomers). This gave similar results, but since the groups were of unequal sizes, we opted for the current classification.

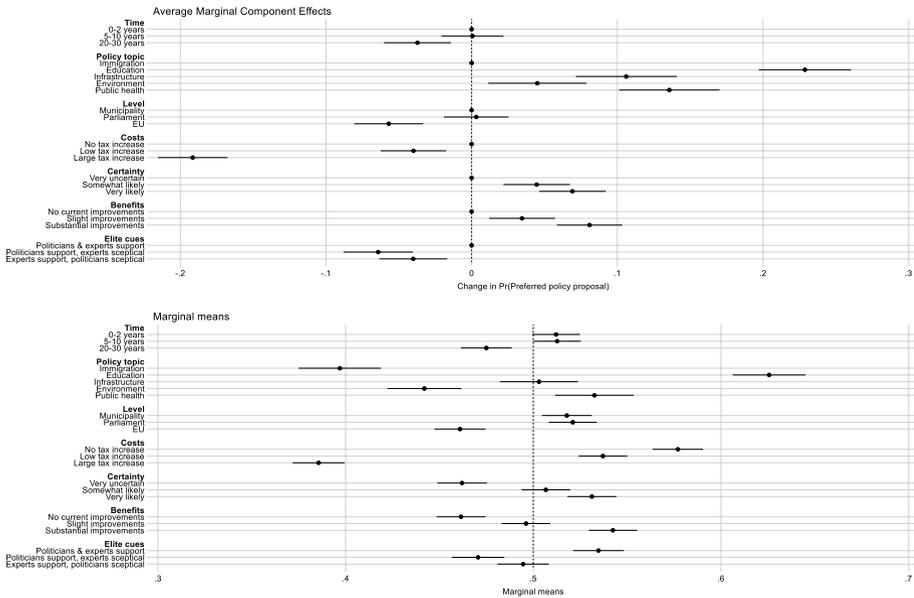


Fig. 1 Direct effects of the attributes

When reporting the findings for the interactions, we followed the recommendation of Leeper et al. (2020) and also reported marginal means, since these are not sensitive to the choice of reference category. The marginal mean shows the average likelihood of a particular attribute level being chosen while ignoring all other factors. All results are presented using coefficient plots, as recommended by Hainmueller et al. (2014).⁵ Estimates are here indicated by dots and 95% confidence intervals show the uncertainty around this point estimate. For ACMEs and ACIEs, there is a vertical line at 0. Point estimates to the right of this line indicate a positive ACME/ACIE and estimates to the left indicates a negative ACME/ACIE. When confidence intervals cross this line, it means that the ACME/ACIE is not significant at $p < 0.05$. The vertical line is at 0.5 for the marginal means, and when the confidence intervals cross this line, we cannot be certain that the marginal means deviate from the overall mean of 0.5. When interpreting the coefficient plots, it is important to realize that overlapping confidence intervals for specific estimates does not necessarily imply that they are statistically indistinguishable, since assessing this requires specific tests (Cumming and Finch 2005).

Results

In Fig. 1, we report the direct effects of all attributes on the probability that a respondent chose a specific policy proposal when faced with two alternatives.

⁵ The regression results are shown in the appendix.

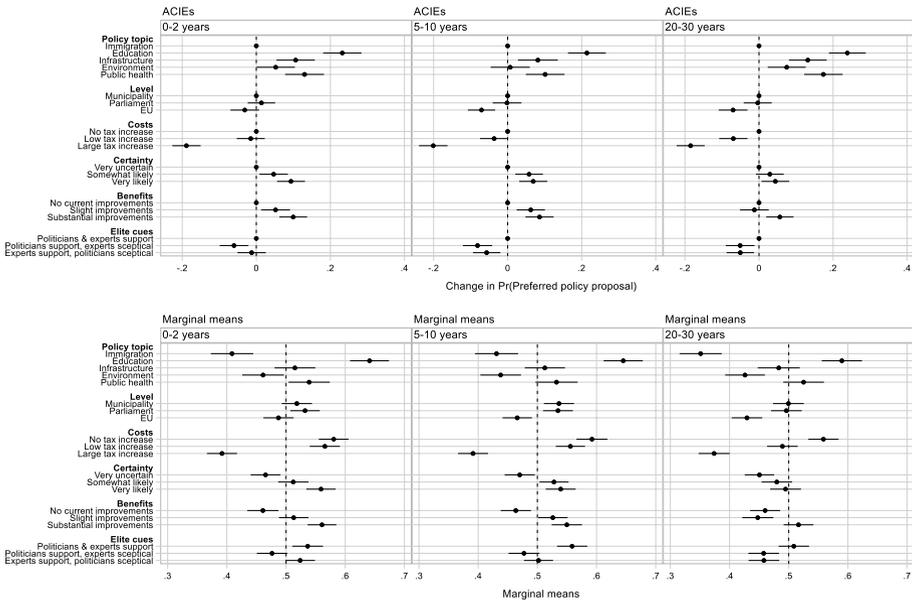


Fig. 2 Differences in effects depending on time

The results regarding time are somewhat mixed. It appears as though people are willing to look beyond immediate rewards and invest in policy goals that produce benefits after 5–10 years, since there is no discernible negative effect on policy favourability. However, the expected negative effect is noticeable for policies in which the time horizon is 20–30 years, where the coefficient of -3.7 indicates that any positive effects of policies are only expected after 20–30 years; this decreases policy favourability by approximately 3.7 percentage points compared to policies in which effects are realized more or less immediately, i.e. after 0–2 years. These findings have great significance for democratic policy-making as it shows that citizens’ patience in waiting for policy outcomes extends beyond the typical electoral cycle.

We also briefly note the most interesting direct effects of other attributes. Compared with a policy proposal concerning immigration, all other topics were more likely to be selected by the respondents. For educational policies, favourability increased by approximately 23 percentage points, while the effects relating to other topics indicated a 5–14 percentage point increase. In terms of decision-making actors or levels, favourability with regard to EU decisions decreased by approximately 5.7 percentage points, compared to decisions made by municipal or national actors. A small expected tax hike does not entail any negative consequences, however, when a large tax increase is expected, favourability decreases by approximately 19 percentage points by comparison with periods when no costs are expected.

