

THE EFFECT OF POLICY TRACEABILITY ON LEGISLATIVE INCENTIVES

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Abstract

Theories of legislative politics have long emphasized how a policy’s traceability—whether and how voters connect legislative action with policy effects—shapes political incentives to legislate. Arnold (1992) emphasized how the “nature of the causal chain that links a policy instrument with its policy effects” structures the logic of congressional action. Despite its prominence, this key theoretical claim has received little empirical attention. In this article, we use two survey experiments to test how several policy attributes - including traceability - shape legislators and public policy preferences. We find that elites are responsive to both policy traceability and problem traceability—whether a policy problem itself can be linked to elite actions. By contrast, prospective voters are indifferent to both forms of traceability. With respect to other policy attributes, elites and mass publics share similar preferences. Our results provide support for a previously untested theory of policymaking and describe the nature of strategic decision-making by legislators.

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Politicians work to associate their legislative actions with positive social and economic changes, while minimizing their responsibility for negative developments. Decisions on which policies to prioritize are, of course, influenced by the costs and benefits that a policy imposes on politicians' constituents. Yet, a policy's objective impacts are not the only relevant factors; the attributes of a given policy, such as its side effects or the probability it will solve the policy problem also matter. Among these relevant policy attributes is *traceability*—the link between cause and effect (Schattschneider 1935; Stone 1997). For example, in his classic account, Arnold (1992) emphasizes how “the nature of the causal chain that links a policy instrument with its policy effects” structures elite incentives to legislate. When making re-election seeking decisions, strategic elected officials will therefore consider not only real (and perceived) allocations of policy costs and benefits but also whether and how particular policy outcomes could be associated with their actions by voters.

Surprisingly, despite its theoretical importance, policy traceability has been an uncommon focus of empirical analysis, particularly compared to a voluminous literature on policy framing. The topic is sometimes addressed when scholars consider policy time horizons, as when legislators structure policy reforms to deliver salient short-term benefits while distributing costs in less salient ways over the long-term (Pierson 1994; Huber and Stephens 2010). Policymaking models have therefore incorporated the uncertainty around whether policy impacts will become apparent to the public by the next election (e.g. Canes-Wrone, Herron and Shotts 2001) while empirical studies have demonstrated how the timing of policy impacts shapes incumbent evaluations (Healy and Lenz 2014). The concept of policy traceability is also implicit in discussions of policy narratives, for example in the causal stories that link policy interventions to outcomes (Stone 1997). Such stories don't have to be grounded in objective reality, and can be associated with random events (Healy, Malhotra et al. 2010 though see also Fowler and Hall 2018) or forces that are outside of government control (Wolfers et al. 2002). Conversely, voters may more easily hold governments accountable when clear party control makes links between government performance and outcome more causally simple (Duch and Stevenson 2008) or where voters can clearly differentiate between domestic vs. foreign drivers of economic conditions (Margalit 2011). Separately, traceability is also engaged by the literature on the “submerged state,” when governments externalize the source of benefits and therefore reduce recipient awareness that they are beneficiaries (Mettler 2011).

At the same time, the importance of traceability may be conditioned by limits on the public's capacity to evaluate incumbent policymaking. In at least some contexts, voters retrospectively reward or punish incumbents for specific policy decisions (Bechtel and Hainmueller 2011; Healy and

Malhotra 2009; Stokes 2016); however, broader evidence for retrospective voting remains limited (Healy and Malhotra 2013) or focuses on the public’s use of general economic or social conditions as a heuristic (Fiorina 1981; Lupia 1994) rather than evaluation of specific policies. The metrics used by publics to evaluate government performance may be fundamentally biased, including by whether the government is controlled by co-partisans (Malhotra and Kuo 2008; Brown 2010; Gerber and Huber 2010; Healy and Malhotra 2013). And the public’s ability to evaluate policy outcomes is conditioned by media coverage (Berry and Howell 2007; Hopkins and Pettingill 2018; Snyder Jr and Strömberg 2010). Overall, this means that the the degree to which elites feel the need to factor traceability into specific policy decisions remains an underexamined empirical question.

