Framing Political Risks:
Individual Differences and Loss Aversion
in Personal and Political Situations

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Abstract
People are motivated to avoid losses. In the context of politics, studies consistently show that the threat of losses increases support for risky public policies more than the promise of gains. Here, we predict that this loss aversion is calibrated by individual differences related to one’s ability to accommodate resource loss, and we investigate how these individual differences moderate reactions to the threat of losses and the promise of gains. Results from large-N experiments consistently demonstrate that this moderation effect crucially depends on whether the resource loss relates to oneself or one’s group – whether the setting is personal or political. Consistent with classic assumptions, individuals with inferior abilities to cope with resource loss are more loss averse in personal settings. In political settings where group resources are threatened, effects reverse: Individuals with superior resources and a more central position within the group consistently respond more to the prospect of loss.

Keywords: Framing; risk taking; individual differences; political persuasion; loss aversion

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Political decisions often involve risk. In the United States in 2016, many voters decided to gamble on the unknown and voted for Donald Trump, a political novice with unusual manners and policy positions, rather than for his more politically experienced opponent, Hillary Clinton. Similarly, in the United Kingdom in 2016, the referendum decision to leave the European Union (‘Brexit’) involved a great leap into an uncertain future. Both the Trump and Brexit campaigns leading up to the events revolved around the threats and losses (especially pertaining to immigration) that would ensue if status-quo oriented decisions were made (Mutz, 2018; Goodwin & Milazzo, 2017). The fact that their strategic focus on losses paid off took many political observers by surprise. Yet, their successful campaigns are consistent with long lines of research across political science, psychology and economics, positing that loss aversion is the key psychological driver behind risky decisions.

Loss aversion constitutes one of the best-documented phenomena in psychology (e.g., Baumeister et al., 2001; Rozin & Royzman, 2001). People pay more attention to losses than to gains, just as they tend to engage in particular behaviors in the face of losses. Specifically, people take risks when they believe it helps them avert a loss, but when they face a gain, they opt for risk-averse strategies that maintain status-quo (e.g., Tversky & Kahneman, 1981). Findings on how people process and react to losses have also traveled to the study of politics (see Soroka, 2014 for a review). Consistent with psychological findings, citizens often endorse risky policies when elites frame the policies as safeguards against societal losses rather than as a way to secure gains (e.g., Arceneaux, 2012; Druckman & McDermott, 2008; Kam & Simas, 2010).

Although loss aversion can inform our understanding of key political developments and already plays a prominent role in political science, we know little about why people take risks in response to political losses. Almost all psychological theories on loss aversion focus on risky decisions in personal contexts. Most prominently, so-called Foraging
Theory traces the origins of loss aversion to an asymmetry in the welfare consequences associated with losses and gains for the self (e.g., Hibbing, Smith, & Alford, 2014; McDermott, Smirnov, & Fowler, 2008). While gains help individuals improve their well-being, losses can push individuals’ below the threshold of sustainable living and threaten their chances of survival and reproduction. According to Foraging Theory, humans may therefore have evolved to be more concerned with guarding against losses than with obtaining gains, even when it requires them to take risks.

When investigating the effects of loss aversion in politics, the political science literature has assumed (explicitly or implicitly) that Foraging Theory also explains how losses shape citizens’ political decision-making (e.g., Arceneaux, 2012; McDermott et al., 2008). While the similar results in psychological and political science studies supports this view, it nonetheless remains puzzling given other widely shared understandings in political science. According to psychology, loss aversion reflects concerns about the welfare of the self. But in the context of mass politics, citizens’ political decisions – e.g., whether or not to support risky policies – affect the welfare of others (see, e.g., Feldman, 1982; Petersen & Aarøe, 2013). Thus, a robust finding is that when people make up their minds about politics, they find it difficult to link their political opinions to personal fortunes (e.g., Kinder & Kiewiet 1981; Sears & Funk, 1991). Instead, sociotropic concerns that are unrelated to circumstances in citizens’ private lives drive political decisions. This finding likely extends to recent risky political events: Support for both Trump and Brexit mostly reflects concerns about status and cultural standing, and not personal economic grievances (e.g., Inglehart & Norris, 2016). This difference between personal and political contexts complicates the application of Foraging Theory to political contexts.

On this basis, the present manuscript addresses a foundational question in political research on loss aversion: Why does information that emphasizes losses propel people to both
(1) make risky personal choices on their own behalf and (2) risky political decisions on behalf of others? We argue and demonstrate that answering this question is critically important if we want to understand what drives citizens’ support for risky political policies and reforms. But it also matters if we wish to understand who is more susceptible to loss-framed political communication. As Kam and Simas (2010, p. 381) argue, most political communication studies on the effects of framing on risk-seeking behaviors focus “on characteristics of the message … [thereby] largely ignoring the characteristics of the decision maker.” This poses a problem, they continue, because “such an approach suggests that all individuals are equally vulnerable” to loss framed persuasive attempts. We argue here that understanding the psychology of loss aversion in politics contributes to understanding when various political frames are more or less persuasive to different kinds of citizens.

This manuscript conducts the first systematic comparison of support for risky policies in the face of losses and gains across comparable situations ranging from fully personal (self-regarding) to fully political (other-regarding). We demonstrate that in both personal and political situations, loss-framed messages increase risk-taking. Critically, however, we show that the type of citizen who reacts to loss-frames changes fundamentally, as we move from one setting to another. In self-regarding situations, our findings confirm earlier work on loss aversion: High-need individuals, who lack resources, increase their support for risky policies when facing a loss. Importantly, however, the effects fully reverse when we move to a political situation: When the welfare of others is at stake, low-need individuals with abundant resources, start to take risks. Additional analyses suggest this reversal-of-effects is not because people with sufficient resources display empathy towards those that are worse-off. Rather, their risk-acceptance reflects attempts to protect their “high-status” position within society against losses. In the conclusion, we discuss the implications of these findings for understanding political loss
aversion and for how and for whom political elites can generate policy support by appealing to losses.

