

How Risk Orientation Shapes Support for Graduate Student Unionization

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Abstract

This study examines the role of risk orientation in shaping individual-level student support for graduate student unionization. Risk orientation is a powerful mover of political attitudes, as it is comprised of both a stable, dispositional dimension as well as a malleable dimension that is responsive to policy frames (i.e., frames of gains versus losses). I hypothesize that (i) risk aversion will increase student support for graduate student unions, and (ii) the dispositional and situational dimension of risk orientation interact to shape attitudes toward unionization. I find limited support for these expectations using an online survey experiment conducted in September 2018. Individuals already prone to (dispositional) risk aversion are highly receptive to policy frames and readily adjust their support for unionization; whereas the dispositionally risk-acceptant are significantly less receptive to policy frames.

Keywords: unionization, public opinion, risk orientation, personality, experiment

How Risk Orientation Shapes Support for Graduate Student Unionization

With multiple waves of movement among graduate students in public and private universities calling for unionization in recent years, graduate student unionization has become one of the most salient and vibrant issues within the U.S. higher education system, as well as national and local politics. As of August 2018, there were 33 student employee unions in the United States, with dozens of more potential organizations scheduled for a vote by the end of 2019 (Coalition of Graduate Employee Unions 2018).¹ While most formations occurred prior to 2000, there has been a recent resurgence of student interest in unionization (Flaherty 2018; 2016).

In the U.S., union strength is strongly linked to higher middle-class incomes and lower income inequality (Lin and Tomaskovic-Devey 2013; Western and Rosenfield 2011). However, fears persist that unions simultaneously protect mediocre workers and discourage personal initiative (Moe 2011). Furthermore, in states with strong party machines, union leaders have, on occasion, been implicated in corruption (Greenhouse 2008; Hutchinson 1957; 1969). Americans are generally supportive of unions, with approval hovering around 60% (Swift 2017); though, since the 1960s, there has been a long-term trend of decreasing faith in the ability of unions to protect workers. Importantly, most Americans also expect unions to become weaker and less influential in the future (Gonyea 2017). Such beliefs are not unfounded; nationwide union membership in the U.S. has been steadily falling for over 50 years (Bui 2015).

Despite public pessimism about the future of unions in the U.S. and concerns over their contemporary efficacy, there is one arena in particular in which unions not

¹ The University of Wisconsin-Madison was the first to see its graduate students unionize in 1969.

only remain strong but also are growing in influence – that is, among America’s student population (Benderly 2018).

The formation of graduate student unions is part of a much larger literature on public support for unionization. Traditionally, support for unions in the U.S. is largely seen as a function of party ID and ideology, with Democrats and liberals tending to support unions and Republicans and conservatives tending to oppose them (Kochan 1979; Swift 2017). Recently, however, scholars have begun to explore how dimensions of an individual’s personality can shape their policy attitudes, independent of ideology or partisanship (Chen and Palmer 2018; Ehrlich and Maestas 2010; Grable 2000; Kam and Simas 2010). This new approach is important because, unlike partisanship or ideology, there are dimensions of personality that are malleable by the social and political environment (Ehrlich and Maestas 2010; Milita, Bunch, and Yegenah 2018). Thus, a key component to understanding public attitudes toward policy is understanding how factors in the environment interact with personality to shape beliefs.

One of the most important dimensions of personality that has been found to strongly influence policy attitudes is risk orientation. Risk orientation refers to how comfortable an individual is taking risks and can range from highly risk-acceptant to highly risk-averse (Maestas and Pollock 2010). Perhaps the most powerful aspect of risk orientation is that it has both a stable, dispositional dimension as well as a dynamic, malleable dimension that is responsive to whether an issue is framed in gains versus losses (Quattrone and Tversky 1988; see also Meertens and Lion 2008).

I argue that an individual’s risk orientation strongly shapes their support for unionization. More importantly, I believe that an individual’s risk orientation may interact with the way in which the question of unionization is framed; namely, whether

graduate student unionization is framed in terms of potential gains or losses. Risk aversion is associated with a preference for minimizing uncertainty, while risk-acceptant individuals tend to tolerate risk and uncertainty relatively well (Ehrlich and Maestas 2010; Milita, Bunch, and Yegenah 2018). The labors of unions often reduce worker uncertainty, surrounding job security, wages, or discrimination. Thus, risk aversion should be strongly related to support for unionization, while risk acceptance should be related to reduced support.

I test these expectations using a survey experiment conducted online during September 2018 at Illinois State University, a public university that was preparing for a formal vote on graduate student unionization in October 2018 (several weeks after the survey was conducted). A total of 621 individuals completed the study. I find strong evidence that individuals already prone to (dispositional) risk aversion are highly receptive to gains frames and readily increase their support for unionization.

Theoretical Background and Hypotheses

American Support for Unionization

Since the first scientific polls on attitudes toward unions began in the late 1930s, public support peaked in the mid-1950s with approximately 75% of Americans saying that they approved of labor unions. Most academic attention paid to American support for unionization occurred between 1960 and 1980, when public support for unions began to deteriorate (Farber and Saks 1980; see also Fiorito and Greer 1982; Schriesheim 1978). This eroding support for unions has largely been attributed to the rapid decline in productivity and real wage growth combined with the shifting of major industries to the “sunbelt,” whereby the public began to view unions as a liability to their

employment, curiously at perhaps the time when unions were needed the most (Fiorito and Greer 1982).

Today, only about one in eight Americans belong to a union (Saad 2015). Support for unionization made a modest recovery during the economic boom of the 1990s and early 2000s. However, during the Great Recession that began in 2007, Americans' support underwent a sharp decline, reaching an all-time low in 2009 (with only about 48% of Americans expressing approval of unions; Saad 2015). Even though support has gradually recovered over time, closely in tandem with the recovery of the U.S. economy, a majority (53%) of Americans continue to believe that the future power of unions will weaken (Saad 2015).

To date, the dominant explanation for union support is closely linked to individual ideology and party affiliation (Masters and Zardkoohi 1988; Swift 2017). In 2018, 60% of individuals that identified as Democrat wanted to see unions gain more political power, while only 36% of Independents and 22% of Republicans felt the same way (Saad 2018). Similarly, 80% of Democrats approved of labor unions, while only 45% of Republicans do.² For those identifying as liberals, support for unions is often closely linked to identity politics (Kochan 1979).

