

# Political Decision Making Under Uncertainty: Politicians' Risk Preferences are Affected by Choice Frames and Implied Accountability

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## Abstract

Risk management underlies almost every aspect of elite politics. Yet direct, systematic evidence on the risk preferences of elected politicians scarcely exists due to the difficulty of administering assessment tasks to elites. As a result, we do not know if politicians' risk calculus is malleable, and if so, why and under what conditions. In this paper, we conduct a survey experiment with 440 incumbent local politicians from across the United States. Using a modified version of the Asian Disease experiment, we show that gain/loss frames alter the risk preference of elected officials. We further show that an induced sense of accountability increases the tendency to engage in risky behaviour, and that this shift in preference only occurs in those politicians who are interested in seeking re-election. These results inform several political science theories that assume stable risk preferences by political elites, or that make no risk assumptions whatsoever.

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## 1 Introduction

Virtually all political decisions involve some degree of risk and uncertainty, and the risk-seeking (or risk-avoidance) preferences of elite decision makers are considered to be crucial determinants in multiple influential models in various subfields of political science, such as violent conflict escalation and resolution, international negotiations, elections and campaigning, policy adoption, and economic policy choice (Druckman and McDermott, 2008; Kam, 2012; Kowert and Hermann, 1997; Levy, 1997; McDermott, 2001, see McDermott et al., 2008 for an extensive review). Yet to date, very little evidence on the risk preferences of elected politicians has been collected, principally due to the difficulty in administering established experimental protocols to sufficiently large numbers of incumbent politicians (Druckman and Lupia, 2012).

This has resulted in a literature that contains remarkably contrasting assumptions on whether politicians are risk-favouring, risk-averse or risk-neutral decision makers. Equally importantly, many political science models still widely (and often implicitly) assume that the risk-seeking preferences of political elites are consistent across different contexts (McDermott et al., 2008, 343). This stands in stark contrast to extant evidence from psychology, and to Prospect Theory in particular. It is also incongruent with evidence collected by political scientists showing how public exposure and electoral consequences can alter the decision making preferences of political actors (Lerner and Tetlock, 1999; Przeworski et al., 1999).

In this paper we provide first systematic evidence on the stability of elected officials' preference risky policy choices. We use a public choice task adapted and modified from the classic Asian Disease experiment (Tversky and Kahneman, 1981), which we embedded in a large-scale survey of incumbent municipal politicians in the United States. We find that these elected officials' risk preferences are strongly conditioned by whether choices are framed in terms of gains or losses. We also demonstrate that priming the public nature of the task and its potential electoral consequences - that is, increasing the decision's implied accountability level - results in significantly more risk-taking. We further find that this effect is completely washed away if the politician is disinterested in seeking re-election.

## 2 Theoretical Background

The personality characteristics and preferences of political actors have been at the centre of political behaviour theories that examine how individual traits impact political choice. While the argument for individual-level effects on political outcomes applies for all members of society, it is perhaps most prominent for elected officials, who, in liberal democracies, have the biggest personal impact on political outcomes. Yet so far, direct empirical investigations of individual-level determinants of political choice have mostly been limited to citizens - whether as (public) opinion holders,

voters, or members of mobilized groups (Huddy et al., 2013)<sup>1</sup>.

In recent years, political scientists have called for a more rigorous investigation of politicians' behavioural traits, emphasizing the need to establish if and how known findings on biases and heuristics from psychology apply to elite decision makers - and how they impact policy outcomes (Druckman and Lupia, 2012; Hafner-Burton et al., 2013; Levy, 2003). Several studies have begun to address this empirical gap by recruiting political elites and having them take part in controlled experiments or behavioural tests. For example, recent efforts have been made to obtain valid measures of politicians' Big Five personality traits in the United States (Dietrich et al., 2012; Ramey et al., 2014), Germany (Best, 2011), and Italy (Caprara et al., 2010). Other studies have attempted to assess the political impacts of politicians possessing different levels of power motivation (Renshon, 2014), overconfidence (Johnson et al., 2006; Johnson, 2009), self-interest and capacity for strategic inference (LeV-  
eck et al., 2014), and different expressions of competence and dominance (Todorov et al., 2005; van Vugt and Ronay, 2014). Notably, Enemark et al. (2013) use a regression discontinuity design and a unique sample of local Zambian politicians to explore whether election winners and losers exhibit different cooperative behaviour.

Hafner-Burton et al. (2013) identify risk management as the trait that politicians are most likely to differ on relative to non-elites. Risk management is rooted in prospect theory's concept of risk preference change under different frames (Kahneman and Tversky, 1979; Tversky and Kahneman, 1981), and Hafner-Burton et al. explain that "Much of politics - such as managing international crises - is about the calculus of risk, and experienced elites might manage those risks differently from decision makers selected randomly" (p. 370).

Assessing risky alternatives and choosing between them is inherent to almost every aspect of political life, including voting, collective action, and political mobilization (Druckman and McDermott, 2008; Eckles et al., 2014; Kam, 2012; Ostrom, 1990). Even more importantly, risk management is a fundamental construct in many theories of elite decision making in politics (Dewan and Myatt, 2007; Hood, 2002; Kowert and Hermann, 1997; McDermott, 2001; Shepsle, 1972). As McDermott (2001, 3) observes, risk is so ubiquitous in elite politics that "virtually every important decision involves some element of risk". Yet to date, no study that we are aware of has directly measured politicians' risk preferences or attempted to explore under what conditions these preferences change<sup>2</sup>.