**The Psychology of Loss Aversion and Risk**

*Loss aversion* refers to the idea that people care more strongly about a loss than about a gain of equal magnitude. For example, it feels worse to lose $10 than it feels good to gain $10. *Risk* measures variance in outcomes. A risk-less choice is one where the outcome is certain. In contrast, a risky choice is one where the outcome is uncertain and vary.

In their seminal experiment, the *Asian Disease Problem*, Tversky & Kahneman (1981; Kahneman & Tversky, 1979) demonstrated a link between receiving loss-framed messages and willingness to adopt a risky treatment program against a disease outbreak. In the experiment, both treatment groups first read that an “unusual Asian disease” would kill 600 people. Participants in the first treatment group, the *gain-frame* condition, were then asked to choose between a risk averse Program A that would save 200 out of 600 people with certainty, and a risk seeking Program B that would save 600 people with 1/3 probability or save no one with 2/3 probability. Participants in the other group read about the same two treatment programs, except here the consequences were framed in terms of *losses* (e.g., 400 out of 600 people will *die* in Program A). Although the expected value of the outcomes remained constant across conditions, the move from the gain-framed to the loss-framed version of the programs caused a marked shift in participants’ preferences. While most of them supported the risk averse option in the game-framed version, they became much more likely to take risk when thinking it could help avert a loss.

The effect of loss-framed information on risk-seeking preferences has found considerable support since then (for a review of the literature, see Kühberger, Schulte-Mecklenbeck, & Perner, 1999). It has also led to several extensions. Some work focuses on
how emotional reactions to loss-frames and gain-frames influence risk-seeking behavior (e.g., Druckman & McDermott, 2008), how framing effects vary from one problem domain to another (e.g., decisions involving lives vs those involving money, e.g., Jou, Shanteau, & Harris, 1996). Other bodies of work examine how framing depends on individual characteristics of the decision-maker, like gender (e.g., Fagley & Miller, 1990) or personality traits (e.g., Kowert & Hermann, 1997). Here, however, findings are equivocal: “the mixed (and occasionally contradictory) results […] suggest the need for additional theoretical reflection and careful empirical progress” (Boettcher, 2004, p. 335). Moreover, virtually no studies examine what we focus on here: The distinction between personal and political decision-making scenarios.

While the original Asian Disease Problem focuses on decisions where others face losses (i.e., the individuals who were infected by the disease), key theoretical efforts to explain loss aversion involve situations where the decision-maker faces personal losses. For instance, McDermott, Fowler and Smirnov (2008, p. 337) push the locus of analysis back in evolutionary time and draw on Risk-Sensitive Optimal Foraging Theory (see also Caraco, 1983; Stephens & Krebs, 1986). Their model assumes that agents evaluate negative and positive changes in the environment against a reference point, or current need level, defined as the disparity between the agent’s current state and a desired end state (see also Rode et al., 1999). The model implies that when resource availability (e.g., food) fluctuates between scarcity and abundance, a context-specific strategy that switches between risk seeking and risk averse behavior can maximize survival chances and be selected for over evolutionary time. Specifically, they posit that periods of resource scarcity (i.e., losses) push agents below their current need state (e.g., into starvation) and thus lead them to take greater risks to bridge the disparity gap between current and desired state. Put simply: When food is scarce and people starve, they take risks to obtain food. In contrast, periods of resource abundance (i.e., gains) allow agents to stay at their desired need state. They are less willing to take risks and prefer the status-quo.
The evolved tendency to take risks when confronting losses also explains framing effects. Loss-framed scenarios function as a cue that places people in a “region of perceived losses” (Kam & Simas, 2010, p. 382). They therefore experience it as an increase in the disparity between the present and a desired state. And since “humans loathe losses” (Arceneaux, 2012, p. 272) loss-frames propel greater risk-taking (e.g., Mishra & Fiddick, 2012; Wang, 2002).

Importantly, the models also offer a key individual-level characteristic that explains why people react differently to framing effects: Need levels. Individuals vary in their need levels. Some are low-need individuals who are affluent and possess important resources, while others are high-need individuals who lack resources and are worse off. These differences in need likely influence how people respond to situations that involve losses and gains. In particular, the specter of losses likely looms larger among high-need individuals. For example, while food scarcity challenges everyone, it constitutes a larger problem for high-need individuals who are already close to starvation. Compared to low-need individuals who may have acquired sufficient resources elsewhere and is far from starvation, high-need persons should therefore be particularly willing to take risks in loss situations.3 As Mishra, Gregson & Lalumière (2012, p. 84) explain, in the context of loss-framed scenarios, “someone in a situation of high need facing loss … may further elevate risk-accepting behavior because of the particularly high salience of the perception of loss in this scenario”. They demonstrate that risk-seeking behavior involves an interaction between individual differences in need and the framing of choices (as gains or losses): Compared to low-need individuals, high-need individuals become much more risk seeking in loss-framed decision scenarios.

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3 McDermott et al. (2008, p. 337) argue that, “a hungry animal should be more motivated, and thus risk taking, to find food, than a full one.”
Individual Differences in Need across Personal and Political Situations

Foraging Theory predicts decision-making involving *personal* choices (e.g., Mishra & Fiddick, 2012; Mishra et al., 2012; Rode et al., 1999; Wang 2002); that is, situations in which decisions influence one’s own welfare. But what happens when we move into the realm of politics, i.e. settings where decisions apply to groups of people? When citizens make political decisions – e.g., about which politicians, political parties, or policies to support – their choices have beneficial or adverse consequences for the well-being of *others*. In our view, the move from *personal* to *political* decisions raises two critical questions regarding the applicability of Foraging Theory as an explanation for loss aversion and risk-seeking behavior. First, can we assume that a model developed to explain individual decision-making generalizes to situations where the outcomes do not directly affect oneself, as in politics? Second, even if we can, should we expect that high-need individuals who lack resources themselves also react strongly to loss-framed *political* messages involving others’ welfare?