Outcome certainty has the expected positive effects on favourability when policies have relatively or very likely (positive) effects. The same is also true for benefits, when positive effects are shown, should slight or substantial improvements to current living conditions be promised.

Finally, elite disagreement has negative effects. Policy favourability decreases by approximately six percentage points when solely politicians support a policy, with

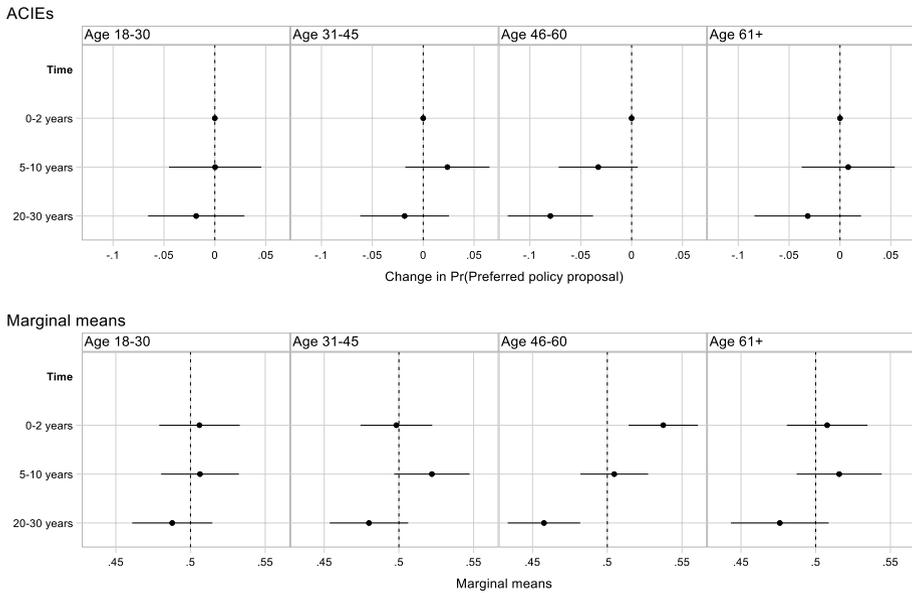


Fig. 3 Differences across age groups

experts remaining sceptical, by comparison with both parties being in agreement, while favourability also decreases by six percentage points when experts support a policy while politicians remain sceptical.

We examine next whether the time horizon has an indirect effect by moderating the impact of other factors. Figure 2 displays the effects on favourability for the three levels of the time horizon.

A visual inspection of Fig. 2 suggests that policy choices are relatively similar across the three different time scenarios, which shows that the effects of other attributes do not differ depending on the time horizon of different policy choices. When inspecting the interaction effects, there are two interaction effects that are significant at a conventional 0.05 threshold. The first concerns costs, where the interaction term between time = 20–30 years and costs = low tax increase is significant ($B = -0.05$, $p = 0.046$). The effect indicates that when the time horizon is long, small tax increases diminish policy favourability by approximately seven percentage points, whereas the effects are negligible when they are closer in time. The other interaction effect which is also significant, concerns benefits, where time = 20–30 years and benefits = slight ($B = -0.06$, $p = 0.019$). This effect means that slight improvements have no effect on policy favourability when the time horizon is sufficiently long, whereas otherwise the effect is positive. Three other interaction effects are significant at a more lenient $p < 0.10$ ('very likely benefits' # '20–30 years'; 'substantial improvements' # '20–30 years'; 'experts' support/politicians sceptical # '5–10 years'). All these differences suggest that a longer time horizon may diminish the effects of other attributes compared to more immediate effects, most likely because respondents find the effects less tangible, when the consequences are so far removed from the present. Nevertheless, and considering the relative stability of most effects, there is nothing to suggest that respondents, in general, prioritize short-term effects over long-term effects.

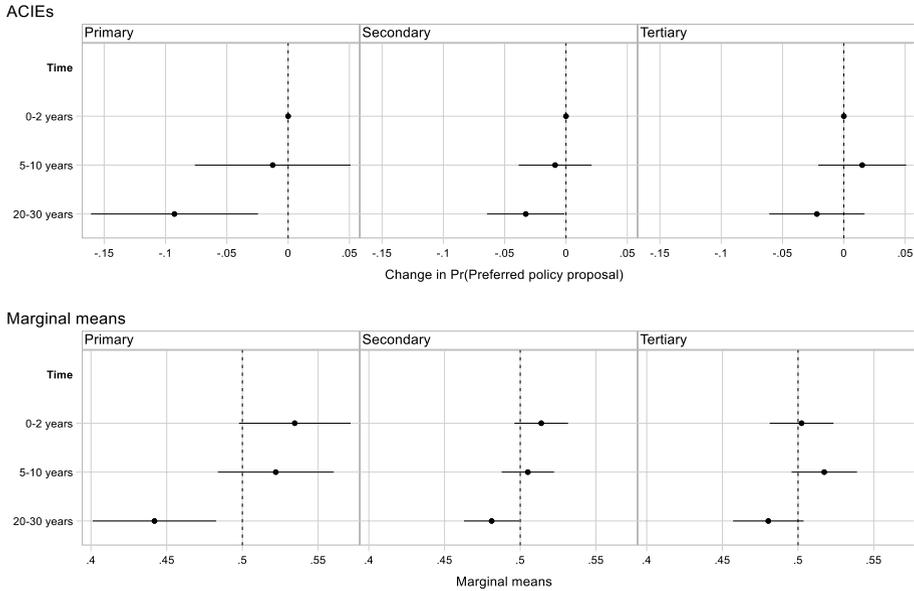


Fig. 4 Differences across educational attainment

Finally, we explore H2-4 and the differences across respondent characteristics. We only show the results for the time horizon to make the figures easier to read (Fig. 3).