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<sup>1</sup>Notable exceptions do exist, especially the literature on gender effects in elite political behaviour (Dahlerup, 1988; Saint-Germain, 1989; Swers, 1998, 2001a, 2001b, 2002; Lovenduski and Norris, 2003).

The few cases of direct large-scale studies of incumbent politicians conducted over the last few decades either avoided investigating politicians' personality characteristics and behavioural preference (e.g. Putnam, 1976), inferred them using post-hoc analyses of events (see for example Rubenzer et al., 2000), or have focused on non-elected political experts and on other elites (most notably, Tetlock, 2005. See also Haerem et al., 2011; Mellers et al., 2015).

<sup>2</sup>A single exception is Best (2011), who asked German representatives to self-report their ten-

Previous work suggests four broad categories of factors that are seen as impacting risk seeking tendencies of elite politicians. First, and similar to the general population, politicians' preferences for risky choices may shift depending on how these choices are framed (Boettcher, 2004; Mercer, 2005). Second, politicians operate in a unique task environment where their decisions are exposed to the public and carry direct implications to their likelihood of remaining in office (Lerner and Tetlock, 1999; Przeworski et al., 1999). Third, representatives may learn to employ unique heuristics and cognitive shortcuts when dealing with risky choices as they accumulate more experience in the realm of politics. And fourth, we might expect to see different risk-seeking patterns in politicians when compared to the general population because of selection effects - that is, because people who choose to seek office, let alone those who succeed in doing so, have systematically different personality characteristics relative to those who do not, and those may be associated with an increased or decreased tendency to favour risks, or with a higher or lower level of resistance to situational preference change.

Of these four categories, we choose to focus on the first two - sensitivity to framing effects, and to implied situational accountability. We do so because these are task-specific elements that can be exogenously manipulated, allowing for random allocation of participants into different treatments. We cannot simulate 'being experienced' exogenously. Establishing causal links between experience or other character traits and risk management by political elites is certainly a methodologically challenging task that can be made possible in the future using a careful application of relevant methods, such as regression discontinuity designs (e.g Enemark et al., 2013).

## 2.1 Framing Effects

One of the most well-established results from Prospect Theory is that individuals tend to be risk-taking when choices are framed as potential losses, and become significantly more risk-averse when the same choices are framed as potential gains. This classic result has been replicated many dozens of times in different contexts (Kühberger, 1998), most frequently using the classic Asian Disease experiment pioneered by Tversky and Kahneman (1981).

While we have little empirical evidence for how politicians should react to these gains/loss frames, there are theoretical reasons to suspect that elected politicians will respond differently than other people: politicians operate in an environment in which they are constantly facing attempts to frame the issues they deal with. They are in continuous interaction with the news media, interest groups, businesses, and lobbyists - all of whom are involved in attempts to 'sell' a frame that benefits their

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dency to take risks, though this is a relatively unreliable measure, especially as people tend to believe themselves to be more risk-seeking than they actually are. See MacCrimmon and Wehrung (1988); Pennings and Smidts (2000).

interests to political decision makers (Baumgartner and Jones, 1993; Butler and Maréchal, 2007; Edwards and Wood, 1999; Tarrow, 1994). Further, politicians are themselves strategic and purposive instigators of issue frames (Chong and Druckman, 2007; Druckman, 2001; Entman, 2004; Lakoff, 2010). Of special importance in representative democracy is the ability of actors to frame actions and issues as potential losses or gains, given the substantial impact that these features have on opinion formation - and thus on politicians' public standing and re-election prospects (Druckman, 2004). The constant exposure to and involvement in framing attempts means politicians may be less susceptible to them.

A few studies have looked at the role of gains/loss frames on elite decision-making, but these studies have not focused on elected officials. Instead, they have looked at the behaviour of military officials (Carnevale et al., 2011; Renshon, 2014) or bureaucrats (Fatas et al., 2007; Kuehnhanss et al., 2014)<sup>3</sup>. In the absence of evidence on how elected officials respond to frames, the existing literature promotes remarkably contrasting expectations: some argue that politicians respond strongly to gain/loss frames because of factors like re-election considerations (Jervis, 1992, 190-191), or simply because politicians are no different than the general population when it comes to cognitive biases (Boettcher, 2004; Druckman, 2004; Levy, 1997) - specifically, because of the evolutionary-rooted origin of human reaction to gain/loss frames, which trumps expertise effects (McDermott et al., 2008).

Fewer authors make the expectation that politicians exhibit less preference reversals, and that they are generally more resistant to frames due to environmental factors like skill acquisition and job experience. Individual characteristics like higher need for cognition or political knowledge are also known as mitigating responses to frames, and they may be more pronounced in political elites (Carnevale et al., 2011; Chong and Druckman, 2007; Hafner-Burton et al., 2013; LeBoeuf and Shafir, 2003).

Overall, however, the intractable and ubiquitous nature of the gains/loss frame effect on risk preferences lead us to expect to see it strongly expressed in the behaviour of elected politicians as well.