Conversely, it is also unclear whether mass publics prioritize traceability in their own preferences. On the one hand, we might expect that publics may maximize their ability to discriminate elite performance, and will thus prefer policies that facilitate evaluation of their leaders. On the other hand, the public’s difficulty with retrospective evaluation may downweight this consideration, possibly generating behavioral differences between political elites and the public (c.f. Sheffer, Loewen et al. 2018).

We report the results of survey experiments on state legislators, their staff, and the mass public that experimentally varied both policy traceability as well as several other policy attributes, including policy difficulty (cf. Carmines and Stimson 1980; Lenz 2013), efficacy, costs and time horizons. We find that both problem and policy traceability increased elite support for legislative action. By contrast, mass public preferences for legislation were indifferent to both traceability types. We also consider the effect of other policy attributes on elite and public policy preferences. With respect to other policy attributes, elites and mass publics have largely similar preference structures. Both groups prefer simple policies over complex policies, and dislike policies where there is more uncertainty about a policy’s efficacy. Surprisingly, the time horizon for a policy to achieve its goals did not impact policy support among either group. Overall, our results provide empirical support for a previously untested theory of policymaking and elaborate the the strategic considerations that motivate elected officials.

Methods

We fielded two surveys—of state legislators and their staffs (elites) and of the mass public—with embedded experiments to test the effects of policy attributes on support, prioritization, and likelihood of enactment. The elite and public studies were both pre-registered at <https://osf.io/jgs2m/> and

<https://osf.io/c6jvh/>, respectively; we make some deviations from the pre-analysis plan, detailed in SI Section D but present all analyses as specified in the manuscript and SI. The elite surveys was reviewed and approved by the UCSB Institutional Review Board as Protocol #4170786 and the public survey was approved by the Princeton IRB as Protocol #14153 (see also SI Section J).

Elite Sample

State legislators and legislative staffers were invited to participate in a 10 minute online survey in September 2017. The state legislator sampling frame included all valid legislator email addresses purchased from National Conference of State Legislators (NCSL) database (n=7,379). Subjects were initially invited by email, with one email follow-up reminder. Participants were not compensated. Our sample of state legislative staff included legislative directors, senior legislative assistants, legislative coordinators, and chiefs of staff for state-level representatives and senators. To develop this sampling frame, we purchased the NCSL state legislative staffer list, which included a wide range of staff, agency and clerical jobs. We restricted our sample to staffers with valid email addresses and job titles that contained one or more of the following string elements: Chief of Staff, COS, Legislat, Policy, Administrative Assistant, Executive Assistant, Communications Director, Research Assistant, District, Constituent, Press Secretary. These restrictions generated a final sampling frame of 4,145 US state legislative staffers.

Across our larger elite sample (which also included other unrelated questions) we received complete or nearly complete survey responses from 688 individuals, of which 296 were state legislators and 392 were state legislative staffers, yielding a state legislator response rate of 4.0% and a state legislative staffer response rate of 9.5%. While low, this response rate is in line with other surveys of state legislators fielded via email in the last decade (see SI Table 1 for a review of recent studies). Furthermore, we do not observe any concerning differences between our respondents and the sampling frame as a whole; in SI Tables 2 and 3 we present sample and population proportions of observable covariates for both the legislator and staff samples; the only notable imbalance is on region.

Mass Public Sample

The public sample (n=1,250) was recruited in November 2021 using Lucid Theorem. Consenting respondents took a survey containing two survey experiments and then answered a demographic question bank. Respondents were compensated by Lucid directly. SI Section B summarizes the demographic characteristics of these survey respondents.

Experimental Design

Our experimental design used four policy vignettes to test the effect of policy attributes on elite and public preferences. The first two vignettes concerned pollution from either electricity production or agriculture while the third and fourth concerned reforms to either tax or healthcare policy. This design offers two benefits. First, it ensured that the vignette issue domain was specific and clear, addressing issues of informational equivalence in scenario-based survey experiments (Dafoe, Zhang and Caughey 2018). Second, it allowed us to explore whether the effect of policy attributes on preferences varied across domains.