The main difference between the age groups is that the negative effect of a longer time horizon is only significant for those aged 46–60. In terms of the other age groups, the effect is also negative but nonsignificant. The interaction effect here is barely significant ($B = -0.062, p = 0.055$); however, since the implications are important, it is worth noting. However, there is no evidence to suggest that the effects are any different for younger generations, which means we reject H2 (Fig. 4).

For political sophistication as measured by education, the negative effect of a time horizon of 20–30 years is more discernible amongst those with only primary education, while it is less significant amongst those with secondary or tertiary education. It is worth noting that this difference cannot be explained by the number of respondents, since there are only 98 respondents/1372 units of analysis who have only been educated to primary level, compared with 425/5950 educated to secondary level and 298/4172 with tertiary education. Although the interaction effect for tertiary education is only significant at $p > 0.10$ ($B = 0.071, p = 0.073$), we nonetheless conclude that H3 is supported, since the negative effects are less apparent amongst those with higher education (Fig. 5).⁶

Finally, when it comes to political trust, the adverse effects of a longer time horizon seem to be less significant amongst those with a high degree of political trust. However, this interpretation is not supported by the interaction effects, which are not at all significant ($B = 0.011, p = 0.775$). Exploring the differences in the slopes of the time horizon still further, depending on the level of trust, also does not reveal any significant differences. Hence,

⁶ In the appendix, we show that the results are similar when operationalizing political sophistication with political interest instead.

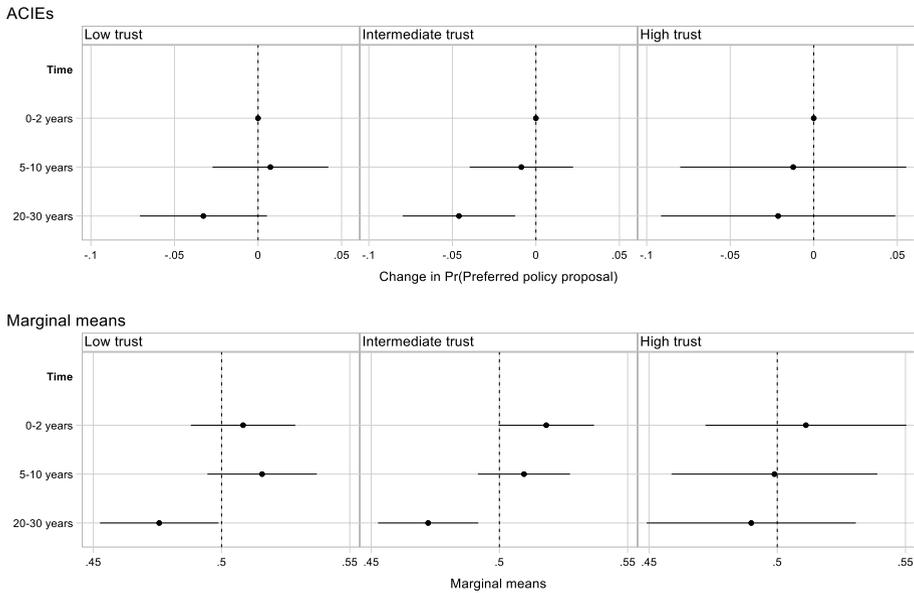


Fig. 5 Differences across levels of political trust

even if the effects of other attributes also appear to be less important amongst those with a high level of political trust, we reject H4 since it is not possible to establish that there are significant differences in the effects of the time horizon depending on the level of trust.

In “Appendix”, we include a number of robustness tests concerning methods of analysis, randomization and the measure of political sophistication. None of these change the substantial conclusions of the analyses, which increases our confidence in the findings.

Discussion

We have examined how ordinary citizens’ policy choices are affected by the temporal distance of expected benefits. To this end, we conducted a conjoint analysis examining the impact of key policy characteristics on policy choices amongst a representative sample of the Finnish voting age population. The experiment was designed to increase existing knowledge with regard to the temporal dimension of policy choice amongst the general public. Our analysis addressed the widespread argument relating to short-sightedness in citizens’ political thinking, which is commonly cited as a key factor influencing democratic systems to favour the formulation of policy for the short term.

In line with previous research, we find that policies with more immediate temporal benefits, are typically more popular than those which are more distant. However, the findings also demonstrate that people are more patient than previously assumed, since a policy with benefits that materialize after 5–10 years is equally popular as a policy guaranteeing benefits within 0–2 years. Only after a time period of 20–30 years does time have a negative effect on the popularity of policy proposals. Furthermore, our results show that the time frame is less important in terms of policy favourability than other policy attributes, such as likely costs and benefits, or even the policy subject. This

suggests that the direst verdicts on the tendency of democracies to value short-termism over long-term planning may well be misplaced. Clearly, citizens are able to see beyond the immediate future and into the following electoral cycle, even if their patience does not extend indefinitely. From the perspective of democratic policy-making, these findings deliver an important message by indicating that ordinary citizens are more patient than previously thought.

The differences amongst a wide range of citizens indicate that the effects are relatively robust across age and political trust. However, we find that political sophistication makes a difference, since those with higher education are more willing to wait longer to reap the rewards of new policies. It is noteworthy that political trust does not make any difference, since it calls into question the findings of Jacobs and Matthews (2012, 2017) who argue that myopia is caused by distrust in the ability of democratic politics to produce policy benefits in the long-term. While there were some indications that people with a higher level of trust were less impatient, it was impossible to establish this with any certainty.

Therefore, our results only partially support the key finding by Jacobs and Matthews (2012, 2017) according to which people are less impatient than they are cautious, they avoid risk and do not trust the political establishment to deliver on long-term policy promises. Uncertainty with regard to policy benefits materializing in the future, decreases the popularity of a policy, which is viewed as evidence of people wanting to ‘play it safe’ because the future is unknown. This interpretation is also supported by the finding that there is a negative effect on policy favourability when policies are enacted by the EU, which is less trusted than national or local authorities. What matters is not only when policy outputs are likely to be realized, but also who makes the decisions allowing citizens to trust the future outputs that are promised.