If true, one implication of our study will be to empirically undermine theories in political science and economics that rely on the assumption that politicians have

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<sup>3</sup>Related to this investigation, various recent experimental studies have used elected politicians as their target population and examined how their behaviour changes in response to manipulation of different information cues, such as ethnicity, partisanship, issue agreement, or geographic location of the contacting individual (Broockman, 2013; Butler and Broockman, 2011; Grose et al., 2014). These studies, however, deal almost exclusively with cultural/ideological biases of office holders and how they manifest in constituency responsiveness, as opposed to more basic behavioural/cognitive traits of politicians, on which this study focuses. Moreover, in these experiments elites are not studied directly. The evidence collected is often interactions with their offices and/or staff (or at least, there is no way to validate that the politician surveyed was involved in the decision making leading to the outcome observed by the researchers), meaning that drawing inferences from the data on the preferences of politicians encounters validity issues. (But see LeVeck et al., 2014, who directly study policy elites, for a rare exception.)

constant and immutable risk preferences, such as Fearon (1995, 38) and Huth et al. (1992), where risk-aversion is seen as the default for political elites at all times, or Hafner-Burton et al. (2011), where the opposite assumption is made. An extensive discussion of theories that may be affected by not considering risk preference change as a result of gain/loss frames is provided in McDermott et al. (2008).

## 2.2 Accountability and Political Decision Making

Accountability is tied to holding political office, and in particular, to the risk of losing it (De Mesquita and Siverson, 1995; Healy and Malhotra, 2013). This depends on two fundamental assumptions: that politicians' actions are public - that is, open to scrutiny by citizens and the media - and that they carry potential electoral repercussions - that is, that politicians are interested in staying in office (or in seeking higher office), and can be voted out by dissatisfied citizens<sup>4</sup>.

Politicians who are interested in remaining in office and are being publicly scrutinized for their actions should be motivated to act in a way that maximizes voters' positive impression of them in order to gain these voters' support (e.g. Arnold, 1992; Kingdon, 1989; March and Olsen, 1995; Przeworski et al., 1999; Snyder Jr and Strömberg, 2008, see Ashworth, 2012 for a recent review). Numerous influential theories in economics and political science rely on this reasoning to explain elite political behaviour and derivative policy patterns (e.g. Cole, 2009; Ferejohn, 1986; Grose, 2010; Jacobs, 2008; Levitt, 2002; Maestas, 2003; Malesky et al., 2012; Soroka and Wlezien, 2010; Weaver, 1986).

Yet how exactly public scrutiny and standing for elections alter the decision making logic of political elites is not always theoretically clear. To understand when increased accountability motivates 'better' behaviour and when it creates adverse incentives, better theory and evidence is required regarding the cognitive mechanisms that drive reactions of politicians to heightened accountability. Some evidence from psychology hints that behavioural traits like future time discounting, escalating commitment in face of sunk costs, and overconfidence play a bigger role in political decision making when individuals feel more accountable (Fennema and Perkins, 2008; Hafner-Burton et al., 2013; Lerner and Tetlock, 1999; Simonson and Nye, 1992). Politicians may discount the future more when elections are on their mind; they may act with more confidence as a public signalling tactic, or be less confident in their judgement because they are motivated to deliberate choices more carefully; and they may be more – or less – inclined to spend when they believe the public is more attentive to their choices.

Risk management is particularly likely to be subject to accountability effects because of the well established impact of negativity bias in politics (Lau, 1982; Weaver,

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<sup>4</sup>Accountability in politics is a distinct subset of the broader psychology concept of being held accountable, which involves having to justify your actions to others. For a comprehensive review, see Lerner and Tetlock (1999).

1986): negative impressions are ‘stickier’ than positive ones, and are much harder to uproot. The inherent risk in large-scale impression formation on a politician’s image - and in particular its impact on the likelihood of re-election - implies that politicians should be motivated to adapt their risk calculus when in public office to minimize the risk of negative opinion formation - particularly so when they feel that they are operating under public scrutiny (Ledgerwood and Boydston, 2014; Meffert et al., 2006; Vieider, 2009).

How does this translate into risk management terms? Some evidence suggests that when considerations of accountability are salient, politicians should be motivated to avoid outcomes that entail the risk of incurring perceived losses. For example, in an experiment in which participants were acting as financial investment CEOs, their risk-seeking behaviour was substantially reduced when their accountability to shareholders was primed (Lefebvre and Vieider, 2013), and another study found that accountability led already low risk individuals to become significantly more risk-averse (Weigold and Schlenker, 1991). At the same time, other evidence suggests that being held accountable produces less loss aversion, and more broadly, less biased decision making. The argument is that accountability motivates deliberation, and induces what Vieider (2009, 1) calls “a rational check on emotional reactions”, thus leading decision makers to be more risk-acceptant (Simonson and Nye, 1992). In sum, it is theoretically unclear whether increased political accountability should make politicians more risk-seeking or more risk-averse.

We offer a different perspective on this debate that draws on prospect theory, similar to the argument promoted by McDermott et al. (2008). We argue that a heightened sense of political accountability more often positions politicians in a loss framing of events than in a gains frame, which should lead them to be more risk seeking. First, because negativity bias makes public scrutiny more likely to result in utility loss. Second, because elections represent the most volatile element of political life, and for incumbent politicians (as opposed to aspiring candidates) they offer primarily an opportunity to lose office rather than to gain one. And finally, because of the accumulating evidence that politicians are often punished electorally for public events that are completely beyond their control (Achen and Bartels, 2004; Cole et al., 2012). Therefore, our expectation is that on average, a heightened sense of accountability is more likely to position elected decision makers in a domain of losses, resulting in more risk-seeking behaviour.