Each vignette randomized six further policy attributes in a factorial design: 1) problem traceability, or whether the problem is easily associated with government actions; 2) solution complexity, or whether a single intervention can solve the policy problem; 3) probability of solving, or the likelihood the intervention(s) will solve the policy problem; 4) policy traceability, or whether the effects of the policy can be easily evaluated by media and the public; 5) side effects, or whether there will be positive or negative price increases as a result of the policy; and 6) time to solve, or how long the policy will take to impact the policy problem. Schematically, these randomized attributes took on the following levels (with the number of conditions show in parentheses):

- **problem traceability (2)**: easy/difficult
- **solution complexity (2)**: single intervention can solve problem/complex series of interventions necessary
- **probability of solving (6)**: 10%/25%/50%/75%/95%/100%
- **side effect (2)**: increased/decreased costs as a result of policy intervention
- **policy traceability (2)**: easy/difficult
- **time to solve (5)**: 6 months/2 years/4 years/10 years/15 years or more

SI Section C details the experimental structure and wording of each vignette. Of course, in many accounts of policymaking, including Arnold's, policy attributes are not exogenous, but instead are endogenously set as a function of strategic legislative decisionmaking. Here, we use an experiment as a starting point to explore the causal effects of these attributes by randomly varying them. Attribute conditions were identical across issue domains and across elite and public surveys. Some

minor variations in vignette text were necessary to frame the elite vs public scenarios, also detailed in SI Section C. A sample vignette, as seen by a legislator respondent assigned to the air pollution experiment, is presented as an illustration below. Randomized conditions are presented in bold (including for respondents). Attribute labels (not shown to respondents) are displayed within brackets.

Imagine we discover that a previously unknown cancer-causing substance is present in your state's air. This pollutant is a by-product of chemicals used by local [*issue*] **farms**. Some of your constituents are getting sick with cancer.

The media and members of the public are [*problem traceability*] **having an easy time making the connection** between the [*issue*] **farm** pollution and cancer victims in your district

You receive a policy briefing from experts on this cancer-causing substance. During this briefing, you learn that state legislators can [*solution complexity*] **directly solve the problem by passing a single regulation** to prevent the release of the cancer-causing chemical pollutant into the air. Experts judge that, if you pass reforms, you have a [*probability of solving*] **75% chance** of completely solving the problem.

Passing these reforms may [*side effect*] **increase food prices as a result of costs associated with implementing the new policy**. These price [*side effect*] **increases** would be [*policy traceability*] **transparent and many media and public observers will be able to tell whether the food price increases are a result of the state legislature's actions**.

From the time you pass the policy until the time that levels of the cancer-causing substance begin to decline and prices begin to change, it will take [*time to solve*] **10 years**.

Respondents were frozen on the vignette page for at least 20 seconds before they were able to click "next" to proceed to a dependent variable question bank. Table 1 shows the wording for both elite and public dependent variables: both contain similar items measuring likelihood of a policy passing and the degree to which it should be prioritized. Elite respondents also answered questions about the ease of policy passage and the likelihood of the policy impacting future elections. The public also answered questions about policy importance and how it would shape approval of their

Table 1—Dependent Variables

Legislators and Legislative Staffers
How easy do you think it would be to pass policy reforms to address this policy challenge?
How likely would your current legislature be to pass policy reforms to address this policy problem?
Assuming you were involved in a committee responsible for this issue, how much would you prioritize this issue personally?
How much do you think this issue would affect future elections?
Mass Publics
How important do you think it is for your state legislature to pass a bill to address this policy issue?
How likely do you think it is that your state legislature will pass a bill to address this policy issue?
How much would you like your state legislator to prioritize this issue?
Would you approve, disapprove, or neither approve nor disapprove of your state legislator if this policy were passed?

legislator. By necessity, these vignettes require a variety of specific detail to ensure that randomized policy attributes are presented with clarity. We conduct the experiment with two very different policy vignette structures, each presented with two very different policy domains (farms or power plants releasing a carcinogen; the tax code or healthcare regulations leading to unemployment) to help ensure the results are not an artifact of a particular policy topic or an inadvertent survey wording decision (See also SI Section C).