While these findings seem to suggest that planning for the long term is not impossible in democracies, the results indicate some uncertainties and more empirical testing is still needed. Most importantly, our empirical analysis is limited to the case of Finland and cannot necessarily be generalized outside this specific context. More research is therefore needed to examine the importance of *when* people get what and how. The effects of sophistication and trust could, for example, be influenced by country-specific circumstances.

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Appendix

See Tables 2, 3, 4, 5, 6 and 7

Table 2 Respondent characteristics compared to general population in Finland

	Sample respondents (<i>n</i> = 830) %	General population in Finland (Excluding Åland islands) %
<i>Age</i>		
18–29	22.9	23.0
30–39	18.9	19.0
40–49	18.0	18.0
50–59	20.4	20.0
60–69	19.9	20.0
<i>Gender</i>		
Male	49.6	50
Female	50.4	50
<i>Area of living</i>		
West Finland	14.8	13.0
Ostrobothnia	15.4	14.0
Uusimaa (incl. Helsinki)	30.1	30.0
Central Finland	8.7	15.0
South Finland	12.2	10.0
East Finland	15.3	14.0
Lapland	3.6	4.0

Table 3 Linear regression results for AMCEs

	Coef.	SE	P	95% CI	
<i>Time (ref. 0–2 years)</i>					
5–10 years	0.001	0.011	0.959	–0.021	0.022
20–30 years	–0.037	0.012	0.002	–0.060	–0.014
<i>Policy topic (ref. Immigration)</i>					
Education	0.229	0.016	0.000	0.197	0.260
Infrastructure	0.106	0.018	0.000	0.072	0.141
Environment	0.045	0.017	0.009	0.011	0.079
Public health	0.136	0.018	0.000	0.101	0.170
<i>Decision-making level (ref. Municipal)</i>					
Parliament	0.003	0.011	0.779	–0.019	0.025
EU	–0.057	0.012	0.000	–0.081	–0.033
<i>Costs (ref. no tax increase)</i>					
Low tax increase	–0.040	0.011	0.001	–0.062	–0.017
Large tax increase	–0.191	0.012	0.000	–0.215	–0.168
<i>Outcome certainty (ref. Very uncertain)</i>					
Somewhat likely	0.045	0.012	0.000	0.022	0.067
Very likely	0.069	0.012	0.000	0.046	0.092
<i>Benefits (ref. no improvements)</i>					
Slight improvements	0.035	0.012	0.003	0.012	0.057
Substantial improvements	0.081	0.011	0.000	0.059	0.103
<i>Elite cues (ref. politicians and experts support)</i>					
Politicians support, experts sceptical	–0.064	0.012	0.000	–0.088	–0.040
Politicians sceptical, experts support	–0.040	0.012	0.001	–0.063	–0.017
Constant	0.462	0.020	0.000	0.423	0.501
Number of obs	11,634				

Entries are regression coefficients (Coef.) from a linear regression analysis with clustered standard errors (SE), *P* values (*P*) and 95% confidence intervals (95% CI)

Table 4 Differences in effects across time horizon

	Coef.	SE	P	95% CI	
<i>Time (ref. 0–2 years)</i>					
5–10 years	0.081	0.045	0.070	–0.007	0.169
20–30 years	0.046	0.044	0.291	–0.040	0.132
<i>Policy topic (ref. Immigration)</i>					
Education	0.232	0.026	0.000	0.181	0.284
Infrastructure	0.106	0.026	0.000	0.054	0.158
Environment	0.052	0.026	0.047	0.001	0.104
Public health	0.130	0.027	0.000	0.078	0.183
Education #5–10 years	–0.018	0.036	0.609	–0.088	0.052
Education #20–30 years	0.006	0.035	0.856	–0.062	0.075
Infrastructure #5–10 years	–0.025	0.035	0.485	–0.094	0.044
Infrastructure #20–30 years	0.026	0.034	0.453	–0.042	0.093
Environment #5–10 years	–0.045	0.035	0.200	–0.115	0.024
Environment #20–30 years	0.023	0.034	0.508	–0.044	0.090
Public health #5–10 years	–0.029	0.034	0.396	–0.096	0.038
Public health #20–30 years	0.044	0.035	0.211	–0.025	0.112
<i>Decision-making level (ref. Municipal)</i>					
Parliament	0.014	0.019	0.464	–0.023	0.051
EU	–0.031	0.020	0.116	–0.070	0.008
Parliament #5–10 years	–0.016	0.027	0.566	–0.069	0.038
Parliament #20–30 years	–0.017	0.027	0.523	–0.070	0.036
EU #5–10 years	–0.039	0.026	0.129	–0.091	0.012
EU #20–30 years	–0.039	0.026	0.141	–0.091	0.013
<i>Costs (ref. no tax increase)</i>					
Low tax increase	–0.015	0.019	0.437	–0.053	0.023
Large tax increase	–0.189	0.020	0.000	–0.227	–0.150
Low tax increase #5–10 years	–0.021	0.028	0.440	–0.076	0.033
Low tax increase #20–30 years	–0.054	0.027	0.046	–0.108	–0.001
Large tax increase #5–10 years	–0.012	0.027	0.644	–0.064	0.040
Large tax increase #20–30 years	0.004	0.026	0.880	–0.047	0.055
<i>Outcome certainty (ref. Very uncertain)</i>					
Somewhat likely	0.047	0.020	0.017	0.008	0.085
Very likely	0.094	0.019	0.000	0.056	0.131
Somewhat likely #5–10 years	0.011	0.027	0.687	–0.043	0.065
Somewhat likely # 20–30 years	–0.017	0.026	0.502	–0.069	0.034
Very likely #5–10 years	–0.024	0.027	0.364	–0.077	0.028
Very likely #20–30 years	–0.049	0.026	0.054	–0.100	0.001
<i>Benefits (ref. no improvements)</i>					
Slight improvements	0.052	0.020	0.009	0.013	0.091
Substantial improvements	0.100	0.019	0.000	0.062	0.137
Slight improvements #5–10 years	0.011	0.027	0.696	–0.042	0.063
Slight improvements #20–30 years	–0.064	0.027	0.019	–0.118	–0.010
Substantial improvements #5–10 years	–0.014	0.027	0.609	–0.066	0.039
Substantial improvements #20–30 years	–0.043	0.026	0.095	–0.094	0.008