Regarding the first question, political science research harkening back to Kinder and Kiewiet (1981) suggests that personal “pocketbook” considerations do not strongly enter the equation when citizens reason about politics. This line of research therefore raises doubts that decision-making based on Foraging Theory travels to political settings. Nonetheless, proponents of Foraging Theory reply affirmatively: “If human cognitive architecture evolved to respond differentially to risk in the face of scarcity and abundance based on environmental contingencies, then those cues will serve to trigger specific risk-taking behaviors in other arenas, including political contexts” (McDermott et al. 2008, p. 342).

Consistent with this view, psychologists and anthropologists continually emphasize the social nature of humans. Humans evolved in densely knit small-scale groups, where the survival and welfare of one particular group member depended on how well off other group members were (see Petersen, 2015). This perspective implies that decisions concerning
the well-being of others indirectly affects one’s own well-being (e.g., when someone you depend on is hurt, it indirectly hurts you). This line of reasoning suggests that Foraging Theories apply to political decision making: When losses threaten others, you evaluate your political choices as if the loss has personal implications for you.

On this basis, one prediction is that high-need individuals also become more risk seeking in loss-framed scenarios where others’ resources are at stake. This prediction fits well with other studies demonstrating that when you experience a need yourself, you become more empathic towards the needs of others as well (see, e.g., Petersen et al., 2014; Stellar et al., 2012). These views imply that high-need individuals who take greater risks when facing personal losses also support risky policies to help fellow citizens avoid losses. That is, when political actors frame their risky policies as safeguards against losses, they should generate support among people who worry about personal losses themselves, even if these people are not directly affected.

At the same time, a competing – in fact, directly opposed – prediction is also plausible. First, some empirical studies question empathy-oriented perspectives. Thus, research demonstrates that people often fail to predict others’ risk propensities when facing losses and gains (Faro & Rottenstreich 2006; Stone et al. 2013), especially when asked to think about “abstract others” whom they do not know (Hsee & Weber 1997). Second, recent studies on the psychology of power and dominance (Anderson & Galinsky, 2006; Maner et al., 2007) posit that low-need individuals stand to lose when the welfare of fellow group members is threatened. For example, Jordan, Sivanathan and Galinsky (2011, p. 534) integrated a large literature on unstable hierarchies among non-human species, human adults and children to argue that “when the hierarchy is unstable, it is the powerful, faced with the potential loss of access to resources and prospective mates, who experience the greatest stress-related physiology,” a key driver of risk-seeking behavior. Importantly, they implemented an economic variation of the Asian
Disease Paradigm to demonstrate that when participants were primed with being (1) resourceful (e.g., a high-ranking member of an organization) and (2) in an unstable group (e.g., an organization with economic difficulties that forced lay-offs), they significantly increased their preferences for a risk-seeking plan to avert the loss (e.g., the lay-offs).

Importantly, this dominance-oriented perspective challenges the expectations based on the empathy-oriented perspective. Specifically, the dominance-oriented perspective implies that the effect of being high-need versus low-need reverses as we move from purely personal to political situations: While low-need individuals may feel less of an need to take risks to avoid personal losses, they may become more risk-seeking when fellow citizens are threatened in political situations. Put simply: When elites frame policies as safeguards against losses experienced by the entire society, they can garner support among resourceful individuals with central societal positions, but not among individuals who hold peripheral societal positions. Interestingly, the dominance-based perspective comports with findings on the drivers of support for the risky political outcomes mentioned in the “Introductory” section. Thus, concerns about losses in social status and cultural standing among groups with a traditional position at the center of society drove both Trump and Brexit support, while concerns about loss of personal finances mattered less (Inglehart & Norris, 2016; Mutz, 2018).

**Study Overview**

This manuscript examines how people evaluate loss framed and gain framed choices that affect either their own welfare (i.e., a personal setting) or the welfare of others (i.e., a political setting). Building on Foraging Theory (e.g., McDermott et al., 2008) and work on loss aversion (e.g., Arceneaux, 2012; Tversky & Kahneman, 1981), we expect that loss frames lead to a greater preference for risk-seeking policies than gain frames, both across personal and political settings. Drawing on these same ideas, we expect that in personal decision scenarios, the framing effect
on risk-seeking preferences is stronger among high-need individuals than among low-need individuals. Because they lack resources, high-need individuals likely take greater risks to avoid further personal losses that push them below the threshold of sustainable living (e.g., Mishra & Fiddick, 2012; Wang, 2002).

We have competing predictions on how need levels influence reactions to loss and gain frames in political settings. On the one hand, high-need individuals may take political risks to help others avoid a certain loss. This prediction flows from the logic of empathy and the idea that high-need individuals internalize the need of others who lack resources. On the other hand, low-need individuals may be more willing to support risky policy proposals to fend off threats to the welfare of others. This prediction flows from the logic of dominance and the idea that resourceful individuals stand to lose the most when certain losses threaten fellow “group members.”

Materials and Methods

Participants

To test our hypotheses, we conducted an online survey experiment in the fall of 2015 with 2,005 participants recruited from the Amazon Mechanical Turk (MTurk) panel. Political scientists increasingly rely on MTurk as an experimental platform. Studies show that MTurk samples are more representative of the national population than often-used samples of college students (Arceneaux 2012; Berinsky, Huber, & Lenz, 2012; Krupnikov, & Levine 2014). Moreover, studies show that causal estimates obtained from MTurk survey experiments produced resemble those obtained from population-based samples (Mullinix et al. 2015).

In our sample, the median age was 35 (SD = 12 years), and 51% of the participants

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4 For replication data and code, see https://osf.io/e6p3v/
were men. In terms of education, 1% had not graduated from high school, 12% were high school graduates, 29% had some college or were currently enrolled in college, 48% were college graduates, and 10% had a post-college degree. The median household income was between “$30,000 and $39,999,” a number that is very similar to the actual U.S. median income level of $30,622 in 2015. On a 10-point political ideology self-identification measure, 1 denoting the left-wing extreme and 10 denoting the right-wing extreme, the median number was 4 (i.e., slightly left-leaning).