For both survey samples, all dependent variables were combined into an additive index to reduce measurement error.¹ Results are presented for both the index and individual dependent variables; point estimates are substantively similar, and when the index coefficients are statistically significant, nearly all the individual measures are as well.

Analysis

We analyzed the effect of policy attributes on policy support using ordinary least squares (OLS) regression, presenting regression coefficients from a regression of the following form:

$$Y_{is} = \alpha_s + \beta T_{is} + \epsilon_{is}$$

where Y_{is} is policy support (either as an individual item or an additive index), T_{is} is a matrix of treatment variables, which are randomly assigned in the survey, and α_s is an issue fixed effect.² As a robustness check, and to improve precision, we present covariate-adjusted models in SI Section E, controlling for self-reported race and ethnicity, gender, homeownership status, party identification,

¹The reliability coefficient for the dependent variable index for elites is 0.61 and is 0.83 for the public index. For the elite index, the electoral impact and priority measures speak to the individual motivations of legislators, while the ease and likelihood measures incorporate the perceived actions of other legislators as well, potentially explaining the difference (the alpha increases to 0.64 and 0.62 when ease and likelihood are removed, respectively). As a result, we show the effects on the individual outcome measures in Figure 1.

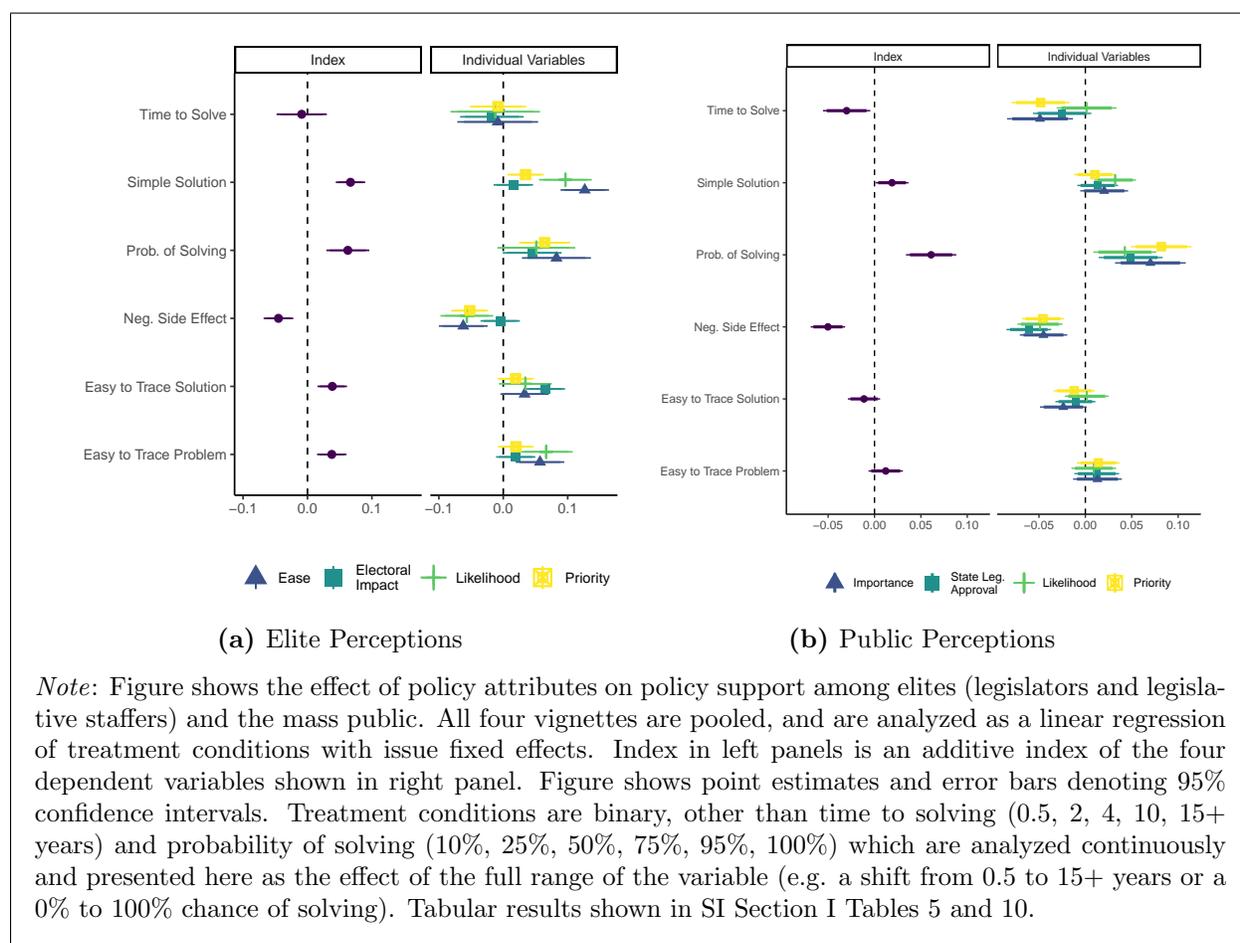
²In analyzing the public survey, we include respondent fixed effects as well, as each respondent responded to versions of both the pollution and employment vignettes. By contrast, elites only received one version of either the pollution or employment vignette.