Table 4 (continued)

	Coef.	SE	P	95% CI	
<i>Elite cues (ref. politicians and experts support)</i>					
Politicians support, experts sceptical	−0.060	0.020	0.002	−0.099	−0.021
Politicians sceptical, experts support	−0.013	0.020	0.517	−0.051	0.026
Politicians support, experts sceptical #5–10 years	−0.021	0.028	0.444	−0.075	0.033
Politicians support, experts sceptical #20–30 years	0.009	0.027	0.730	−0.043	0.061
Politicians sceptical, experts support #5–10 years	−0.044	0.026	0.086	−0.094	0.006
Politicians sceptical, experts support #20–30 years	−0.038	0.026	0.144	−0.089	0.013
Constant	0.408	0.031	0.000	0.346	0.470
Number of obs	11,634				

Entries are regression coefficients (Coef.) from a linear regression analysis with clustered standard errors (SE), *P* values (*P*) and 95% confidence intervals (95% CI)

Table 5 Differences in effects across respondents' age

	Coef.	SE	P	95% CI	
<i>Time (ref. 0–2 years)</i>					
5–10 years	0.000	0.023	0.989	–0.045	0.045
20–30 years	–0.018	0.024	0.447	–0.065	0.029
<i>Age class (ref. 18–30)</i>					
31–45	–0.141	0.056	0.012	–0.250	–0.032
46–60	–0.011	0.055	0.840	–0.119	0.097
61 or more	–0.060	0.058	0.302	–0.174	0.054
5–10 years#31–45	0.023	0.031	0.451	–0.038	0.085
5–10 years#46–60	–0.033	0.030	0.274	–0.093	0.026
5–10 years#61 or more	0.008	0.033	0.812	–0.056	0.072
20–30 years#31–45	0.000	0.033	0.998	–0.064	0.064
20–30 years#46–60	–0.062	0.032	0.055	–0.124	0.001
20–30 years#61 or more	–0.013	0.036	0.706	–0.083	0.057
<i>Policy topic (ref. Immigration)</i>					
Education	0.201	0.034	0.000	0.134	0.269
Infrastructure	0.004	0.035	0.919	–0.065	0.072
Environment	0.006	0.036	0.870	–0.066	0.077
Public health	0.118	0.036	0.001	0.047	0.189
Education #31–45	0.055	0.046	0.234	–0.036	0.146
Education #46–60	0.020	0.044	0.652	–0.067	0.107
Education #61 or more	0.038	0.049	0.442	–0.059	0.135
Infrastructure #31–45	0.146	0.048	0.003	0.051	0.241
Infrastructure #46–60	0.138	0.049	0.005	0.043	0.233
Infrastructure #61 or more	0.124	0.051	0.016	0.024	0.225
Environment #31–45	0.084	0.049	0.084	–0.011	0.179
Environment #46–60	0.041	0.048	0.390	–0.053	0.135
Environment #61 or more	0.036	0.054	0.505	–0.070	0.142
Public health #31–45	0.061	0.050	0.224	–0.037	0.159
Public health #46–60	0.006	0.048	0.899	–0.088	0.100
Public health #61 or more	–0.004	0.053	0.945	–0.108	0.101
<i>Decision-making level (ref. Municipal)</i>					
Parliament	–0.029	0.023	0.207	–0.074	0.016
EU	–0.027	0.025	0.284	–0.077	0.023
Parliament #31–45	0.057	0.032	0.077	–0.006	0.120
Parliament #46–60	0.029	0.031	0.354	–0.032	0.089
Parliament #61 or more	0.043	0.034	0.204	–0.023	0.110
EU #31–45	0.023	0.033	0.484	–0.042	0.088
EU #46–60	–0.082	0.034	0.016	–0.148	–0.015
EU #61 or more	–0.063	0.039	0.105	–0.139	0.013
<i>Costs (ref. no tax increase)</i>					
Low tax increase	–0.083	0.024	0.000	–0.130	–0.037
Large tax increase	–0.211	0.024	0.000	–0.258	–0.164
Low tax increase #31–45	0.065	0.032	0.039	0.003	0.127
Low tax increase #46–60	0.045	0.032	0.164	–0.018	0.108

Table 5 (continued)

	Coef.	SE	P	95% CI	
Low tax increase #61 or more	0.054	0.035	0.128	−0.016	0.123
Large tax increase #31–45	0.031	0.033	0.353	−0.034	0.096
Large tax increase #46–60	−0.007	0.033	0.833	−0.071	0.058
Large tax increase #61 or more	0.062	0.037	0.095	−0.011	0.135
<i>Outcome certainty (ref. Very uncertain)</i>					
Somewhat likely	0.035	0.023	0.128	−0.010	0.081
Very likely	0.061	0.023	0.009	0.016	0.107
Somewhat likely #31–45	0.028	0.033	0.399	−0.037	0.092
Somewhat likely #46–60	0.010	0.032	0.745	−0.052	0.072
Somewhat likely #61 or more	−0.012	0.034	0.716	−0.080	0.055
Very likely #31–45	−0.009	0.032	0.786	−0.072	0.055
Very likely #46–60	0.029	0.032	0.372	−0.034	0.091
Very likely #61 or more	0.011	0.035	0.759	−0.058	0.079
<i>Benefits (ref. no improvements)</i>					
Slight improvements	0.047	0.023	0.044	0.001	0.093
Substantial improvements	0.076	0.024	0.002	0.029	0.123
Slight improvements #31–45	−0.004	0.032	0.890	−0.068	0.059
Slight improvements #46–60	−0.014	0.031	0.663	−0.075	0.048
Slight improvements #61 or more	−0.042	0.036	0.244	−0.114	0.029
Substantial improvements #31–45	−0.011	0.032	0.745	−0.074	0.053
Substantial improvements #46–60	0.010	0.032	0.741	−0.052	0.072
Substantial improvements #61 or more	0.031	0.035	0.377	−0.037	0.099
<i>Elite cues (ref. politicians and experts support)</i>					
Politicians support, experts sceptical	−0.060	0.024	0.014	−0.108	−0.012
Politicians sceptical, experts support	−0.039	0.025	0.122	−0.088	0.010
Politicians support, experts sceptical #31–45	0.008	0.034	0.825	−0.059	0.074
Politicians support, experts sceptical #46–60	−0.026	0.033	0.434	−0.090	0.039
Politicians support, experts sceptical #61 or more	0.008	0.037	0.821	−0.064	0.081
Politicians sceptical, experts support #31–45	0.001	0.033	0.984	−0.065	0.066
Politicians sceptical, experts support #46–60	0.012	0.033	0.730	−0.054	0.077
Politicians sceptical, experts support #61 or more	−0.028	0.037	0.445	−0.100	0.044
Constant	0.517	0.040	0.000	0.438	0.597
Number of obs	11,634				