A pretreatment questionnaire conducted immediately prior to the experimental manipulations included a series of questions measuring participants’ need levels. We discuss these measures below, but we turn first to the experimental set-up.

Stimulus Materials

We randomly assigned each participant to a condition in a 3 (Version: personal vs personal/political vs political) x 2 (Frame: positive vs negative) between-subjects design. Within each condition, we asked participants to make decisions on two problems presented in random order. We modeled each problem after the Asian Disease Problem paradigm (Tversky & Kahneman, 1981, p. 454). One was simply a Disease Problem (“Imagine that the U.S. is preparing for the outbreak of an unusual Asian Disease”), and the other was an Economic Recession Problem (“Imagine that the U.S. is experiencing an economic relapse into recession”). We chose these two problem types because they concern very specific and distinct aspects of people’s lives (health and economic resources, respectively; see also Jou et al., 1996). This allowed us to measure relevant individual differences in resources and need levels using scales specifically tailored to each problem (see Test 2 below).

5 https://fred.stlouisfed.org/series/MEPAINUSA672N
We exposed participants to each problem in six versions (corresponding to the six experimental conditions) that varied along two dimensions. First, since the crucial aspect of our study is the distinction between personal and political decisions—i.e., whether your decisions affect your own welfare or the welfare of others—we created three problem descriptions: A personal version, a personal/political version, and a political version (for full descriptions, see the Supplemental Appendix).

1. **The Personal Version** emphasized that participants’ own welfare was immediately affected by the problem. Thus, the Economic Recession Problem read, “Your boss has implied that YOUR salary is one of those affected by the recession.” The Disease Problem read, “Your doctor has implied that YOU are one of those affected by the disease.”

2. **The Personal/Political Version** emphasized that the welfare of participants as well as 600 persons from the participants’ residential area were affected by problem. Thus, participants read the same information as in the Personal Version, but with an extra sentence in the Disease Problem stating that, “[The disease] is expected to infect 600 people in your area and kill everyone who does not receive treatment.” The Economic Recession Problem read, “The workplaces of 600 employees in your area are affected by the relapse [into recession] and expect to cut back on salaries.”

3. **The Political Version** emphasized that the welfare of 600 persons from one’s residential area was affected by the problem, but not the participant’s own welfare. Thus, the versions were identical to the Personal/Political Versions except for a sentence in the Disease Problem stating that, “Your doctor has reassured you that you are NOT one of those affected by the disease.” The Economic Recession Problem read, “Your boss has reassured you that your salary is NOT affected by the relapse.”

6 We use the number 600 to keep in line with the traditional Asian Disease Problem.
In designing the three versions, we took great care to ensure that they were as similar as possible across the two domains. We kept the differences across the three versions within each domain at a minimum, making sure they only varied on the key aspect of interest, namely whose well-being was affected by the problem. We included the Personal/Political version, the mix between the two other versions, to explore how people reason about problems that affect themselves and others: Does it resemble self-regarding or other-regarding decision-making?

After reading the problem descriptions, we presented participants with two policy programs aimed at combating the problem. Following Tversky and Kahneman (1981), one program had a certain and risk-averse outcome (e.g., Disease Problem: “If program A is adopted: out of 600 people, 200 of you will save your life”; Economic Recession Problem: “If program A is adopted: out of 600 employees, 200 of you will save your salary”), and the other program had an uncertain and risk-seeking outcome (e.g., Disease Problem: “If program B is adopted: out of 600 people, there is a 1/3 probability that all of you will save your life, and 2/3 probability that none of you will save your life”; Economic Recession Problem: “If program B is adopted: out of 600 employees, there is a 1/3 probability that all of you will save your salary, and a 2/3 probability that none of you will save your salary”). All programs have the same expected value (200 in each case).

The second dimension we varied was the framing of the two programs. Thus, half of the participants received the gain-framed version of the policy programs, framed in terms of number of people/people’s salaries/being saved (as the examples above); the other half received the loss-framed version of the policy programs, emphasizing the number of people/people’s...

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7 To draw attention to the personal versus impersonal features of the conditions the personal and personal/political conditions capitalized the words “YOU” and “YOUR” whereas the political versions capitalized the word “NOT.”
salaries/being lost (e.g., Disease Problem: “out of 600 people, 400 of you will lose your life”; Economic Recession Problem: “If program A is adopted: out of 600 employees, 400 of you will lose your salary”, emphasis added).

Overview of Tests

Before proceeding to the analyses, we briefly describe the three-part test we utilize to test our argument. First, we examine the presence of framing effects. This test allows us to see if our framing manipulations work as prior work would suggest. Second, we test if participants’ need levels condition the effect of framing on risk preferences across personal and political settings. Third, we delve into the potential distinction between personal and political choices by investigating if differences in framing effects in the personal and the political domains relate to dominance, empathy, or both. That is, we ask: Do people take risks on behalf of others because they empathize with their need or because they want to secure their own position within the collective?

Test 1. Framing Effects across Personal and Political Situations

We first address the basic question of whether loss frames lead to stronger preferences for risk than gain frames. This prediction flows immediately from prior work on loss aversion (e.g., Arceneaux, 2012; Druckman & McDermott, 2008; Tversky & Kahneman, 1981). To examine this, we estimated a series of logistic regression models, where we regressed Choice of Program (coded 0 for the risk-averse program and 1 for the risk-seeking program) on a binary Frame variable (coded 0 for gain frame and 1 for loss frame). We estimated separate models for both the Economic Recession Problem and the Disease Problem, as well for each of three problem versions, totaling six analyses.
Results

We display the results in Figure 1. It shows the effects of framing condition on the probability of choosing the risky policy option for the different problem versions separately. The vertical lines display 95% confidence intervals.