Support for industry unionization is also viewed as a function of one's economic satisfaction or security (Schriesheim 1978). There are several key conflicting findings in past works. On the surface, it appears that hard economic times (e.g., the Great Recession of the late 2000s) lead people to disapprove of unions, fearing that unions chase away businesses and jobs (Saad 2015). Curiously, scholars have shown that even though most Americans believe that unions are generally effective in bringing about

² Gallup reports that 62% of Independents support unions (Saad 2018).

better working conditions, they are reluctant to express support for unionizing themselves (Deshpande and Fiorito 1989). Yet, in an early individual-level study on support for unionization, Farber and Saks (1980) find that:

...the perceived advantage of unionization is inversely related to the individual's position in the intrafirm earnings distribution. Second, explicitly measured perceptions of the impact of unionization on the nonwage aspects of the job are important determinants of the vote. Third, concern for the impact of unionization on job security is an important aspect of the unionization decision. Finally, it was found that after controlling for the effects of unionization on various aspects of the employment relationship, blacks are more likely and older workers are less likely to vote for unionization (p. 349).

Only recently has research begun to examine psychological factors that shape attitudes towards unionization in depth. For instance, Schmidt (1993) finds that media coverage of union activities strongly influences the extent to which people express support for unions; namely, Schmidt finds that when unions obtain media coverage, it is typically reported on the occurrence or frequency of strikes, which by and large result in the development of negative sentiment toward unions for those lack immediate group attachment to unions (i.e., membership in a union themselves or membership of a family member or friend).

In this project, I argue that perhaps some of these conflicting findings of the conditions under which people express support for unionization may be at least partly attributable to the relative lack of coverage over how individual-level dimensions of personality interact with policy frames to shape support for unions. That is, perhaps there is more to understanding attitudes toward unions than simply examining objective economic indicators or one's partisanship/ideology.

Personality and Public Opinions

In recent decades, personality has increasingly become relevant to public opinion (Mondak and Hibbing 2016; Schoen 2007). The influence of personality in shaping public opinion is widely recognized across subfields, ranging from domestic politics to foreign policy. For instance, studies have suggested that two of the Big Five personality traits, openness to experience and conscientiousness, are stable predictors of authoritarian tendencies (Chen and Palmer 2018). Similarly, personality has also been shown to interact with the political environment to shape participation and civic engagement (Gerber et al. 2010; Mondak et al. 2010).

Risk orientation, which refers to how comfortable an individual is taking risks, is among the personality domains that strongly influence public opinion. In theory, risk orientation is a construct that represents an individual's affective response to risk or uncertainty, independent of the external environment; and individuals can range from extremely risk-averse to extremely risk-acceptant (Maestas and Pollock 2010). Moreover, recent studies have found that risk orientation undercuts an individual's susceptibility to the influence of the external environment, such as framing effects (Kam and Simas 2010).

The psychological origin of risk orientation is extremely complex (Zuckerman 2004). More importantly, a wide range of literature in social and behavioral sciences have established relations between risk orientation and individual level characteristics, such as personality traits, genetic factors, and gender (Gardner and Gould 1989; Sjöberg 1997). Risk acceptance is strongly linked to several Big Five personality traits. In particular, studies have shown that low agreeableness, low openness to experience, and high extraversion are associated with being comfortable taking risks (Miller 2004; see

also Eysenck and Abdel-Khalek 1992). Risk-acceptant individuals tend to score low on neuroticism and conscientiousness (Nicholson et al. 2005; Sjöberg and Wåhlberg 2002).³

Studies have suggested that impulsive sensation seeking is strongly related to risk acceptance and predicts risky behaviors, such as risky sexual activities, dangerous driving, heavy drinking, and social or criminal deviances (Horvath and Zuckerman 1993; Rosenbloom 2003a; 2003b; Zuckerman 2005; Zuckerman and Kuhlman 2000). Furthermore, sensation seeking is strongly related to genetic and physiological factors, such as monoamine oxidase and hormones (Daitzman and Zuckerman 1980; Zuckerman 1996; Zuckerman, Buchsbaum, and Murphy 1980; Zuckerman and Cloninger 1996). Furthermore, gender is also strongly correlated with risk orientation. Women are found to be innately more risk-averse than men, in terms of both risk-taking behaviors (Byrnes, Miller, and Schafer 1999; Charness and Gneezy 2012; McDaniel and Zuckerman 2003; Zuckerman, Ball, and Black 1990) and risk perception (Finucane, Slovic, Mertz, Flynn, and Satterfield 2000; Kung and Chen 2012; Slovic 1997).

In addition to the stable, dispositional dimension of risk orientation, scholars have noted that there is also a malleable dimension that is responsive to how policy information is framed; that is, a dimension in which individuals can be temporarily made to behave in a manner that is more risk-averse or risk-acceptant than their dispositional baseline.

³ Risk acceptance has also been studied extensively by scholars who adopt an alternative model of personality—the Alternative Five; such an alternative model is constructed based on certain psychobiological foundations of individual differences and recognizes impulsive sensation seeking, neuroticism-anxiety, aggression-hostility, sociability-extraversion, and activity as the alternative five traits (Zuckerman et al. 1993).

Traditionally, the situational dimension of risk orientation is investigated independently as a framing effect. The most often cited framing effect is associated with prospect theory, which argues that people estimate expected utility of a policy based on a relative reference point, rather than an absolute outcome (Tversky and Kahneman 1974). As such, when individuals are given a gains frame or a loss frame with logically equivalent outcomes, they tend to behave in a risk-averse manner with respect to the gains frame and risk-acceptant with respect to the losses frame (Tversky and Kahneman 1981; see also Quattrone and Tversky 1984; 1988).

However, it is only recently that researchers have begun to take into account how the dispositional and situational dimensions of risk orientation interact to shape an individual's political attitudes. Ehrlich and Maestas (2010) found that risk orientation moderates the relation between policy framing and political attitudes. In particular, risk-averse individuals are more receptive to loss frames and thus, heavily weight information about potential losses when making decisions; in contrast, risk-acceptant individuals are more receptive to gains frames and thus, give extra weight to information pertaining to likely gains when making policy decisions. These findings are consistent with the affect heuristic model concerning the cognitive judgment of benefits and risks; it argues that information about benefit and risk (e.g., the framing) may increase the global affective evaluation (e.g., risk orientation), which consequently adjusts an individual's inferences about risk and benefit (e.g., public opinions) to reflect the information input (Slovic et al. 2004; see also Finucane et al. 2000).