Entries are regression coefficients (Coef.) from a linear regression analysis with clustered standard errors (SE), *P* values (*P*) and 95% confidence intervals (95% CI)

Robustness tests

Type of analysis

To examine whether the results were due to the type of statistical analysis, we tested a model without clustered standard errors and another model with multilevel analysis with fixed effects. The results are shown in Tables 7, 8.

Table 6 Differences in effects across respondents' education

	Coef.	SE	P	95% CI	
<i>Time (ref. 0–2 years)</i>					
5–10 years	–0.013	0.032	0.693	–0.075	0.050
20–30 years	–0.093	0.034	0.007	–0.159	–0.026
<i>Education (ref. Primary)</i>					
Secondary	0.035	0.059	0.556	–0.082	0.152
Tertiary	0.014	0.063	0.831	–0.111	0.138
5–10 years#Secondary	0.004	0.035	0.917	–0.065	0.073
5–10 years#Tertiary	0.028	0.037	0.452	–0.044	0.099
20–30 years#Secondary	0.060	0.038	0.112	–0.014	0.134
20–30 years #Tertiary	0.071	0.039	0.073	–0.006	0.148
<i>Policy topic (ref. Immigration)</i>					
Education	0.210	0.050	0.000	0.111	0.309
Infrastructure	0.113	0.050	0.023	0.015	0.211
Environment	0.171	0.043	0.000	0.086	0.256
Public health	0.218	0.050	0.000	0.121	0.315
Education #Secondary	0.027	0.055	0.623	–0.081	0.135
Education #Tertiary	0.012	0.057	0.837	–0.101	0.124
Infrastructure #Secondary	0.016	0.055	0.771	–0.092	0.125
Infrastructure #Tertiary	–0.046	0.058	0.431	–0.161	0.069
Environment #Secondary	–0.140	0.049	0.005	–0.237	–0.043
Environment #Tertiary	–0.151	0.053	0.004	–0.254	–0.048
Public health #Secondary	–0.082	0.055	0.136	–0.190	0.026
Public health #Tertiary	–0.107	0.058	0.065	–0.221	0.007
<i>Decision-making level (ref. Municipal)</i>					
Parliament	0.054	0.031	0.082	–0.007	0.115
EU	0.011	0.034	0.733	–0.055	0.078
Parliament #Secondary	–0.065	0.035	0.061	–0.134	0.003
Parliament #Tertiary	–0.050	0.037	0.177	–0.122	0.023
EU #Secondary	–0.074	0.038	0.049	–0.148	0.000
EU #Tertiary	–0.084	0.039	0.033	–0.162	–0.007
<i>Costs (ref. no tax increase)</i>					
Low tax increase	–0.077	0.031	0.013	–0.137	–0.016
Large tax increase	–0.163	0.034	0.000	–0.229	–0.097
Low tax increase #Secondary	0.036	0.035	0.306	–0.033	0.104
Low tax increase #Tertiary	0.050	0.036	0.168	–0.021	0.122
Large tax increase #Secondary	–0.041	0.038	0.274	–0.115	0.033
Large tax increase #Tertiary	–0.023	0.039	0.553	–0.101	0.054
<i>Outcome certainty (ref. Very uncertain)</i>					
Somewhat likely	–0.010	0.035	0.773	–0.079	0.059
Very likely	0.033	0.034	0.327	–0.033	0.099
Somewhat likely #Secondary	0.053	0.039	0.170	–0.023	0.129
Somewhat likely #Tertiary	0.077	0.040	0.052	–0.001	0.155
Very likely #Secondary	0.041	0.037	0.274	–0.032	0.114
Very likely #Tertiary	0.040	0.039	0.305	–0.036	0.116

Table 6 (continued)

	Coef.	SE	P	95% CI	
<i>Benefits (ref. no improvements)</i>					
Slight improvements	0.031	0.032	0.326	−0.031	0.093
Substantial improvements	0.063	0.038	0.093	−0.011	0.137
Slight improvements #Secondary	−0.016	0.035	0.660	−0.085	0.054
Slight improvements #Tertiary	0.032	0.037	0.391	−0.041	0.105
Substantial improvements #Secondary	0.011	0.041	0.782	−0.068	0.091
Substantial improvements #Tertiary	0.030	0.042	0.478	−0.053	0.113
<i>Elite cues (ref. politicians and experts support)</i>					
Politicians support, experts sceptical	−0.073	0.031	0.017	−0.134	−0.013
Politicians sceptical, experts support	−0.013	0.035	0.714	−0.080	0.055
Politicians support, experts sceptical #Secondary	0.023	0.035	0.506	−0.046	0.092
Politicians support, experts sceptical #Tertiary	−0.011	0.037	0.759	−0.084	0.062
Politicians sceptical, experts support #Secondary	−0.033	0.038	0.386	−0.108	0.042
Politicians sceptical, experts support #Tertiary	−0.025	0.040	0.526	−0.104	0.053
Constant	0.441	0.053	0.000	0.337	0.545
Number of obs	11,494				

Entries are regression coefficients (Coef.) from a linear regression analysis with clustered standard errors (SE), *P* values (*P*) and 95% confidence intervals (95% CI)

The substantive results are the same in all three models, meaning the type of statistical method used is unlikely to explain the results.