[Insert Figure 1 about here.]
The figure shows a substantial and significant framing effect across all six versions. Across the board, the loss frames propelled participants to increase their support for risk-seeking programs compared to participants exposed to the gain frames. This is consistent with prior work. When we calculate the predicted probabilities collapsed across the different versions and domains (not shown), we find that the aggregate predicted probability of expressing a preference for the risk-seeking program is .53 for participants exposed to the loss frame, compared to just .35 among participants exposed to the gain frame (p < .001).\(^8\) In other words, framing has quite substantial effects on policy preferences. Support for risky policies increase with about 18 percentage points as we move from the gain frame to the loss frame. This effect was similar across the three policy versions and between the two problem domains: \(b_{\text{Personal, Disease Problem}} = .14, p < .001\); \(b_{\text{Personal/Political, Disease Problem}} = .24, p < .001\); \(b_{\text{Political, Disease Problem}} = .19, p < .001\); \(b_{\text{Personal, Economic Recession Problem}} = .21, p < .001\); \(b_{\text{Personal/Political, Economic Recession Problem}} = .18, p < .001\); \(b_{\text{Political, Economic Recession Problem}} = .13, p < .001\).

Test 2. Individual Differences in Framing Effects across Personal and Political Situations

Loss frames increase preferences for risk but do the effects depend on participants’ need? Recall our hypotheses. We expect, first, that high-need individuals react more to framing in the personal versions of the two problems. Loss-framed information threatens their well-being and

\(^8\) All p-values reported are based on two-tailed tests of statistical significance.
should increase acceptance of risk-seeking policies that may help avoid the loss. We have competing expectations for the personal/political and political versions. The logic of empathy leads to the expectation that high-need individuals may also respond with stronger risk acceptance to loss-framed political messages where others face losses. In contrast, the logic of power and dominance predicts that if people’s resources exists because they are centrally placed within a group, then low-need individuals should be more concerned with the well-being of other group members. In this view, low-need individuals should be more susceptible to loss frames in political situations where others are threatened (e.g., Jordan et al., 2011).

Finally, we expect that the conditioning impact of need levels on framing effects depends on how closely the needs relate to the policy issue under consideration (e.g., Kenrick et al., 2010). Put differently, the resources – or lack thereof – that make one better or worse at handling an economic downturn are not the same resources that enable one to cope with disease and health problems. Thus, we expect that variables tapping resources pertaining to one’s economic situation moderate the framing effects in the Economic Recession problems, whereas variables pertaining to one’s health moderate the framing effects in the Disease problems.

Materials and Methods

To examine our arguments, we estimated two logit regression models, one for the Economic Recession Problem and one for the Disease Problem. As before, we regressed in each of the two models Choice of Program on the binary Frame variable, but this time together with two variables tapping issue-specific Need (see below), two binary variables indicating assignment to either the Personal/Political Version, or the Political Version⁹, as well as the full set of interaction terms between these variables. The models also included the following covariates:

⁹ The Personal Version serves as the reference category.
gender, age, education, income, Big Five Personality Traits, and left-right political ideology. For brevity, we do not focus on these here, but see the Supplemental Appendix for further details. (In Supplemental Appendix A3, we also display models without covariates and models where we interact the treatment variables with the covariates. Neither of these changes substantively alter the results presented here.)

Need variables. To measure Need pertaining to the Disease Problems – what we label Health Need – we used a question from our pre-treatment questionnaire: “I think I could get by even if my personal health declined,” with values ranging from 1=Strongly Disagree to 7=Strongly Agree. For analyses, the measure was scaled to range from 0 to 1, where higher values indicate lower health need (M=.58, SD=.30). In measuring Need pertaining to the Economic Recession Problems – what we label Economic Need – we relied again on a single-item measure from the same questionnaire: “I think I could get by even if my personal income declined”, again scaled to range from 0 to 1, with higher values indicating lower economic need (M=.51, SD=.30). Note also that the correlation between Health Need and Economic Need was significant, but substantively weak, r=.1, p <.001. For additional discussion of these measures, see Supplemental Appendix A2-3.

Results
We present results from the two models in Table 1, shown below. Four findings stand out. Consider first that both the three-way interaction term Frame X Political Version X Health Need in column 1 and the three-way interaction term Frame X Political Version X Economic Need in column 2 are significant and take positive signs (pDisease Problem<.01; pEconomic Recession Problem=.026). These results demonstrate that relative to the personal version concerning oneself, framing has significantly greater effects for low-need participants in the political version concerning the well-being of others. Compared to high-need individuals, low-need individuals become much
more risk seeking when facing a loss-framed political threat. This is consistent with the literature on dominance (e.g., Jordan et al., 2011), and the argument that when one’s resources depends on the well-being of others, it motivates support for risk-seeking policies.

Second, the significant two-way interaction terms Frame X Need in both columns (pDisease Problem=.008; pEconomic Recession Problem=.04) indicate that the opposite pattern of results emerges on the personal versions of the problems. When the problem concerns participants’ personal well-being, high-need individuals take more risk as we move from the gain frame to the loss frame (e.g., Mishra, et al. 2012). Third, the three-way interaction terms between Frame X Personal/Political Version X Need are insignificant in both columns (pAsian Disease Problem=.614; pEconomic Recession Problem=.789). This indicates that need levels condition the framing effects similarly across the Personal and Personal/Political versions. In both versions, high-need individuals become markedly more susceptible to framing effects than low-need individuals. This is consistent with the argument derived from Foraging Theory: When loss frames threaten one’s personal well-being – even in situations where losses threaten the well-being of others as well – high-need individuals react strongest.

Finally, the results demonstrate that Health Need plays no role in influencing how people respond to economic situations, just as Economic Need has no effect on decisions involving one’s health. This finding is consistent with our predictions, and underscores the necessity to distinguish between issue-specific needs.

[Insert Table 1 about here.]

The estimated coefficients reported in Table 1 demonstrate that the interplay between framing and individual need differs from personal to political contexts, thereby influencing the motivation to support risky policies. To aid interpretation, we calculate predicted probabilities for choosing the risk-seeking policy program, and display the results in Figure 2. The figure shows the impact of framing on preference for the risk-seeking program, by domain and
version, across levels of individual need. (In the figure, we keep the covariates at their average values.)