Risk Orientation and Unionization

Risk-averse individuals prefer certain outcomes over probabilistic ones (Kahneman and Tversky 1979; Quattrone and Tversky 1988). They seek to minimize uncertainty, whether it be uncertainty over job security, wages, or discrimination. In this case, unions work to alleviate perceptions of risk exposure, which effectively reduces employment-oriented uncertainty. Thus, all else being equal, I expect risk aversion to increase support for unionization.

In contrast, risk acceptance is associated with a relatively high tolerance for uncertainty (Ehrlich and Maestas 2010; Milita, Bunch, and Yegenah 2018). Thus, these individuals should be less inclined to support unionization, as they are likely to view unions as unnecessary institutions that reduce their annual salaries via membership dues. Traditionally, risk orientation is thought to be a stable personality trait that is readily measured simply by asking individuals about the extent to which they are comfortable taking risks (Maestas and Pollock 2010).

Risk orientation, however, has a second dimension that is situational and readily manipulated by how received information is framed (Ehrlich and Maestas 2010; Kam and Simas 2010). Individuals are risk-averse with respect to potential gains and risk-acceptant with regard to prospective losses (Kahneman and Tversky 1979). Thus, a risk-averse or risk-acceptant mindset can be situationally induced by policy frames.

Broadly, we know that risk orientation influences the extent to which people are receptive to information regarding potential gains and losses (Ehrlich and Maestas 2010). Risk aversion is associated with high receptivity to information about prospective losses, and risk-acceptant individuals are attuned to potential gains. Lavine, Lodge, and Freitas (2005) argue that “situational forces activate corresponding personality

dispositions...rendering them temporarily salient” (p. 222). Individuals’ preexisting predispositions, such as whether they are risk-averse or risk-acceptant, influence the persuasiveness of one frame relative to another (Ehrlich and Maestas 2010; Sniderman and Theriault 2004).

Moreover, I argue that policy frames can augment or undermine innate dispositional risk orientation. Because a frame shapes how individuals perceive policy questions, when there is a conflict between a frame and an individual’s disposition (e.g., a gains frame with a risk-acceptant individual), I argue that the policy frame may negate the influence of the disposition. In contrast, when a policy frame is congruent with dispositional risk orientation (e.g., a gains frame with a risk-averse individual), the frame should augment the effect of the disposition.

Hypothesis 1: Risk-averse individuals will increase their support for unionization after being presented with a gains frame.

Hypothesis 2: Risk-acceptant individuals will decrease their support for unionization after being presented with a losses frame.

Hypothesis 3: Among risk-averse individuals, receiving a losses-oriented policy frame will make no difference in the level of support for unionization.

Hypothesis 4: Among risk-acceptant individuals, receiving a gains-oriented policy frame will make no difference in the level of support for unionization.

In sum, Table 1 presents my four expectations. The table shows that when dispositional and situational risk orientation align (i.e., are both risk-averse or both risk-acceptant), that the effect of each on support for unionization will be augmented, whereby risk aversion is associated with increased support and risk-acceptant is associated with decreased support. However, when dispositional and situational risk orientation does not align (i.e., a risk-averse individual receives a losses frame, or a risk-

acceptant individual receives a gains frame), their effect on support for unionization may wash out.

Table 1. Expected Effect of Dispositional and Situational Risk Orientation on Support for Unionization

	Gains Frame	Losses Frame
Risk Averse	Receptive to information - Increased Support (H1)	n.s. (H3)
Risk Acceptant	n.s. (H4)	Receptive to information - Reduced Support (H2)

Method

To test my expectations, I use an online survey experiment. The survey was conducted over a two-week period between September and October 2018. Students were drawn from two public universities located in the American Midwest and the South. In total, 621 individuals completed the survey. In exchange for participation, students were offered extra credit in one of their undergraduate or graduate courses. Table 2 presents the descriptive statistics for respondents. The sample is majority women, mostly Democrat, and white, with a relatively high median income.

Table 2. Descriptive Statistics for Survey Respondents

% Women	61.16%
% Democrat/% Republican	49.69% / 26.63 %
% White/% Black/% Hispanic	71.36% / 10.22% /10.84%
Median income	\$80,000 - \$89,999
N	621

Measuring Support for Graduate Student Unionization

The dependent variable, support for graduate student unionization, is measured using a two-step process. First, prior to encountering the treatment, respondents are asked to evaluate the desirability of graduate students at their university forming a

union. Individuals are given a feeling thermometer and asked to rate their attitudes toward the proposal. Responses can range from “0,” indicating that the individual feels very unfavorably toward unionization to “100,” indicating that the respondent feels very favorably toward the idea. Second, immediately after receiving either a gains or loss oriented treatment, individuals are asked to reevaluate the idea of graduate students at their school unionizing using the same 0-100 scale.⁴ I subtract the pre-treatment scores from the post-treatment score to obtain an evaluation differential, which serves as the dependent variable.

Figure 1 shows the flow of the survey experiment. Each respondent is asked to evaluate personal support for unionization at their university (B). Next, participants complete a short battery of questions that capture their dispositional risk orientation and serve as control variables (e.g., gender, party ID, race). After completing the control variable battery, each individual is randomly assignment to one of the four potential treatments (D) – two potential gains treatments and two potential losses treatments. Immediately following the treatment, respondents are asked to re-evaluate their support for unionization at their university (E). To calculate the dependent variable, I subtract (B) from (E), which yields an approval differential. A positive differential indicates that support for unionization has increased and a negative differential indicates that support has decreased. In this way, the study employs aspects of a within-subjects design, whereby each individual’s pre-treatment approval score is their own control (for the post-treatment approval score).

⁴ Notably, there are a number of distractor questions standing between the pre-treatment and post-treatment evaluations. The full survey is available in the Appendix.