Differences across conjoint tasks

According to Hainmueller et al. (2014), it is important to establish that effects are similar across pairs of evaluations. In this case, we included seven rounds of comparisons to increase the number of units of analysis and evaluate effects both within and between subjects. To test this, we included interaction effects for each round and all attributes to assess whether the effects differed. The plot in Fig. 6 shows the results.

We find some significant interaction effects for outcome certainty in round 6 and round 7, which entails that the positive effect of very likely outcomes is weaker in the last few rounds. However, there are no systematic weakening of effects as the results generally appear to be stable. Most importantly for our purposes, there are no significant

Table 7 Differences in effects across respondents' level of political trust

	Coef.	SE	P	95% CI	
<i>Time (ref. 0–2 years)</i>					
5–10 years	0.007	0.018	0.674	–0.027	0.042
20–30 years	–0.033	0.019	0.091	–0.071	0.005
<i>Political trust (ref low)</i>					
Intermediate	0.062	0.043	0.152	–0.023	0.147
High	0.236	0.073	0.001	0.093	0.380
5–10 years #Intermediate	–0.016	0.024	0.496	–0.062	0.030
5–10 years #High	–0.020	0.038	0.605	–0.094	0.055
20–30 years #Intermediate	–0.013	0.026	0.605	–0.064	0.037
20–30 years #High	0.011	0.040	0.775	–0.067	0.090
<i>Policy topic (ref. Immigration)</i>					
Education	0.283	0.026	0.000	0.233	0.333
Infrastructure	0.191	0.029	0.000	0.134	0.248
Environment	0.101	0.029	0.000	0.045	0.157
Public health	0.217	0.029	0.000	0.161	0.274
Education #Intermediate	–0.076	0.035	0.028	–0.145	–0.008
Education #High	–0.204	0.059	0.001	–0.321	–0.088
Infrastructure #Intermediate	–0.136	0.038	0.000	–0.211	–0.061
Infrastructure #High	–0.192	0.065	0.003	–0.319	–0.065
Environment #Intermediate	–0.091	0.038	0.017	–0.165	–0.016
Environment #High	–0.187	0.059	0.002	–0.303	–0.071
Public health #Intermediate	–0.132	0.038	0.001	–0.207	–0.057
Public health #High	–0.178	0.067	0.008	–0.309	–0.047
<i>Decision-making level (ref. Municipal)</i>					
Parliament	–0.013	0.018	0.478	–0.049	0.023
EU	–0.079	0.021	0.000	–0.119	–0.039
Parliament #Intermediate	0.037	0.025	0.131	–0.011	0.086
Parliament #High	–0.019	0.042	0.659	–0.102	0.065
EU #Intermediate	0.034	0.027	0.213	–0.019	0.087
EU #High	0.006	0.041	0.875	–0.074	0.087
<i>Costs (ref. no tax increase)</i>					
Low tax increase	–0.030	0.019	0.123	–0.067	0.008
Large tax increase	–0.211	0.021	0.000	–0.252	–0.171
Low tax increase #Intermediate	–0.013	0.025	0.597	–0.063	0.036
Low tax increase #High	–0.044	0.042	0.297	–0.126	0.039
Large tax increase #Intermediate	0.027	0.027	0.312	–0.025	0.080
Large tax increase #High	0.009	0.045	0.841	–0.079	0.097
<i>Outcome certainty (ref. Very uncertain)</i>					
Somewhat likely	0.025	0.019	0.204	–0.013	0.063
Very likely	0.060	0.020	0.002	0.022	0.099
Somewhat likely #Intermediate	0.032	0.026	0.218	–0.019	0.082
Somewhat likely #High	–0.032	0.043	0.449	–0.116	0.051
Very likely #Intermediate	0.016	0.026	0.522	–0.034	0.067
Very likely #High	–0.042	0.042	0.317	–0.123	0.040

Table 7 (continued)

	Coef.	SE	P	95% CI	
<i>Benefits (ref. no improvements)</i>					
Slight improvements	0.024	0.020	0.224	−0.015	0.062
Substantial improvements	0.080	0.019	0.000	0.042	0.118
Slight improvements #Intermediate	0.016	0.026	0.535	−0.035	0.067
Slight improvements #High	0.018	0.040	0.652	−0.060	0.096
Substantial improvements #Intermediate	0.008	0.025	0.756	−0.042	0.058
Substantial improvements #High	−0.020	0.041	0.625	−0.100	0.060
<i>Elite cues (ref. politicians and experts support)</i>					
Politicians support, experts sceptical	−0.044	0.020	0.028	−0.083	−0.005
Politicians sceptical, experts support	−0.024	0.020	0.241	−0.063	0.016
Politicians support, experts sceptical #Intermediate	−0.031	0.027	0.242	−0.084	0.021
Politicians support, experts sceptical #High	−0.049	0.042	0.241	−0.132	0.033
Politicians sceptical, experts support #Intermediate	−0.022	0.026	0.402	−0.074	0.030
Politicians sceptical, experts support #High	−0.069	0.042	0.098	−0.151	0.013
Constant	0.421	0.033	0.000	0.357	0.485
Number of obs	10,864				

Entries are regression coefficients (Coef.) from a linear regression analysis with clustered standard errors (SE), *P* values (*P*) and 95% confidence intervals (95% CI)

interaction effects for time horizon, which shows that this was unaffected by any fatigue in answering. We are therefore confident that our results are unaffected by the number of evaluations made by the respondents.

Political interest as a measure of political sophistication

It may be argued that political interest is a more apt indicator of political sophistication, or at least measures more relevant aspects of sophistication such as enthusiasm for political matters. To explore this possibility, we examine differences across political interest in Fig. 7.

As can be seen, there is negative effect of a long time horizon for those with low levels of interest, whereas the effect is not significant for those with high levels of political interest. Since this pattern resembles the results for education, we remain convinced that the results are unaffected by the operationalization of political sophistication.