and political ideology. Results are substantively similar.

Results

Figure 1 summarizes the causal effect of different policy attributes on policy support among both elites and the public. This figure collapses results across vignette issue domains, while leveraging the near identical treatments between elite and public samples to compare treatment effects. The figure includes both an index of all policy support measures as well as disaggregated results for each dependent variable.

Figure 1—Effect of Policy Attributes on Support Among Elites and Public



Looking first at the elite sample, we find support for Arnold’s traceability hypothesis. Increased traceability of both societal problems and policy solutions increased policy support. This was true across both an index of dependent variables and for each individual measure. In general, problem traceability increased an index of policy support by 3.7pp, and solution traceability increased this

index by 3.8pp. Suggestively, the largest impact of policy traceability came on elites' perception that policy support would impact future elections, with a traceable policy having a 6.5pp higher impact. We also find that legislators and legislative staff are equally responsive to the traceability of problems, even as staff are more responsive to the traceability of policy solutions (Figure 2a). Splitting our sample by partisan affiliation (Figure 2b), we find suggestive evidence that traceability is a larger concern for Democratic elites than their Republican counterparts, although the difference between the two coefficients is not statistically significant in a model where all treatment variables are interacted with partisanship (problem traceability $p = 0.17$, solution traceability $p = 0.26$, see SI Table 4). We do not find evidence that the importance of traceability varies by the competitiveness of a state legislator's senate or house district in 2016 (Figure ??). Future work should assess the drivers of these differences, and whether they reflect different ideological stances towards government programs or district differences in how partisan elites claim credit.

Our vignette experiment also varied the incidental costs and benefits associated with policy action and, as one would expect, the potential for negative side effects decreased policy support across all measures and within all subgroups. In SI Section F, we test for interactions between solution traceability and the potential for negative side effects, finding that although costs in a traceable environment may dampen the likelihood of policy action, they do not outweigh the direct effects of traceability.

Turning to the remaining attributes, we find significant benefits of the simplicity of the policy, although here we see differences among the measures: elites believe that simple policies are easier and more likely to pass, although they are skeptical whether they should be prioritized or whether they will have any electoral impacts. A higher probability of solving the problem increases the chance of policy action. However, the time that a policy solution takes to see results has no effects on elites evaluations of the policy, perhaps reflecting the long timescale of policy enactment, implementation, and solving the problem.³ Subgroup analyses in SI Figure 2 show largely consistent results with only a few exceptions. Notably, Republicans appeared more sensitive to the probability of solving the problem than Democrats. Additionally, we assess whether the importance of these attributes was consistent across the four vignette issue domains (SI Section G), where we find few significant differences across issue area. Only on the tax issue are elites sensitive to time to