Figure 1. Experiment Schedule

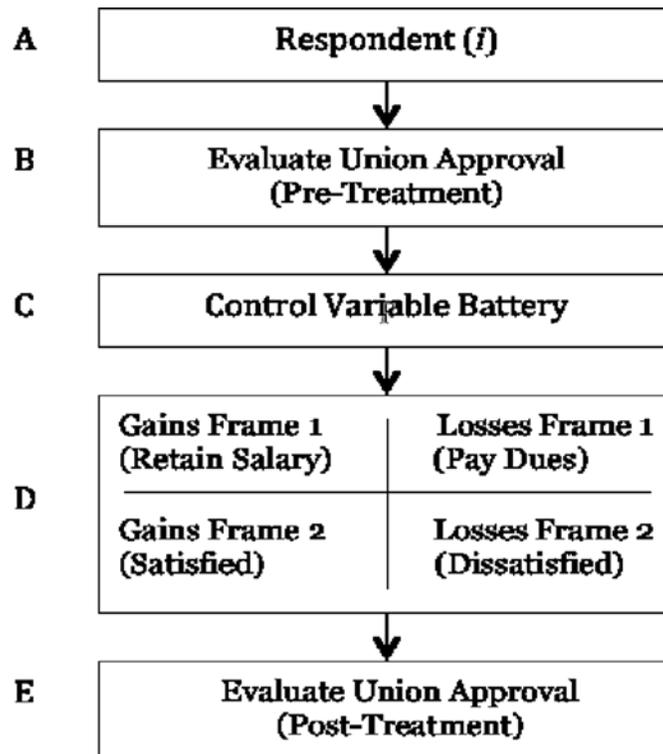
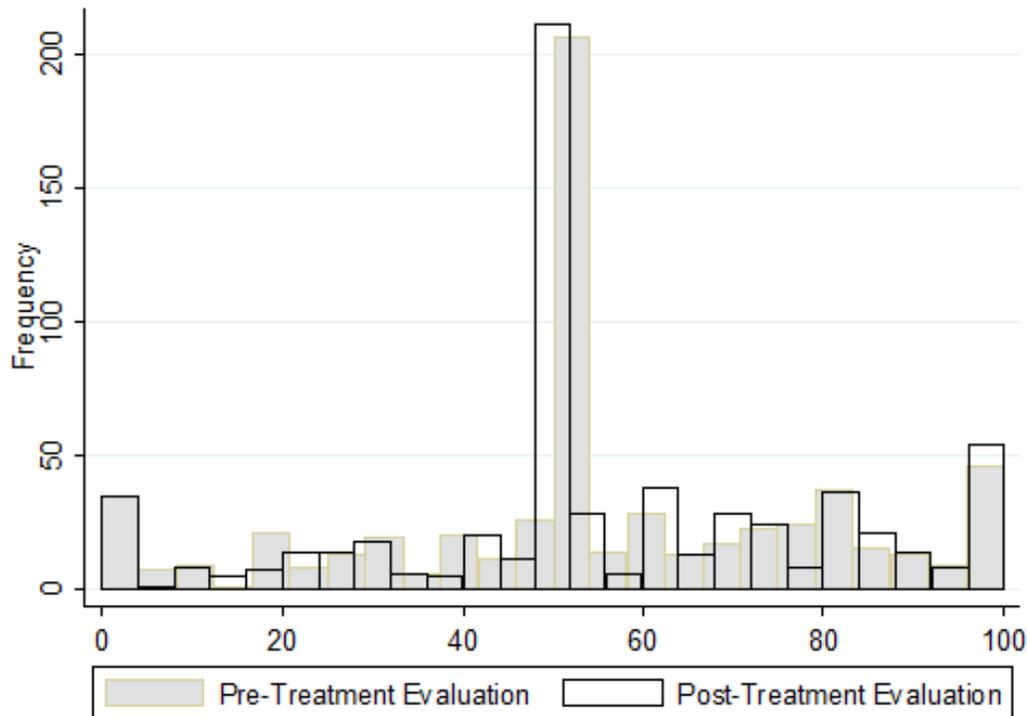


Figure 2 shows the pre and post-treatment evaluations. On average, evaluations were relatively stable; for about 45% of respondents, feelings toward graduate student unionization were unchanged. However, for most individuals in the study, we do see some responsiveness to the treatments.

Figure 2. Pre and Post Treatment Evaluations of Unionization



Measuring the Independent Variables

I operationalize the two dimensions of risk orientation. To measure the stable, dispositional dimension, I ask individuals to rate how comfortable they are taking risks in everyday life using a seven-point single-item question developed by Maestas and Pollock (2010). This question is presented to respondents at the beginning of the survey, prior to any treatments. Notably, I opt to use a single-item measure of dispositional risk orientation rather than a traditional multiple-item measure. Recent works have validated the use of single-item measures for risk orientation in response to space constraints in online surveys as well as a lack of generality in specific multi-item measures (Maestas and Pollock 2010). Furthermore, typical multi-item measures tend to capture behavioral rather than affective dimensions of risk orientation (Maestas, Bell,

and Pollock 2013); and it is the affective response to uncertainty that is key to this study's theoretical expectations.

To capture the malleable, situational dimension of risk orientation, I construct a series of four short vignettes. Each individual is randomly assigned one of the four treatments. Table 3 presents the four possible frames.

Table 3. Experimental Risk Orientation Treatments

Gains Frame	Losses Frame
Recently, there have been calls among graduate students at <Student's University> to unionize. Union members <retain between 94%-98% of their salary> after paying membership dues and receive potential union benefits and protections.	Recently, there have been calls among graduate students at <Student's University> to unionize. Union members <spend between 2%-6% of their salary> in membership dues in exchange for potential union benefits and protections.
Recently, there have been calls among graduate students at <Student's University> to unionize. However, studies have suggested that on average, about <80% of union members are satisfied> with outcomes associated with unionization.	Recently, there have been calls among graduate students at <Student's University> to unionize. However, studies have suggested that on average, about <20% of union members are dissatisfied> with outcomes associated with unionization.

I expect that individuals will orient themselves toward risk aversion when presented with a gains frame and toward risk acceptance when presented with a loss frame (Kam and Simas 2010; Kahneman and Tversky 1979). Each gains/losses frame is designed to be nearly identical save for a key piece of information that frames the benefits and costs of unions in terms of a potential gain or a potential loss. Because I hypothesize a conditional relationship between dispositional risk orientation and the gain or loss frame each individual receives, I include the interactive product as well as the two constituent terms. Table 3 presents the four possible experimental treatments.