One important reservation we make here is that this argument relies on the premise that politicians do seek re-election, or at the very least, that they are responsive to public opinion in their behaviour. There is strong empirical evidence demonstrating how politicians who are not facing elections - whether because of term limits or because they are not interested in seeking re-election - exhibit different decision making patterns (Alt et al., 2011; Besley and Case, 1993; Dal Bó and Rossi, 2011; Smart and Sturm, 2004). With regards to risk management, then, we expect that accountability will only result in loss-domain-like behaviour when

the re-election assumption holds. That is, if an incumbent politician is not running again for office, we do not expect that she will be subject to this effect: in the absence of potential electoral repercussions, priming the proximity of elections and the public visibility of a politician’s decision cannot serve to motivate a different risk calculus.

### 3 Study Design

#### 3.1 Sample

To test how risk management of elected politicians is impacted by gain/loss frames and by priming accountability we conducted an online survey experiment with incumbent elected local politicians from across the United States, all of whom serve as representatives in municipalities with a population of 3,000 or more.

This study is part of a larger survey of municipal politicians in the United States, (overall  $N > 5,000$ ), of which a random sub-sample of participants ( $N = 440$ ) was assigned to the experiment. Details on the survey and descriptive statistics of the sample are available in the Supplementary Information section. The majority of participants in the experiment (73%) were council members, or held equivalent titles. 15% were mayors, 3% deputy mayors, and an additional 9% held other kinds of municipal office. Participants held office mostly in in cities (63%) and towns (20%)<sup>5</sup>.

Studying elected officials at the municipal level entails a tradeoff: on the one hand, politicians in most (but not all) municipalities are less professionalized relative to members of state legislatures or national parliaments, and therefore may not exhibit to the same degree the kinds of elite behaviours that depend on extensive experience or access to resources. However, local politicians are nevertheless responsible for policy decisions in municipal government, which are frequently large-scale, involve substantial resource redistribution, and are subject to public scrutiny (Peterson, 1981; Trounstine, 2009; Vermeir and Heyndels, 2006). Municipal electoral politics also have many of the features of legislative elections, including a persistent incumbency advantage, strong impact of financial resources on campaign success, and substantial partisan influence (Krebs, 1998; Trounstine, 2011). To illustrate the last point, the majority of participants in our sample identified as belonging to either the Republican (38%) or Democratic (37%) parties. Importantly, one clear ‘upside’ of potentially lower levels of political professionalism is that they increase our confidence that participants in the experiment were the actual politicians who were contacted and not their staff.

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<sup>5</sup>The rest identified their localities as villages, townships, or boroughs.

## 3.2 Instrument

To obtain measures of our quantities of interest we use a novel vignette, closely adapted from the classic Asian Disease framing experiment (Tversky and Kahneman, 1981). The original experiment described a scenario in which a mysterious Asian disease outbreak is about to kill 600 people, and participants were asked to make a choice between two alternatives in dealing with the epidemic: a certain choice (some number of people - lower than 600 - will die) and a risky one (every-one dies with probability  $p$ , no one dies with probability  $1 - p$ ). Participants are randomly assigned to a gains or a loss frame treatment. In the loss frame, choices are described using the above wording, and in the gains frame, the same choices are phrased in terms of potential gains (some number of people will survive, etc.).

The canonical and highly robust result of this experiment is a reversal of preferences: the majority of those assigned to the gains frame opt for the certain choice, and those assigned to the loss frame exhibit risk-seeking behaviour (Kühberger, 1998).

To the best of our knowledge, this classic public health scenario has never been tested with politicians, who are the ones most likely to face such decisions. However, municipal-level politicians are less likely to be direct decision makers in response to epidemic outbreaks. We therefore use the same framework but describe a scenario in which water levels are rising in a relief dam located in the politician's municipality, threatening to flood several hundred houses downstream. Participants are then asked to make a similar decision between a risky and a certain choice.

On top of the original gain/loss manipulation, we introduce an orthogonal accountability treatment (Grose, 2010): half of the participants are randomly assigned to a low accountability treatment, where they are shown the question 'as is' (in either a gains or loss frame). The other half are assigned to a high accountability treatment, in which the situation is described as happening a month before the upcoming municipal election, and notes that going into the election, reporters ask for the politician's position. We thus prime the public nature of the decision and its potential electoral repercussion.

This results in a 2x2 design with four conditions. The exact vignette text is as follows, with treatments in square brackets:

Imagine that a relief dam is located in your municipality. [A month before the upcoming municipal election / - ] the relevant engineering department reports that water levels are rising rapidly, threatening to flood the dam and risking the destruction of 600 households downstream from the dam.

Two alternatives are proposed by the engineering department, with the following potential outcomes: in alternative A, the dam is opened and [200 out of the 600 houses downstream are destroyed / 400 out of the 600

houses downstream are saved.] In alternative B, the dam remains closed, and there is a 66% chance of [all houses downstream being destroyed / none of the houses downstream being saved], and a 33% chance of [none of the houses downstream being destroyed / all houses downstream being saved].

[Going into the elections, reporters ask for your position on the two alternatives. / - ] Which of the alternatives do you choose?

1. Alternative A
2. Alternative B

Results of randomization balance tests are reported in the SI. We tested for potential imbalances across our two treatments on gender, education levels, locality type, participant tenure length, seniority, future plans, party affiliation, and self-placement on a liberal-conservative scale. No significant imbalances were found, other than a locality type imbalance between the two accountability treatments.