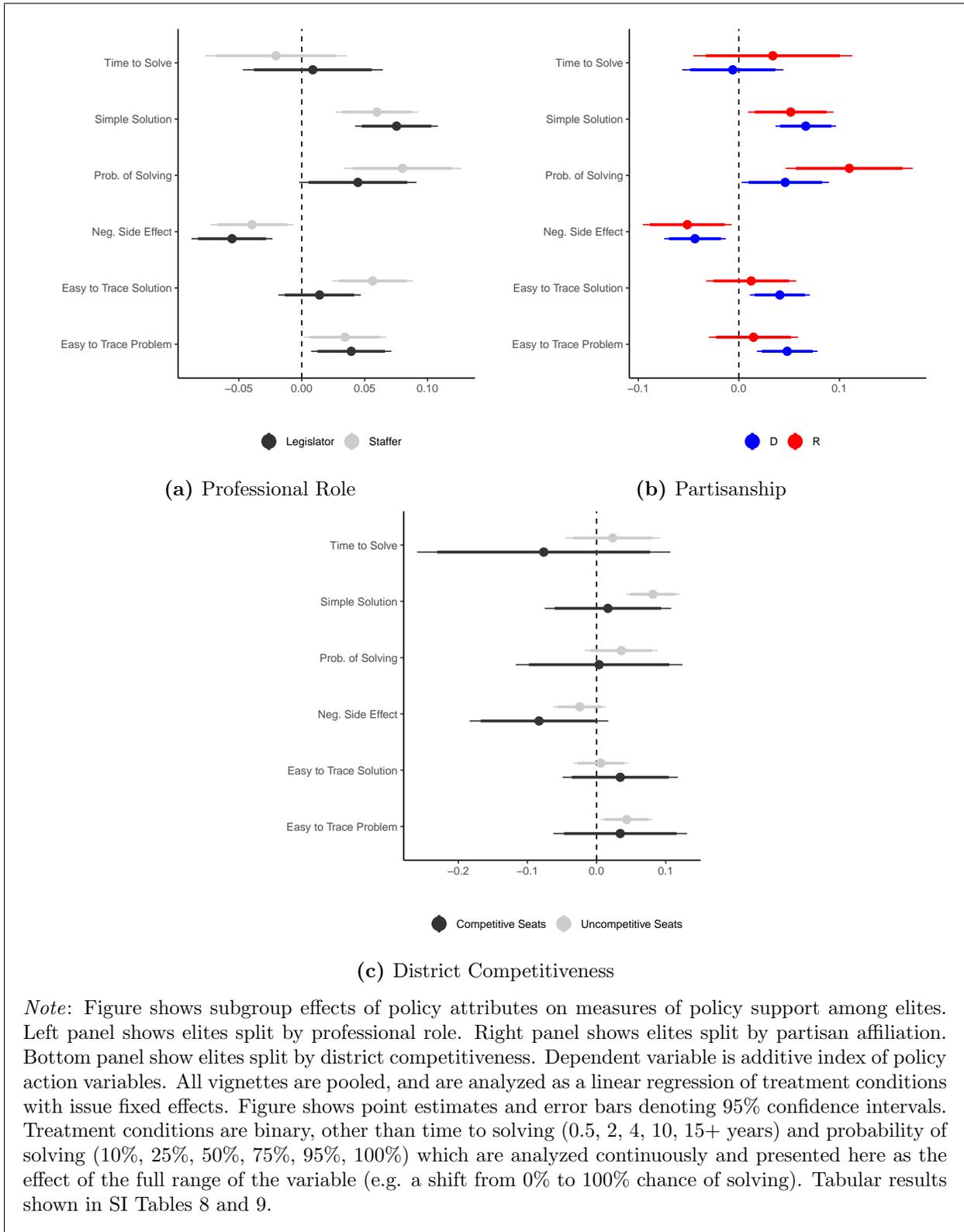
³Analyzing the time and probability of solving variables continuously deviates from our pre-analysis plan, where we indicated that we would analyze the variables as dummies for each value. Given our sample size and number of conditions, we believe the results are easier to interpret as presented. In SI Table 6, we present the analyses as originally registered.

enactment, perhaps reflecting the easier implementation of the policy relative to the other options. Finally, we examine each dependent variable separately in the right hand panel of Figure 1a, finding effects of the same size and magnitude across all four outcomes. The only statistically significant differences are found in the simplicity of the solution, where legislators are significantly more likely to perceive likelihood of passage and electoral impact than ease or priority.