Control Variables

I include four primary control variables in several of the models. First, I include an individual's party identification. I create two binary variables to denote whether each individual is a Democrat or Republican (relative to being an independent or third party member). In general, Democrats tend to view unions more favorably than Republicans (Dark 1999).⁵ I also hold a respondent's race constant. I create three dummy variables denoting whether an individual says that they are white, Black, or Hispanic, relative to all other possible categories. Traditionally, whites have benefited from well-paying industrial and manufacturing jobs that belong to organized labor, whereas Black individuals have been less likely to support unionization (Farber and Saks 1980; Kochan 1979). Thus, I expect that they may feel warmer toward the idea of graduate student unionization. I also control for gender, as women have been found to be more supportive of unions and are, on average, more risk-averse than men (Charness and Gneezy 2012; McDaniel and Zuckerman 2003). And finally, I control for an individual's family income. Wealthier individuals may not typically appreciate the protections that unions purportedly provide (Western and Rosenfield 2011). I measure family income using a 12-point ordinal scale that moves in increments of \$10,000, ranging from a minimum score of "1," denoting a family income of less than \$10,000 to "12," indicating an income of more than \$150,000.

I include control variables for two reasons. First, while I am able to randomly assign situational risk orientation, I cannot and do not randomly assign dispositional risk orientation. Dispositional risk orientation is measured using a single-item survey question. And second, there are several key traits that have been found to influence both

⁵ In this data sample, Democrats are also significantly more likely to be risk averse than are Republicans.

risk orientation and support for unionization (e.g., gender), which is a requisite condition for including these factors as control variables.

Results

First, I examine the efficacy of the experimental treatments using a series of difference of means tests. Next, I use an ordinary least squares (OLS) regression to test Hypotheses 1-4, where I argue that dispositional risk orientation interacts with the type of frame (gains versus losses) each respondent receives. While exploring this relationship, I control for partisanship, gender, and family income.

Table 4 presents the results from three difference of means tests, intended to evaluate the effectiveness of the experimental gains versus losses treatment and to assess the initial influence of risk orientation on support for unionization. When we compare the change in union support for the 306 given a gains frame to the 315 people that were given a losses frame, we see that those receiving the losses frame are significantly less supportive of unionization. Further, the difference of means (-4.462) is statistically significant, indicating that the experimental policy frames did lead some individuals to change their attitudes toward unions. We see similar results when we examine the two types of gains/losses frames separately (i.e., salary lost/retained versus percent satisfied/dissatisfied with results of unionization).

Table 4. Difference of Means Test for Experimental Treatments

Gains Frame (All)	Mean (Δ Eval)	95% CI	N
Yes	.889	(-.493, 2.271)	306
No	-3.473*	(-4.873, -2.073)	315
Difference	-4.462*	(-6.326, -2.398)	621
<hr/>			
Gains Frame (Salary)			
Yes	.113	(-2.073, 2.300)	159
No	-4.277*	(-6.533, -2.022)	155
Difference	-4.390*	(-7.519, -1.262)	314
<hr/>			
Gains Frame (Satisfied)			
Yes	1.728*	(.073, .630)	147
No	-2.694*	(-4.390, -.998)	160
Difference	-4.422*	(-1.783, -2.054)	307

* $p < .05$ (one-tailed test)

On average, receiving a gains frame is associated with increased support for graduate student unionization. And receiving a losses frame is linked to decreased support. These findings are broadly supportive of my key theoretical expectations. However, the four hypotheses specify that the effect of the policy frame is conditional on an individual's preexisting risk orientation. To test these hypotheses, I use an OLS regression and interact dispositional risk orientation with the policy frame (i.e., whether the frame was gains or losses oriented). The results are presented in **Table 5**.

Table 5. The Effect of Risk Orientation on Attitudes Toward Unionization

DV: Change in Support for Unionization	(1)	(2)
Gains Frame	2.019 (1.987)	2.117 (2.010)
Dispositional Risk Aversion	-.044 (.496)	-.259 (.504)
Gains Frame*Dispositional Risk Aversion	1.033* (.727)	1.041* (.722)
Female	-	1.456* (1.212)
Democrat	-	1.245 (1.318)
Republican	-	.699 (1.425)
White	-	-4.321* (3.088)
Black	-	-4.846* (3.087)
Hispanic	-	-6.145** (3.499)
Family Income	-	.074 (.188)
Constant	-3.371** (1.386)	-.853 (3.513)
N	621	619
R-squared	.035	.048
F Statistic	7.740*	2.950*

Note: Cell entries are OLS coefficients with robust standard errors in parentheses.

** denotes $p < .05$ (one tailed test), * denotes $p < .10$ (one tailed test)

Across both models in **Table 5**, the product term, which posits an interaction between dispositional risk orientation and the policy frame, is statistically significant. We also see that women are more likely to support unionization. And individuals that are white, Black or Hispanic are less likely to express support relative to the remaining categories, which includes individuals identifying as Asian, more than one race, and those that did not disclose their race.

To evaluate my four hypotheses, I simulate four quantities of interest: high risk aversion with a gains frame (H1), high risk acceptance with a losses frame (H2), high risk aversion with a losses frame (H3), and high risk acceptance with a gains frame (H4). Table 6 presents the expected values of the dependent variable (change in support for unionization) in each of these four conditions.