A noteworthy deviation from the original Asian Disease in our design is that originally, both choices had the same expected outcome of 400 fatalities out of the overall 600 expected deaths. In this experiment, the certain choice results in 200 houses being destroyed, and the risky choice has an expected outcome of 400 destroyed houses, making it a-priori less attractive, assuming participants take into account these numbers when thinking about the choices. Held constant across treatments, this design choice is independent of the experimental treatments and thus only affects the base rate of risk preference. Indeed, while the overall risk-seeking rate in the original Asian Disease experiment was 53%, the overall preference for the risky choice in our design is 41.14%.

## 4 Results

Figure 1 graphs our two main effects using predicted probabilities (Tomz et al., 2003). Table 1 presents the effect of the gains/loss frames on the actual observed distributions. Moving from gains to losses, risk seeking rates increase from 33% to 50%. This effect achieves conventional levels of statistical significance. Unlike previous studies using a similar design, we did not see a complete preference reversal; however, that is likely a result of the lower overall preference for the risky choice. Indeed, the size of the framing effect in our results is comparable to previous findings. As measured by Cohen's  $d$ , which is often used to compare across studies because it accounts for variance in the data, the effect size we found is 0.345. This is well within the range of expected effect sizes for framing experiments of this design, which is 0.26 - 0.64 (Kühberger, 1998; see SI for a full discussion).

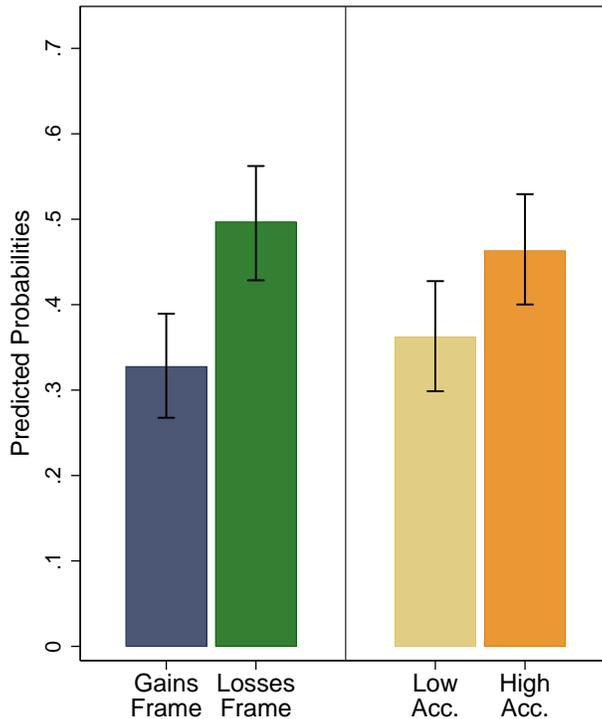


Figure 1: Risk-seeking rates of municipal politicians in the dam experiment, by gains/loss frame (left) and by low/high accountability treatment (right). Bars are 95% confidence interval estimates. Quantities are predicted probabilities, generated using Clarify.

This result is preliminary evidence that elected politicians’ decision making on choices that involve risk is strongly conditioned by how such choices are framed. It is striking that in a scenario that entails substantial material destruction and potential human casualties, a subtle change in the framing of choices is sufficient to make a risky alternative that is a-priori inferior to a certain one appear equally attractive to elected decision makers.

Table 2 presents the effect of manipulating implied accountability. Increasing the salience of elections and the public nature of the task results in significantly higher risk-seeking rates by politicians. When the election is made salient and media attention is present, the officials were 10 percentage points more likely to choose the risky option. This result is statistically significant and substantively important. A comparison to the framing effect we find highlights the significance of our accountability treatment. The effect of framing outcomes as gains vs. losses is widely recognized as a substantively large effect. And in our study the framing effect is larger than the effect of accountability. However, the 10 percentage-point

Choice	Frame		Overall
	Gains	Losses	
Certain	150 67%	109 50%	259 59%
Risky	73 <b>33%</b>	108 <b>50%</b>	181 41%
Total	223	217	440

Table 1: US municipal politicians’ preferences for certain/risky choices in the dam flood experiment, by gain/loss treatment.  $\chi^2 = 13.178$ ,  $p = .000$ .

effect for our accountability treatment is nearly 60 percent of the size of our framing effect. Given how important framing effects are to understanding politics, we think this is strong evidence that accountability also plays a role in politicians’ willingness to make risky decisions.

Choice	Accountability		Overall
	Low	High	
Certain	145 64%	114 54%	259 59%
Risky	82 <b>36%</b>	99 <b>46%</b>	181 41%
Total	227	213	440

Table 2: US municipal politicians’ preferences for certain/risky choices in the dam flood experiment, by low/high accountability treatment.  $\chi^2 = 4.866$ ,  $p = .027$ .

There is no significant interaction between the loss/gain treatment and the accountability treatment (for full estimation results, see SI). However, accountability has a higher impact on risk seeking in the loss frame (+13% when moving from low to high accountability) than in the gains frame (+6%).

That implied accountability increases risk seeking runs contra to those theories that see the accountability aspect of holding higher office as motivating risk aversion. (Lefebvre and Vieider, 2013; Weigold and Schlenker, 1991). These findings are in line with our expectation that primed public exposure and electoral proximity create a loss-frame-like environment that motivates risk taking.