Table 8 Statistical methods

	OLS regression w. clustered SE (Reported results)	OLS without clustered SE	Multilevel analysis with fixed effects and random intercept
<i>Time (ref. 0–2 years)</i>			
5–10 years	0.001 (0.011)	0.001 (0.011)	0.001 (0.011)
20–30 years	–0.037*** (0.012)	–0.037*** (0.011)	–0.037*** (0.011)
<i>Policy topic (ref. Immigration)</i>			
Education	0.229*** (0.016)	0.229*** (0.014)	0.229*** (0.014)
Infrastructure	0.106*** (0.018)	0.106*** (0.014)	0.106*** (0.014)
Environment	0.045*** (0.017)	0.045*** (0.014)	0.045*** (0.014)
Public health	0.136*** (0.018)	0.136*** (0.014)	0.136*** (0.014)
<i>Decision-making level (ref. Municipal)</i>			
Parliament	0.003 (0.011)	0.003 (0.011)	0.003 (0.011)
EU	–0.057*** (0.012)	–0.057*** (0.011)	–0.057*** (0.011)
<i>Costs (ref. no tax increase)</i>			
Low tax increase	–0.040*** (0.011)	–0.040*** (0.011)	–0.040*** (0.011)
Large tax increase	–0.191*** (0.012)	–0.191*** (0.011)	–0.191*** (0.011)
<i>Outcome certainty (ref. Very uncertain)</i>			
Somewhat likely	0.045*** (0.012)	0.045*** (0.011)	0.045*** (0.011)
Very likely	0.069*** (0.012)	0.069*** (0.011)	0.069*** (0.011)
<i>Benefits (ref. no improvements)</i>			
Slight improvements	0.035*** (0.012)	0.035*** (0.011)	0.035*** (0.011)
Substantial improvements	0.081*** (0.011)	0.081*** (0.011)	0.081*** (0.011)
<i>Elite cues (ref. politicians and experts support)</i>			
Politicians support, experts sceptical	–0.064*** (0.012)	–0.064*** (0.011)	–0.064*** (0.011)
Politicians sceptical, experts support	–0.040*** (0.012)	–0.040*** (0.011)	–0.040*** (0.011)
Constant	0.462*** (0.020)	0.462*** (0.019)	0.462*** (0.019)

Table 8 (continued)

Standard errors are in parenthesis

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

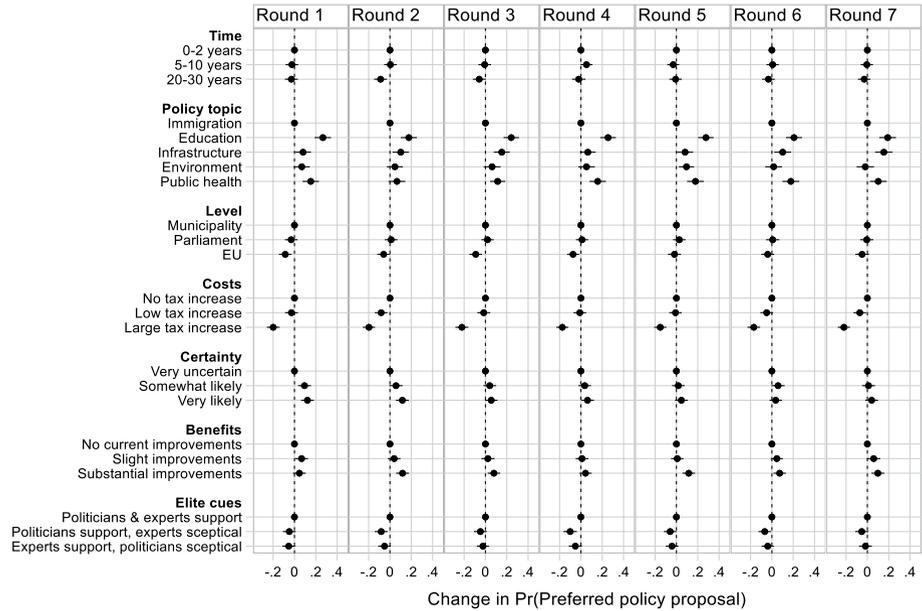


Fig. 6 Differences across pairs of evaluation

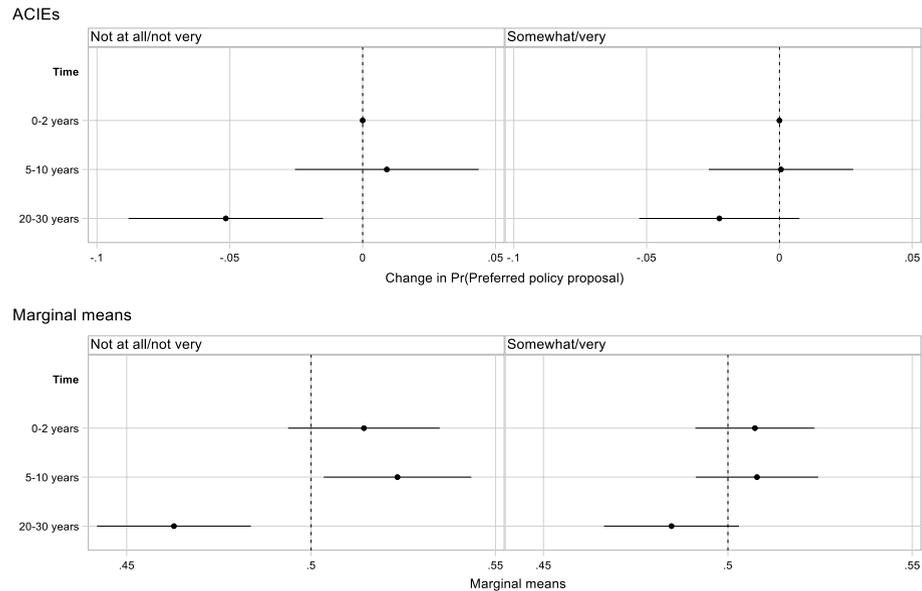


Fig. 7 Differences across political interest

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