Table 6. Risk Orientation, Policy Frames, and Change in Unionization Support

DV: Δ Unionization Support		
	Gains Frame	Losses Frame
Highly Risk Averse	4.073* (.012, 8.140)	-4.410* (-8.340, -.405)
Highly Risk Acceptant	-.911 (-3.638, 1.808)	-2.973 (-5.708, .029)

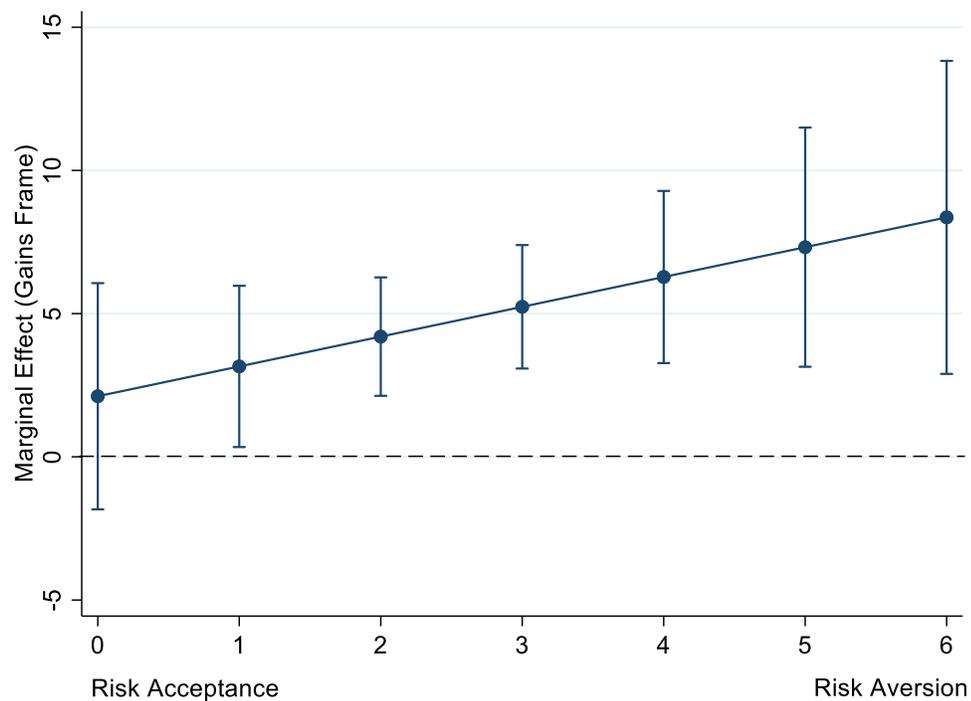
Note: Cell entries are expected values with 95% CI in parentheses. Expected values represent the change in support for unionization. Positive values indicate opinion is becoming more positive, while negative values indicate opinion is becoming less supportive.

Broadly, there is support for two of the four hypotheses. Hypothesis 1 predicted that risk-averse individuals given a gains frame would become more supportive of unionization. Individuals in this category increase their support for unionization by 4.073, which is consistent with H1. Thus, there is initial evidence that when policy frames are consistent with individuals' dispositional risk orientation. There is only limited support for Hypothesis 2. While the expected value for risk-acceptant individuals given a losses frame is correctly signed (negative), it is not statistically significant at the .05 level. Similarly, Hypothesis 3 predicted that when risk-averse individuals were given a frame that was inconsistent with their disposition, that the effect of the disposition and the frame would largely cancel each other out. However, risk-averse individuals given a losses frame reduced their support for unionization by 4.410.

Finally, Hypothesis 3 also posited a null effect, whereby risk-acceptant individuals given a gains frame should not significantly change their support for unionization. H3 is supported by the expected value of $-.911$, which is statistically insignificant. Thus, there is limited evidence that when individuals are given policy frames that are inconsistent with their disposition, the effect of each factor is undermined.

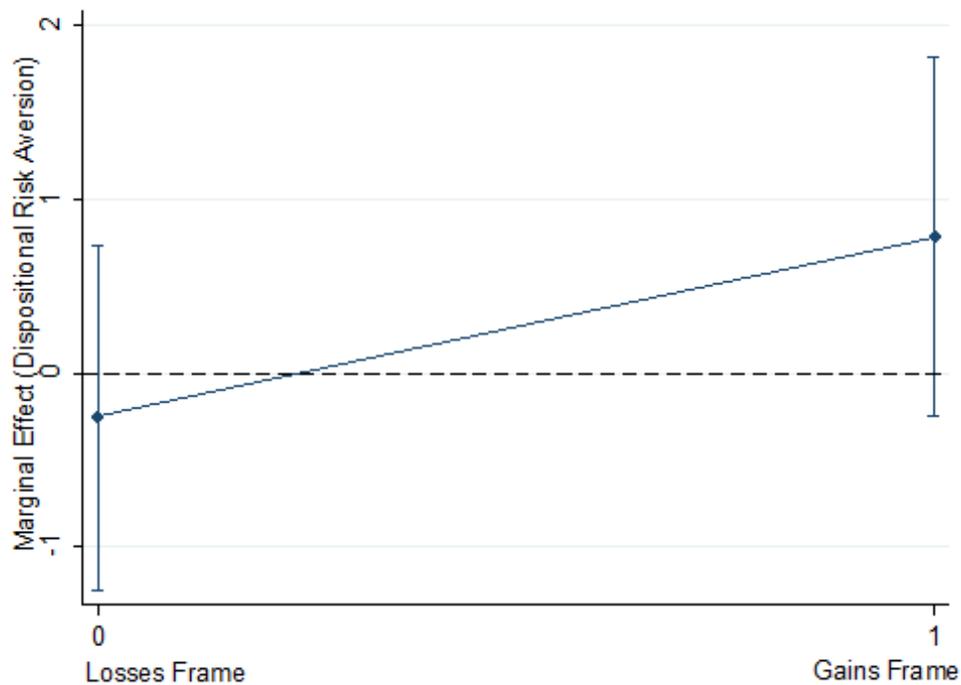
Curiously, it appears that risk-averse individuals are highly receptive to policy frames pertaining to unionization, while risk-acceptant individuals are not. **Figure 3** shows the marginal effects of receiving a gains frame (relative to a losses frame) across each possible value of risk aversion. The efficacy of the policy frame is contingent on the extent to which an individual is risk-averse. For risk-acceptant individuals, it does not appear to matter whether one was given a gains or losses frame.

Figure 3. Marginal Effect of Receiving a Gains Frame on Unionization Support (95% CI)



Similarly, **Figure 4** shows the marginal effect of dispositional risk orientation on support for unionization across all values of situational risk orientation (i.e., gains versus losses frame). When individuals receive a losses frame, a one-unit increase in dispositional risk aversion is not a significant predictor of attitudes toward unionization. Yet, when individuals receive a gains frame, the marginal effect of a one-unit increase in dispositional risk orientation is marginally significant and related to increased unionization support.