[Insert Figure 2 about here]

The pattern that emerges is striking. Turning first to the Personal and Personal/Political versions of our two problems (Figure 2.A, 2.B, 2.D and 2.E), the downward sloping lines indicate that the framing effect on risk-seeking preferences clearly weakens as we move from high-need individuals (value of 0) to low-need individuals (value of 1). High-Need participants display strong framing susceptibility – a move from the gain frame to the loss frame entails an increase in probability of about .4 of choosing the risk-seeking program. In contrast, the framing effect evaporates completely among low-need participants. Here, the move to the loss frame yields a probability increase for the risk-seeking program that is both statistically and substantially indiscernible from zero. Crucially, the upward sloping lines in Figure 2.C and 2.F indicate that this pattern of results reverses when we move to political situations. Here, low-need participants show a large susceptibility to framing – the move from the gain frame to the loss frame increases risk-seeking preferences with about .20. On the other hand, the framing effect disappears among high-need individuals.

In sum, Table 1 and Figure 2 corroborate the argument that differences in need as well as context – personal, political or a mix of both – operate together to affect how gain and loss framed messages work. Consistent with Foraging Theory, framing influences high-need individuals rely more in personal settings where one’s own well-being is affected. The opposite pattern emerges in political settings where the well-being of others is affected. This lends credence to the dominance perspective.

In the Supplemental Appendix, section, B1-2, we probe the robustness of our findings with a series of additional analyses. We also discuss the possibility that the findings presented here depends on participants’ political sophistication – the argument being that
sophisticated individuals are better able to link personal considerations to political decisions. In general, these additional analyses do not alter our results substantively.

**Test 3. Are People’s Support for Risky Policies Related to Empathy or Power?**

In this section, we push the analyses a final step further and directly ask: Why do loss framed political scenarios propel low-need individuals to embrace risks? So far, we have explained this finding by arguing that low-need individuals care about the plight of others because their resources hinge on how well they fare. We now test the validity of this interpretation. If true, people who believe they have a central and dominant position within group networks should support risk-seeking policies when fellow citizens face threats. Because individuals in dominant positions within group networks gain the most in terms of access to important resources when groups are stable (Jordan et al., 2011), they should take risks when external events like economic downturns or the spread of diseases threaten group stability.

Finally, as we have emphasized before, an alternative explanation is that empathy affects how people evaluate threats to fellow citizens. Thus, a final aim of our third test is to pit the empathy explanation directly against the dominance explanation.

**Additional Materials and Methods**

To measure centrality within group networks, we rely on the dominance subscale of the Achievement Motivation Scale (Cassidy & Lynn, 1989). The subscale consists of seven items assessing a person’s perception of own position within hierarchies (“I am usually leader of my group”; “I like to give orders and get things going”; “I would enjoy having authority over people”; “I prefer to direct group activities myself rather than having someone else organize them”; “I would make a good leader”; “People take notice of what I say”; and “I enjoy planning things and deciding what other people should do”); 1=Strongly Disagree, 7=Strongly Agree.
Together, the seven items formed a reliable battery, $\alpha=.79$, scaled to range from 0 to 1, with higher values indicating more dominance ($M=.34$, $SD=.15$).

To measure empathy we rely on the Empathetic Concern Scale (Davis, 1980). It consists of seven items (“I often have tender, concerned feelings for people less fortunate than me”; “Sometimes I don’t feel very sorry for other people when they are having problems”; “When I see someone being taken advantage of, I feel kind of protective towards them”; “Other people’s misfortunes do not usually disturb me a great deal”; “I am often quite touched by things that I see happen”; “I would describe myself as a pretty soft-hearted person”; “When I see someone being treated unfairly, I sometimes don’t feel very much pity for them”); 1=Strongly Disagree, 7=Strongly Agree. Again, the items formed a reliable battery, $\alpha=.92$, which was subsequently scaled to range from 0 to 1, where higher values indicated more empathetic concerns ($M=.45$, $SD=.22$)

Results

Table 2 shows estimated coefficients from logistic models where we regress Choice of Program on Frame, Personal/Political Version, Political Version, Dominance and Empathy, as well as their interaction terms. We control for the same variables as in Test 2. Again, we estimate the models separately for the Economic Recession Problem and the Disease Problem.

Table 2 reveals results that support the dominance explanation, albeit not entirely consistently. First, we find that the three-way interaction term between Frame X Political Version X Dominance is positive and, generally, significant in both the Disease Problem and the Economic Recession Problem ($p_{Disease\ Problem}=.028$; $p_{Economic\ Recession\ Problem}=0.094$). Thus, our Dominance variable works similarly to the need variables used previously: High-dominance individuals take considerable more risks when they receive loss-framed messages concerning others,
compared to how they respond to loss-framed personal threats. Second, the Frame X Dominance interaction terms suggest that low-dominance individuals react more to framing effects in personal settings, although the effects are only marginally significant ($p_{\text{Disease Problem}}=.08$, $p_{\text{Economic Recession Problem}}=.13$). Third, the findings suggest that dominance operates similarly across the Personal and Personal/Political problem versions (the three-way interactions between Frame X Personal/Political Version X Dominance are insignificant on both versions, $p_{\text{Disease Problem}}=.785$, $p_{\text{Economic Recession Problem}}=.454$). Taken together, these findings correspond closely to our findings from Table 1, although the results are noticeable weaker for the Economic Problem.

The results, however, do not support the empathy-oriented alternative. In neither domain do the three-way interactions between Frame X Political Version X Empathy reach statistical significance. Hence, Table 2 supports our interpretation of the results from the examination of individual need levels.