We then consider how mass publics respond to the same vignette experiments (Figure 1b). We find, in contrast to elites, no effects of either problem or solution traceability on either a desire for or expectation of policy action. Two of the dependent variables we measure are different than those for the elites, but we also don't find that traceability shapes the public's assessment of either the priority an issue should be given or, most importantly, the likelihood that a state legislature will act on the problem.

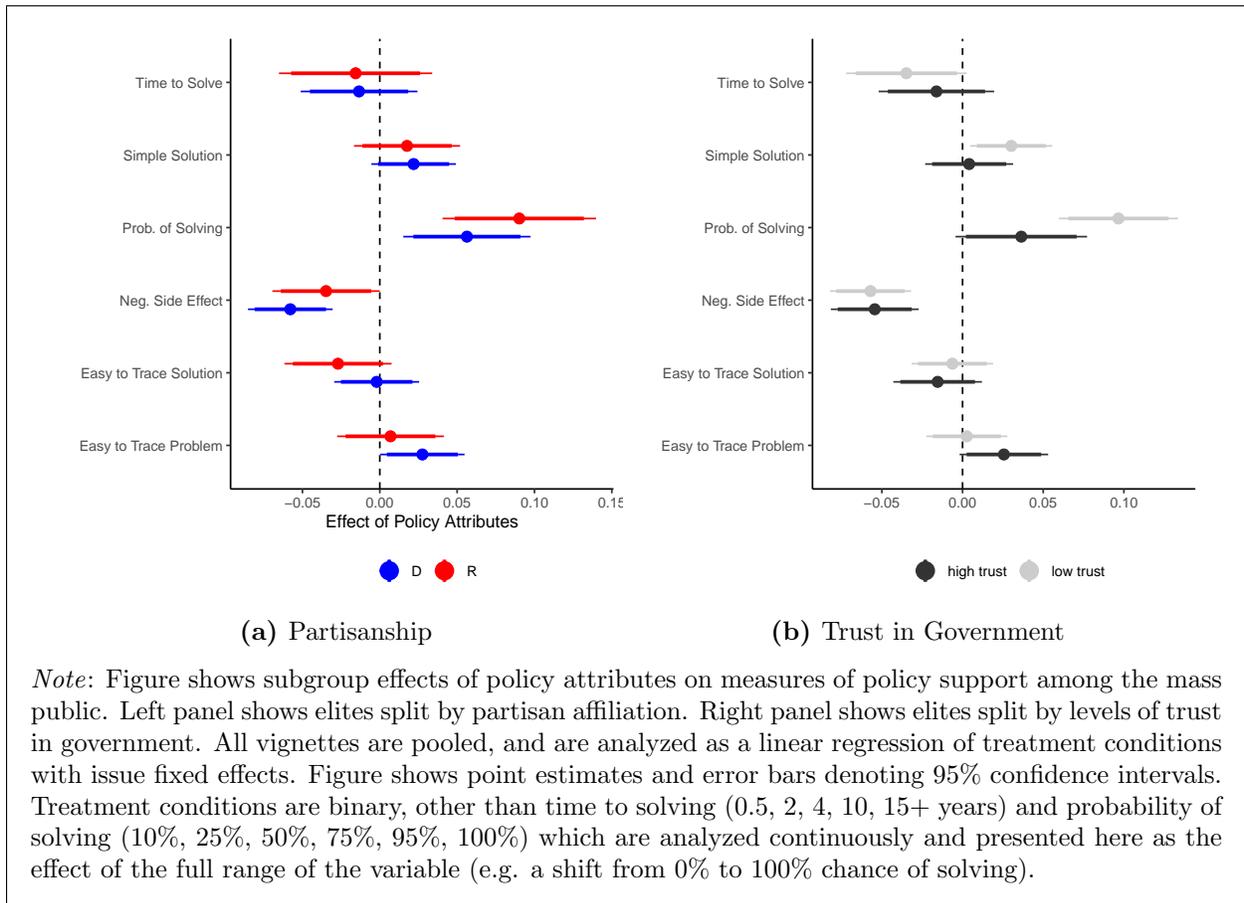
By contrast, with respect to other policy attributes, we find mostly convergence between elites and publics in the effect of policy attributes on policy preferences. Similar to elites, the public expects policy action on problems that have simple solutions, a high probability of success, and co-benefits instead of costs. Unlike elites, the public appears more sensitive to the timeframe on which the problem is solved. But the major difference between elites and the public is in their prioritization of problem and solution traceability. The public, which is not tasked with selling the policy, is understandably insensitive to these considerations in prioritizing the problem and in rewarding legislators. But they also do not perceive traceability to affect the likelihood of enactment, meaning that they also do not recognize the priority that politicians give it.