Figure 4. Marginal Effect of Dispositional Risk Aversion on Unionization Support (95% CI)



Risk aversion appears to make individuals highly receptive to policy frames concerning the potential gains or probable losses due to unionization. When given a gains-oriented frame, risk-averse individuals become increasingly supportive of unionization, and when given a losses frame they become less supportive. In contrast,

highly risk-acceptant individuals are simply less inclined to support unionization regardless of whether they are given a gains or losses frame.

Table 6 shows the expected values for the dependent variable (change in unionization support) across each value of risk orientation by the type of policy frame given. Positive values denote an increase in unionization support while negative values indicate that support for unionization has decreased. Here we see strong support for Hypothesis 1, which predicts that risk-averse individuals would increase their support for unionization after being presented with gains related information about unions. This is supported across all values of risk aversion (i.e., values of 4-6).⁶ Notably, there is some support in **Figure 3** for Hypothesis 2, which predicts that risk-acceptant individuals will decrease their support for unionization following exposure to a losses frame. While the highest value of risk acceptance (0) is not significantly associated with reduced support following a losses frame, there is evidence for Hypothesis 2 among the lower levels of risk acceptance (values of 1-2).

However, there is no support for Hypothesis 3, which expects that risk-averse individuals will be no more or less likely to support unionization following a losses frame (i.e., a frame that is inconsistent with their disposition). In fact, risk-averse individuals given losses frames are among the most likely to reduce their support for unionization, a finding that runs counter to expectation. Hypothesis 4, however, is strongly supported. In Hypothesis 4, risk-averse individuals are not expected to increase or decrease support for unions when given a gains frame (i.e., a frame that is inconsistent with their disposition). This expectation is supported in **Figure 4**, as the

⁶ Ehrlich and Maestas (2010) use the midpoint of the risk orientation scale to denote risk neutrality. Values of 0-2 denote varying levels of risk acceptance while values of 4-6 indicate increasing risk aversion.

confidence intervals for the expected values all include zero, indicating statistical insignificance.

In short, we see in **Table 6** that dispositionally risk-averse individuals are highly receptive to policy frames, increasing their support for unionization when it is framed as a means to potential gains and reducing their support when it is framed as a probable loss. Previous studies have found that risk-averse individuals are more likely than risk-acceptant individuals to perceive themselves as being exposed to risk (Milita, Bunch, and Yegenah 2018). Thus, it is possible that when a risk-averse individual receives information about unions framed in terms of probable gains, they become more supportive in hopes of improving their employment prospects. In contrast, risk-acceptant individuals may be receptive to frames that are consistent with their disposition but may ignore information that is inconsistent with their disposition.

Discussion

Graduate student unionization is primarily a matter of individual-level perception, judgment, and preference. As such, traditional approaches to the study of unionization, which overwhelmingly emphasize on institutional and structural factors, such as party identification and social stratification (Ahlquist 2017; Beland and Unel 2018; Newman and Kane 2017), do not add much explanatory value to our understanding of individual behavioral outcomes inside the unionization process. To address this gap, more works in political science and public policy in recent decades have started focusing on the role of personality in shaping policy preference (Caprara et al. 2006; Lane 1955; Verhulst et al. 2012; Wang 2016). This study builds on this

literature and elaborates how micro-level dispositional and situational factors affect our policy preferences or political choices.

Broadly, my results suggest that dispositional and situational risk orientation both contribute to variations in policy preference and political choice among individuals. Furthermore, dispositional and situational risk orientation interact with each other to shape decision-making outcomes. Particularly, I find support for the hypotheses suggesting that policy frames (i.e., the situation) can augment or undermine dispositional risk orientation depending upon whether they align with or contradict to individual dispositions.

In short, this study provides empirical evidence for the interaction effect between dispositional and situational risk orientation in shaping individual policy preference and political choice. At the same time, it also demonstrates the necessity for us to understand and further investigate risk orientation—an understudied individual-level construct that was not introduced to the political science literature until very recently—in advancing studies in public opinion and political decision-making. Consistent with recent studies examining the moderation effect of risk orientation to the relationship between framing and policy preference (Ehrlich and Maestas 2010; Milita et al. 2018), this study extends this finding, as well as behavioral political analysis, to the understanding of unionization. Additionally, the single-item measurement of risk orientation, adapted from Maestas and Pollock (2010), has once again shown its value to the assessment of affect.

This study, which utilizes both a within and between-subjects design, does randomly assign the treatment, which is a prerequisite for establishing internal validity. However, it is important to acknowledge the limitations of convenience sampling.

Identical to the “WEIRD” (Western, Educated, Industrialized, Rich, and Democratic) problem exhibited in other major studies in social and political psychology (Henrich, Heine, and Norenzayan 2010). That is, (i) my sample has self-selected into the study and (ii) is not representative of the population of interest (all students potentially about to be affected, directly or indirectly, by a unionization vote). These two sizable data problems limit the generalizability of the findings.

Future studies should consider obtaining a nationally representative sample rather than relying on a convenience sample. For instance, online surveys such as Amazon’s mTurk can be a cost-effective option, though mTurk samples are still plagued by the problem of self-selection into the survey. Ideally, agencies and collaborative research programs, such as Survey Sampling International (SSI) or Time-Sharing Experiments for the Social Sciences (TESS), can provide a near representative sample. Additionally, it is also beneficial for future research to expand the scope of the study and investigate whether the risk mechanism shaping opinion on graduate student unionization equally applies to other industries such as manufacturing, university faculty, or primary education teaching.