To illustrate the findings, we again calculate predicted probabilities for choosing the risk-seeking policy program. Since the results for empathy were insignificant, we only display results for dominance. We also collapse across both the Disease Problem and the Economic Recession Problem, noting that the reversal between the Personal and Political versions is driven mainly by the findings from the Disease problem.\(^{10}\) We depict results in Figure 3.

\[^{10}\text{Results not shown here indicate that the four-way interaction between Frame X Political Version X Domain X Dominance (not shown) is insignificant (p=.67). This suggests that although the effects are significant on the Disease Problem, but not Economic Recession Problem, the difference between these two problems is not itself statistically significant.}\]
Again, the resemblance to our findings from Test 2 is striking. When collapsing across the two problems, we see that the framing effect is clearly strongest among low-dominance participants for the Personal versions and, to a lesser extent, the Personal/Political versions (Figures 3.A and 3.B). Here, the probability of choosing the risk-seeking program increases by around .3 for low-dominance subject as we move from the gain frame to the loss frame, whereas the framing effect dampens markedly for high-dominance subjects. Turning to the political version (Figure 3.C), we see an almost exact mirror image: Framing strongly sways high-dominance subjects—a move from the gain frame to the loss frame strengthens the preference for the risk-seeking program by approximately .20—whereas low-dominance individuals are left largely untouched by the frames.

**Discussion and Conclusion**

A number of literatures converge on the finding that one of the most powerful ways political elites can garner support for risky policies is by utilizing loss frames, emphasizing what society will lose if their preferred policies are not adopted. This perspective has gained traction by recent uncertain political outcomes such as the election of Donald Trump as president of United States or the British vote to leave the EU, both of which happened on the background of campaigns focusing on threat and loss. When providing in-depth psychological explanations of such political risk-acceptance, researchers have primarily relied on Foraging Theory and the idea that humans have evolved a strong distaste for losses that affect their personal welfare (e.g., Arceneaux, 2012; Camerer, 2003; McDermott et al., 2008).

In this manuscript, we have applied and extended Foraging Theory to gain significant traction on an understudied problem in political communication research: Who is most susceptible to losses? We have argued that we cannot answer this question unless we consider the *context* of the losses involved. Utilizing large-scale survey experiments, we
demonstrate that when citizens face personal losses, high-need individuals (who have much to lose) are more likely to take risks that can help them avoid the loss. This is consistent with the logic of Foraging Theory. Yet, when communication emphasizes the losses of others – as is so often the case in politics – high-need individuals are no longer susceptible to loss-framed communications. Instead, in the face of political losses to others, low-need individuals seek to safeguard against losses via support for risky policies.

More specifically, we examined two psychological explanations for risk-acceptance in the face of political losses to others: (1) that high-need individuals feel greater empathy towards others than low-need individuals, or (2) that low-need individuals are more motivated than high-need to individuals to keep together a social group that secures their standing. The results were in line with the second explanation. This implies that we cannot directly apply Foraging Theory to political contexts that involve the welfare of others. At the same time, we do not take this to imply that political decisions are free from biological or evolutionary considerations (Petersen, 2015). Rather, the present findings can be viewed as an expression of strong (and, most likely, evolved) intuitions about how precarious high-ranking positions within groups always have been and how much central positions depend on the existence of a supportive group (Boehm, 2000). In this way, we might view the loss aversion of the powerful in political contexts as a reflection of a social foraging logic where they seek to secure not their physical but social survival.

As in any research endeavor, a number of features in the present empirical design can be strengthened in future research. First, in terms of external validity, the findings are underscored by the use of well-powered samples. Moreover, the data was collected via MTurk, and while MTurkers are socially diverse, they are not representative of the US population. Replicating the present findings in representative surveys and, due to the psychological nature of the argument, across different country populations will add considerably to the external
validity of our findings. Second, in terms of internal validity, the interpretation of the effects of particularly Test 3 would be facilitated by the use of experimental manipulation. Here, subjective feelings of dominance were observed rather than assigned. It is plausible that the random assignment of dominance will add an even clearer contrast to the effect of feelings of empathy, and this will be an important step for future research. Finally, in terms of measurement validity, it should be noted that the political conditions of the experiments emphasized threats to the participants’ “local area” rather than, for example, the nation state as such. This wording might have increase the effects of the utilized dominance measure in these conditions as individuals with a more central social position might be more affected by threats to the local area compared to more abstract threats. At the same time, it is relevant to note that similar effects might be obtained by appealing to social identities such as racial or ethnic identities. For example, in the United States, there seems to be a growing sense of linked fate, even among whites (Schildkraut, 2017). Returning to the current events mentioned in the Introduction, such group-based dynamics might help explain how the Trump campaign’s appeal to loss aversion garnered support for a seemingly risky choice among whites concerned by the group’s social standing. Future research show investigate such group appeals in more detail.

These points notwithstanding, the findings expand current knowledge on the boundary conditions of framing by spelling out under what conditions and, not least, for whom, framing works. The literature identifies this as a key issue that we know surprisingly little about (Druckman & McDermott, 2008; Kam & Simas, 2010). In this regard, the findings here underscore the importance of considering both psychological and contextual factors. As we have demonstrated in this manuscript, psychological models can greatly illuminate questions about the structure of political choices. However, when we move from the personal situations emphasized in many psychological models to the impersonal situations of politics, the factors emphasized in psychological models are often conditioned by additional contextual factors.
Here, we have focused on the impersonal nature of the situation itself as a moderating factor, but other important contextual factors include the nature of the larger communication environment (are there competing frames?), the sources of communication (is it an ingroup source?) and the likelihood that individual citizens receive these communications (what is the level of political attention?). Political choice thus emerges from the interaction of psychological and contextual factors, and political psychology, the core field studying the nature of these choices, needs to consider both.
REFERENCES


Figure 1: Framing effects. Probability for choosing risk-seeking policy program conditional on frame version.
Figure 2 Effect of framing on probability for choosing risk seeking program, conditional on individual need level.