We also expect that any reaction to implied accountability will be dependent on

the respondent’s interest in maintaining elected office. To test this expectation, we leverage a question on future career plans that was part of the survey: participants were asked to indicate if they see themselves holding elected office in five years from the time of taking the survey. 259 participants (59%) indicated that they see themselves holding elected office in either municipal government or higher (state legislature and upwards). 181 participants (41%) responded that they do not plan to hold elected office in five years.

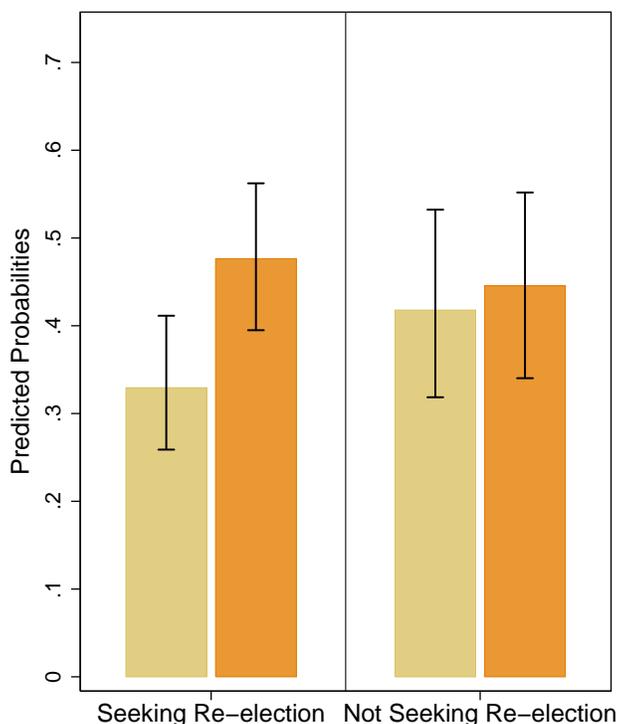


Figure 2: Risk-seeking rates of municipal politicians in the dam experiment, by politicians interested in seeking re-election (left) and not interested (right). Bars are 95% confidence interval estimates. Quantities are predicted probabilities, generated using Clarify.

Figure 2 and tables 3 and 4 overview the impact of the accountability treatment in both populations. While high accountability significantly and substantively increases risk-seeking for politicians interested in maintaining elected office (+15%), politicians who do not plan on staying in elected politics exhibit a small (+3%) and statistically insignificant increase in risk-seeking. This result is especially striking when observing the lack of variance in reaction to gains/loss frames across these two subgroups.

This result is robust to multiple controls, and particularly, to those variables

Choice	Interested in Seeking Elected Office			
	Yes		No	
	Low Acc.	High Acc.	Low Acc.	High Acc.
Certain	96 67%	68 52%	49 58%	46 55%
Risky	47 <b>33%</b>	62 <b>48%</b>	35 <b>42%</b>	37 <b>45%</b>
Total	143	130	84	83

Table 3: US municipal politicians’ preferences for certain/risky choices in the dam flood experiment, by low/high accountability treatment, split on whether participants see themselves running for elected office again in five years. Yes:  $\chi^2 = 6.239$ ,  $p = .012$ . No:  $\chi^2 = 0.144$ ,  $p = .704$ .

that are found to be significant predictors of being interested in re-election - gender, tenure length, partisan affiliation and role seniority. Full regression results for these robustness checks are reported in the SI.

## 5 Discussion

Risk management is fundamental to elite political decision making, and it underlies almost every aspect of political life. But the lack of direct, systematic evidence on the risk preferences of elected representatives has meant that we know very little about the cognitive processes that politicians are subject to when adjudicating between choices of varying levels of risk. In particular, we do not know whether different frames alter the risk calculus of elected politicians when they face consequential decisions, and it is theoretically unclear if and how accountability impacts politicians’ tendency to engage in risky behaviour. This study provides first evidence that gain/loss frames substantially impact elected politicians’ risk preferences, suggesting that consequential policy choices made while in office may be strongly subject to biases that political theories often overlook when describing elite decision making. We also provide first systematic evidence that increasing the implied accountability of a task - as operationalized by heightened public exposure and electoral proximity - results in more risk-seeking by those representatives who are interested in remaining in office (and only by them), perhaps because it places participants in a perceptual domain of losses. This, to our knowledge, is first direct evidence of elected politicians exhibiting such reaction to primed accountability.

Future research on this topic would benefit from examining whether these outcomes apply to more senior politicians - whether at the state or national level. While

Treatment	Interested in Re-Election	
	No	Yes
Loss Frame	1.97*** (0.501)	1.97** (0.629)
High Acc.	1.77** (0.449)	1.10 (0.350)
N	273	167

Table 4: Estimation results of logistic regressions on the likelihood of US local politicians making a risky choice in the dam question, by participants' interest in seeking elected office in five years from the time of taking the survey. Coefficients are reported as odds ratios. Standard errors in brackets. \* =  $p \leq 0.1$ , \*\* =  $p \leq 0.05$ , \*\*\* =  $p \leq 0.01$ .

we do believe that our results should generalize to other classes of elected representatives, the literature provides reasons to suspect that more political experience may result in different risk calculus. This is reflected in suggestive evidence from our study (reported in the SI) that holding a more senior position is associated with more risk aversion.

Expanding the investigation to other country cases can help examine potential interactions between different institutional setups and risk management by politicians.