Figure 2—Heterogeneous Effects of Policy Attributes on Elite Behavior



We also conduct subgroup analyses of the public by partisanship and trust in government (3a). Partisans in the public do not differ much in how they evaluate policy attributes. The main difference is that Republicans put a higher premium on the probability of solving a problem than Democrats, mirroring the differences we found among elites and suggesting the importance of future work to unpack this apparent difference. Respondents with low trust in government are similarly sensitive to the probability of success. The similarity of the results in both subgroups reflects the strong correlation between Republican partisan affiliation and low trust in government. The results suggests a negative cycle, where those with low trust in government disapprove of government enacting policies with long time horizons that do not completely fix a problem, decreasing their belief in the efficacy of government.

Figure 3—Heterogeneous Effects of Policy Attributes on Mass Behavior



Conclusion

In this article, we explore the effect of various policy attributes on legislator and public policy preferences. The most important results speak to Arnold’s notion of traceability—elites are more likely to favor policies where there is a clear connection between the problem and a negative outcome (problem traceability) and where voters will easily connect the policy solution to a welfare improvement (solution traceability). Office-seeking politicians need to sell their achievements, and the ease of connecting cause to effect stands at the center of their pitch. In aggregate, we find evidence of this strategic consideration both among state legislators and their policy-oriented legislative staff. Yet, unlike elites, the public does not factor the traceability of policies into their assessments. In part, this is simply because, unlike elites, the public’s livelihood does not determine on how proposed policies are perceived and implemented. (Of course, we might still expect public’s to leverage the traceability in practice of elite actions as part of their retrospective evaluation of their leaders). Outside of traceability, we find strong convergence across both elites and mass publics in the effects of other policy attributes on policy support. These results both confirm expectations about the effect of policy attributes on support, and underscore the empirical importance of differences in traceability considerations.

Despite this convergence in the aggregate, we do notably find apparent differences between Republican and Democratic legislators in their attention to traceability concerns, with elite attention to this attribute concentrated among Democratic elites, while being unrelated to district-level electoral competitiveness. Conversely, both Republican elites and Republican publics have preferences that are more responsive to the likelihood an intervention will solve a particular problem. In the current political era, where appeals to “fake news” and causal beliefs at odds with empirical reality both abound, it becomes even more critical to understand the ways in which both citizens and legislators think the world works and how these perceptions shape political and policy decision-making.

The results in this letter suggest several important future research directions. First, Arnold’s conception of policy traceability also includes strategic efforts by politicians to “mask” the effects of unpopular policies behind conditions of low traceability. Our vignettes do not offer a direct test of this negative traceability, which would make a natural empirical extension to the results presented here. Second, our measures of policy traceability focus on the ease with which publics can track the co-benefits or costs of a policy solution; in our vignettes, the policy outcomes themselves were

salient and simple. Future work could explore how the differential traceability of the policy outcome itself shapes strategic legislative behaviors. This work could also explore the degree to which publics factor the incentives facing elected officials into their assessments of politician behavior. Such work would echo the importance, emphasized in this note, of better measuring and theorizing apparent differences in partisan strategic considerations in policy evaluation and reconciling core theories of the policy process with empirical tests.

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