Note. Line represents the average marginal change in probability of support for risk-seeking policy program in moving from the gain frame to the loss frame across levels of need, with 95% confidence intervals. Based on estimates from Table 1.
Figure 3 Effect of framing on probability for choosing risk-seeking program, conditional on dominance. Asian Disease Problem and Economic Recession Problem collapsed.

Note. Line represents the average marginal change in probability of support for risk-seeking policy programs in moving from the gain frame to the loss frame across levels of dominance, with 95% confidence intervals. Based on estimates from Table 2.
Table 1: Determinants of risk seeking preferences. Economic Need & Health Need

<table>
<thead>
<tr>
<th></th>
<th>Disease Problem</th>
<th>Economic Recession Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame (1 = Loss)</td>
<td>1.210** (0.459)</td>
<td>1.763*** (0.483)</td>
</tr>
<tr>
<td>Personal/Political Version</td>
<td>0.502 (0.451)</td>
<td>0.908 (0.482)</td>
</tr>
<tr>
<td>Political Version</td>
<td>0.900 (0.467)</td>
<td>1.499** (0.482)</td>
</tr>
<tr>
<td>Frame X Personal/Political</td>
<td>0.634 (0.628)</td>
<td>-0.228 (0.646)</td>
</tr>
<tr>
<td>Frame X Political</td>
<td>-0.910 (0.634)</td>
<td>-1.783** (0.647)</td>
</tr>
</tbody>
</table>

**Health Need Interactions**

|                                |                |                           |
|                                | Health Need (0-1) | -0.229 (0.449)           |
|                                | Frame X Health Need | 0.004 (0.592)           |
|                                | Personal/Political X Health Need | -0.129 (0.602)          |
|                                | Political x Health Need | 0.097 (0.583)           |
|                                | Frame x Personal/Political x Health Need | 0.452 (0.811)          |
|                                | Frame x Pol x Health Need | 0.708 (0.799)           |

**Economic Need Interactions**

|                                |                |                           |
|                                | Economic Need (0-1) | 0.961* (0.464)           |
|                                | Frame x Economic Need | -1.514** (0.595)        |
|                                | Per/Pol x Economic Need | -0.024 (0.601)          |
|                                | Pol x Economic Need | -1.538* (0.610)         |
|                                | Frame x Personal/Political x Economic Need | -0.521 (0.809)          |
|                                | Frame x Political x Economic Need | 1.830* (0.811)          |
|                                | Constant | -1.331** (0.460)        |
|                                | Controls? | Yes                       |
|                                | N            | Yes                       |

Table entry is the logistic regression coefficient with standard error in parenthesis. Dependent variable is Preference for risk seeking option (0 = risk averse option; 1 = risk seeking option). * p < 0.05, ** p < 0.01, *** p < 0.001. Controls: gender, age, education, Left-Right self-placement Big Five Personality Traits.
Table 2: Determinants of risk seeking preferences. Dominance & Empathy

<table>
<thead>
<tr>
<th></th>
<th>Disease Problem</th>
<th>Economic Recession Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame (1 = Loss)</td>
<td>1.384 (0.725)</td>
<td>1.710° (0.816)</td>
</tr>
<tr>
<td>Personal/Political Version</td>
<td>1.819** (0.685)</td>
<td>1.218 (0.809)</td>
</tr>
<tr>
<td>Political Version</td>
<td>1.059 (0.706)</td>
<td>2.000° (0.791)</td>
</tr>
<tr>
<td>Frame x Personal/Political</td>
<td>0.023 (0.991)</td>
<td>-0.424 (1.059)</td>
</tr>
<tr>
<td>Frame x Political</td>
<td>-1.097 (0.992)</td>
<td>-1.407 (1.047)</td>
</tr>
</tbody>
</table>

**Dominance Interactions**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Dominance (0-1)</td>
<td>0.439 (0.540)</td>
<td>1.029 (0.686)</td>
</tr>
<tr>
<td>Frame x Dominance</td>
<td>-1.114 (0.725)</td>
<td>-1.220 (0.838)</td>
</tr>
<tr>
<td>Personal/Political x Dominance</td>
<td>-0.312 (0.733)</td>
<td>-0.678 (0.839)</td>
</tr>
<tr>
<td>Political x Dominance</td>
<td>-1.078 (0.748)</td>
<td>-1.501 (0.840)</td>
</tr>
<tr>
<td>Frame x Personal/Political x Dominance</td>
<td>0.275 (1.007)</td>
<td>0.803 (1.072)</td>
</tr>
<tr>
<td>Frame x Political x Dominance</td>
<td>2.232° (1.018)</td>
<td>1.660 (1.086)</td>
</tr>
</tbody>
</table>

**Empathy Interactions**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Empathy (0-1)</td>
<td>1.645 (0.855)</td>
<td>0.539 (0.911)</td>
</tr>
<tr>
<td>Frame x Empathy</td>
<td>-0.293 (1.212)</td>
<td>-0.008 (1.242)</td>
</tr>
<tr>
<td>Personal/Political x Empathy</td>
<td>-2.838° (1.178)</td>
<td>0.054 (1.234)</td>
</tr>
<tr>
<td>Political x Empathy</td>
<td>-0.562 (1.132)</td>
<td>-0.706 (1.170)</td>
</tr>
<tr>
<td>Frame x Personal/Political x Empathy</td>
<td>0.437 (1.668)</td>
<td>-0.681 (1.693)</td>
</tr>
<tr>
<td>Frame x Political x Empathy</td>
<td>0.080 (1.632)</td>
<td>-0.026 (1.637)</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.895** (0.649)</td>
<td>-1.878° (0.749)</td>
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</table>

<table>
<thead>
<tr>
<th>Controls?</th>
<th>Yes</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>2003</td>
<td>2003</td>
</tr>
</tbody>
</table>

Table entry is the logistic regression coefficient with standard error below. Dependent variable is Preference for risk seeking option (0 = risk averse option; 1 = risk seeking option). † p < 0.1 * p < 0.05, ** p < 0.01, *** p < 0.001. Controls: gender, age, education, Left-Right self-placement, Big Five Personality Traits.