An investigation of the impact of other biases and heuristics on politicians' risk calculus and on their decision making more broadly is also warranted. In line with Levy (2003) and Hafner-Burton et al. (2013), we believe that exploring if and how politicians' future time discounting calculus changes in face of elections is a first priority, in light of the extensive writing on the impact of the electoral business cycle on elite decision making (Alesina et al., 1997; Drazen, 2001; Franzese Jr, 2002). Equally interesting and pertinent is evaluating to what degree elected politicians are susceptible to status quo effects in their policy choices, and whether they exhibit higher or lower rates of escalating commitment in face of sunk costs compared to the general population. Together, these would provide more rigorous, evidence-based foundations on which to construct theories of executive decision making in politics.

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## Supporting Information

### 5.1 Municipal Officials Survey

Our experiment was conducted as part of a larger survey of US municipal politicians conducted by Dan Butler and other collaborators. We were assigned a random sub-sample of 440 participants to whom our module was presented, and they were randomly assigned to one of the four conditions resulting from our 2x2 treatment. All data presented in this paper relates only to this sub-sample unless otherwise stated.

The sample of city officials for the survey was constructed by first downloading a list of all of the cities in the U.S. Census with a population of 3,000 or more. Research assistants were then hired in the spring of 2014 to search for the website of each town or city taken from the census. If the research assistants were able to identify the city’s website, they then collected the name and email address of the city’s mayor and council members (or the equivalent). This search yielded 29,136 officials. We invited these officials to take our survey by sending them the following text in an email:

“Dear [Official’s Title] [Official’s Name],

My name is [Redacted] and I am a [Position] at [Name of University]. I am conducting research to learn more about municipal officials, the decisions they make, and local politics and policy. Would you be willing to complete a confidential, 15-minute survey on this topic?

To take the confidential survey, please click the link below:

Take the Survey

Or copy and paste the URL below into your internet browser:

[Redacted]

The results from the study we conducted two years ago can be accessed at the following website: [Redacted]

[Information about human subjects protection, including contact information]

[Salutation]”

Those who clicked on the link were redirected to a Qualtrics survey. The overall response rate was 18 percent (5,370 took at least part of the survey), on par with recent expert surveys of this nature (e.g., Fisher and Herrick, 2013; Harden, 2013).

## 5.2 Meta-analytic Effect Size Estimates

To assess our gain/loss treatment effect size, we rely on previous work that categorizes expected framing effect sizes by the task design. Kühberger (1998) provides a comprehensive meta-analysis. Our experimental design falls into the following categories in his typology: it uses a reference to a risky event (rather than outcome salience); it presents a choice between a riskless and a risky option (rather than risky/riskier); it deals with a single risky event; the primary framing manipulation is loss/gain (rather than task-responsive); the response mode is choice (rather than rating/judgment); we use comparison between subjects rather than within subjects; use individuals (rather than groups) as the unit of analysis, and employ an adult, non-student sample. Relying on Kühberger’s estimates, if politicians respond to the manipulation in an Asian Disease-type experiment as the subjects in his meta-analysis do, we should expect to see a Cohen’s  $d$  effect size of 0.26 to 0.64 across conditions.

## 5.3 Descriptive Statistics

Table 5: Sample Descriptive Statistics: Role Distribution

Position	N	Proportion
Council Members or Equivalent	270	61.36%
Deputy Mayor or Equivalent	12	2.73%
Mayor	68	15.45%
Other Role	90	20.45%
Total	440	100%

Table 6: Sample Descriptive Statistics: Locality Type

Position	N	Proportion
Borough	21	4.77%
Charter Township	3	0.68%
City	281	63.86%
Metropolitan Government	1	0.23%
Town	84	19.09%
Township	16	3.64%
Village	34	7.73%
Total	440	100%

Table 7: Sample Descriptive Statistics: Tenure Length at Time of Survey

Years	N	Proportion
1	46	10.67%
2	50	11.60%
3	47	10.90%
4	37	8.58%
5	45	10.44%
6 or more	206	47.80%
Total	431	100%

Table 8: Sample Descriptive Statistics: Political Affiliation and Gender

Party Affiliation	N			Proportion	
	Overall	Male	Female	Male	Female
Republican	164	127	37	77%	23%
Democrat	162	94	68	58%	42%
Ind. / Unaffiliated	95	66	29	69%	31%
Other	12	7	5	58%	42%
Total	433	294	139	68%	32%

Table 9: Sample Descriptive Statistics: Political Affiliation and Education

Education	N	Proportion
Less Than High School	1	0.23%
High School Diploma	15	3.42%
Some College	68	15.49%
Associate Degree	29	6.61%
Bachelors Degree	140	31.89%
Master's Degree	115	26.20%
Professional / Doctorate Degree	71	16.17%
Total	439	100%

Table 10: Sample Descriptive Statistics: Future Career Plans Five Years From Time of Taking Survey

Plan	N	Proportion
Not in Elected Politics	167	38.66%
Elected Office, Municipal Level	210	48.61%
Elected Office, State Level	28	6.48%
Elected Office, Higher Level	27	6.25%
Total	440	100%

Table 11: Sample Descriptive Statistics: Self-Reported Position on a Liberal/Conservative Scale (1 = Very Liberal, 7 = Very Conservative)

Trait	N	Mean (Std. Dev.)
Republican	167	5.43 (0.940)
Democrat	163	2.94 (1.106)
Independent / Unaffiliated	94	4.25 (1.116)
Total	424	4.21 (1.515)

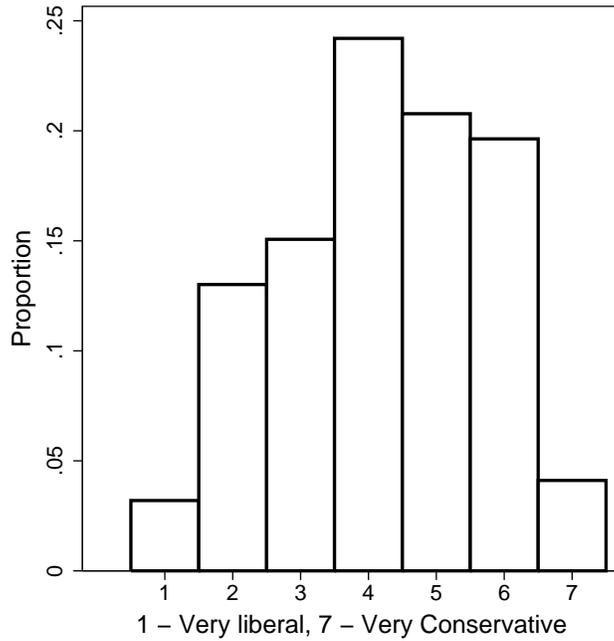


Figure 3: Sample descriptive statistics: distribution of US municipal politicians' self-reported position on a liberal-conservative scale. 1 = Very Liberal; 7 = Very Conservative. N=438.

## 5.4 Balance Tests

Table 12: Random allocation balance tests: proportions and  $p$  values for selected covariates across gains/losses frames

Variable	Gains	Losses	$p$ value
Gender (Proportion Female, t-test)	32.88%	32.26%	0.890
Education ( $\chi^2$ )	-	-	0.173
Locality Type ( $\chi^2$ )	-	-	0.537
Tenure (logit, coefficient $p$ value)	-	-	0.301
Role ( $\chi^2$ )	-	-	0.109
Future Career Plans ( $\chi^2$ )	-	-	0.816
Party ( $\chi^2$ )	-	-	0.451

Table 13: Random allocation balance tests: proportions and  $p$  values for selected covariates across low/high accountability treatments

Variable	Low Acc.	High Acc.	$p$ value
Gender (Proportion Female, t-test)	35.27%	29.72%	0.217
Education ( $\chi^2$ )	-	-	0.501
Locality Type ( $\chi^2$ )	-	-	0.046**
Tenure (logit, coefficient $p$ value)	-	-	0.496
Role ( $\chi^2$ )	-	-	0.534
Future Career Plans ( $\chi^2$ )	-	-	0.766
Party ( $\chi^2$ )	-	-	0.102

Table 14: Future career plans balance tests: proportions and  $p$  values for selected covariates for politicians not interested in seeking elected office in five years from time of survey, and politicians interested in seeking elected office.

Variable	Not Seeking Re-Election	Seeking Re-Election	$p$ value
Gender (Proportion Female, t-test)	27.27%	35.79%	0.066*
Education ( $\chi^2$ )	-	-	0.708
Locality Type ( $\chi^2$ )	-	-	0.319
Tenure (logit, coefficient $p$ value)	-	-	0.001***
Role ( $\chi^2$ )	-	-	0.039**
Party ( $\chi^2$ )	-	-	0.134

## 5.5 Full Estimation Results

Variable	Model 1	Model 2	Model 3		Model 4	
			Re-Election		Re-Election	
			Yes	No	Yes	No
Loss Frame	1.991*** (0.394)	1.772** (0.494)	1.973*** (0.501)	1.977** (0.629)	2.252*** (0.619)	2.102** (0.717)
High Accountability	1.477** (0.292)	1.307 (0.374)	1.771** (0.449)	1.106 (0.350)	1.783** (0.488)	1.157 (0.392)
Loss X High Acc.		1.263 (0.500)				
Female					0.947 (0.274)	0.774 (0.309)
Tenure Length					1.036 (0.076)	0.795** (0.083)
Democrat					0.479** (0.146)	1.237 (0.516)
Independent					0.717 (0.377)	1.091 (0.463)
Deputy Mayor					1.172 (0.987)	0.771 (0.713)
Mayor					0.382** (0.176)	1.208 (0.684)
Other Role					0.792 (0.445)	1.580 (0.786)
N	440	440	273	167	257	158
Log-likelihood	-289.455	-289.280	-176.892	-111.759	-158.867	-101.777
$\chi^2$	17.16	17.51	13.52	4.81	26.68	12.41

Table 15: Estimation results (coefficients are reported as odds ratios, with standard errors in parentheses): impact of loss frame, high accountability treatment, gender, tenure length, political affiliation and elected role on the likelihood of risk-seeking by American municipal politicians. The dependent variable is the choice type made in the dam flood experiment, coded 0 for certain and 1 for risky. The estimated models are all logit regressions. Loss Frame is coded 0 for the gains frame, 1 for the losses frame. Accountability is 0 for low, 1 for high. Gender is 0 for men, 1 for women, tenure length is coded by number of years. Base rate political affiliation is republican; base rate role is council members or equivalent. \* =  $p \leq 0.1$ , \*\* =  $p \leq 0.05$ , \*\*\* =  $p \leq 0.01$ .