References

- Ahlquist, John S. "Labor unions, political representation, and economic inequality." *Annual Review of Political Science* 20 (2017): 409-432.
- Beland, Louis-Philippe, and Bulent Unel. "Governors' Party Affiliation and Unions." *Industrial Relations: A Journal of Economy and Society* 57, no. 2 (2018): 177-205.
- Benderly, Beryl Lieff. "The push for graduate student unions signals a deep structural shift in academia." *Science*, June 6, 2018, <https://www.sciencemag.org/careers/2018/06/push-graduate-student-unions-signals-deep-structural-shift-academia>.
- Breakwell, Glynis M., and Glynis M. Breakwell. "Risk estimation and sexual behaviour: a longitudinal study of 16-21-year olds." *Journal of Health Psychology* 1, no. 1 (1996): 79-91.
- Bui, Quoc Trung. "Fifty years of shrinking union membership in one map." *National Public Radio*, February 23, 2015, <https://www.npr.org/sections/money/2015/02/23/385843576/50-years-of-shrinking-union-membership-in-one-map>.
- Byrnes, James P., David C. Miller, and William D. Schafer. "Gender differences in risk taking: A meta-analysis." *Psychological Bulletin* 125, no. 3 (1999): 367-383.
- Caprara, Gian Vittorio, Shalom Schwartz, Cristina Capanna, Michele Vecchione, and Claudio Barbaranelli. "Personality and politics: Values, traits, and political choice." *Political Psychology* 27, no. 1 (2006): 1-28.
- Charness, Gary, and Uri Gneezy. "Strong evidence for gender differences in risk taking." *Journal of Economic Behavior & Organization* 83, no. 1 (2012): 50-58.
- Chen, Philip G., and Carl L. Palmer. "The prejudiced personality? Using the Big Five to predict susceptibility to stereotyping behavior." *American Politics Research* 46, no. 2 (2018): 276-307.
- Coalition of Graduate Employee Unions. "A complete list of US and Canadian student employee unions." October 2, 2018, http://www.thecgeu.org/wiki/United_States.
- Daitzman, Reid, and Marvin Zuckerman. "Disinhibitory sensation seeking, personality and gonadal hormones." *Personality and Individual Differences* 1, no. 2 (1980): 103-110.
- Dark, Taylor E. *The unions and the Democrats: An enduring alliance*. Cornell University Press, 2001.

- Deshpande, Satish P., and Jack Fiorito. "Specific and general beliefs in union voting models." *Academy of Management Journal* 32, no. 4 (1989): 883-897.
- Eysenck, Sybil BG, and A. M. Abdel-Khalek. "Cross-cultural comparisons of the I7 Impulsiveness scales for Egyptian and English adults." *European Journal of Psychological Assessment* (1992): 149-153.
- Farber, Henry S., and Daniel H. Saks. "Why workers want unions: The role of relative wages and job characteristics." *Journal of Political Economy* 88, no. 2 (1980): 349-369.
- Finucane, Melissa L., Ali Alhakami, Paul Slovic, and Stephen M. Johnson. "The affect heuristic in judgments of risks and benefits." *Journal of Behavioral Decision Making* 13, no. 1 (2000): 1-17.
- Finucane, Melissa L., Paul Slovic, Chris K. Mertz, James Flynn, and Theresa A. Satterfield. "Gender, race, and perceived risk: The 'white male' effect." *Health, Risk & Society* 2, no. 2 (2000): 159-172.
- Fiorito, Jack, and Charles R. Greer. "Determinants of US unionism: Past research and future needs." *Industrial Relations: A Journal of Economy and Society* 21, no. 1 (1982): 1-32.
- Flaherty, Colleen. "NLRB: Graduate students at private universities may unionize." *Inside Higher Ed*, August 24, 2016, <https://www.insidehighered.com/news/2016/08/24/nlr-b-says-graduate-students-private-universities-may-unionize>.
- . "Realities of Trump-era NLRB." *Inside Higher Ed*, February 15, 2018, <https://www.insidehighered.com/news/2018/02/15/blow-graduate-student-union-movement-private-campuses-three-would-be-unions-withdraw>.
- Gardner, Gerald T., and Leroy C. Gould. "Public Perceptions of the Risks and Benefits of Technology." *Risk Analysis: An International Journal* 9, no. 2 (1989): 225-242.
- Gerber, Alan S., Gregory A. Huber, David Doherty, Conor M. Dowling, Connor Raso, and Shang E. Ha. "Personality traits and participation in political processes." *The Journal of Politics*, 73, no. 3 (2011): 692-706.
- Gonyea, Don. "Labor movement faces challenges amid growing public support for unions." *National Public Radio*, September 4, 2017, <https://www.npr.org/2017/09/04/548142971/labor-movement-faces-challenges-amid-growing-public-support-for-unions>.
- Grable, John E. "Financial risk tolerance and additional factors that affect risk taking in everyday money matters." *Journal of Business and Psychology* 14, no. 4 (2000): 625-630.

- Greenhouse, Steven. "Union is caught up in Illinois bribe case." *The New York Times*, December 11, 2008, <https://www.nytimes.com/2008/12/12/us/politics/12union.html>.
- Henrich, Joseph, Steven J. Heine, and Ara Norenzayan. "The weirdest people in the world?" *Behavioral and Brain Sciences* 33, no. 2-3 (2010): 61-83.
- Horvath, Paula, and Marvin Zuckerman. "Sensation seeking, risk appraisal, and risky behavior." *Personality and Individual Differences* 14, no. 1 (1993): 41-52.
- Hutchinson, John. "Corruption in American trade unions." *The Political Quarterly* 28, no. 3 (1957): 214-235.
- Hutchinson, John. "The anatomy of corruption in trade unions." *Industrial Relations: A Journal of Economy and Society* 8, no. 2 (1969): 135-150.
- Kam, Cindy D., and Elizabeth N. Simas. "Risk orientations and policy frames." *The Journal of Politics* 72, no. 2 (2010): 381-396.
- Kochan, Thomas A. "How American workers view labor unions." *Monthly Labor Review* 102, no. April (1979): 23-31.
- Kung, Yi-Wen, and Sue-Huei Chen. "Perception of earthquake risk in Taiwan: Effects of gender and past earthquake experience." *Risk Analysis: An International Journal* 32, no. 9 (2012): 1535-1546.
- Lane, Robert E. "Political personality and electoral choice." *American Political Science Review* 49, no. 1 (1955): 173-190.
- Lavine, Howard, Milton Lodge, and Kate Freitas. "Threat, authoritarianism, and selective exposure to information." *Political Psychology* 26, no. 2 (2005): 219-244.
- Lin, Ken-Hou, and Donald Tomaskovic-Devey. "Financialization and US income inequality, 1970–2008." *American Journal of Sociology* 118, no. 5 (2013): 1284-1329.
- Maestas, Cherie D., and William M. Pollock. "Measuring generalized risk orientation with a single survey item." *SSRN*, (May 2010), <https://ssrn.com/abstract=1599867>.
- Masters, Marick F., and Asghar Zardkoohi. "Congressional support for unions' positions across diverse legislation." *Journal of Labor Research* 9, no. 2 (1988): 149-165.
- McDaniel, Stephen R., and Marvin Zuckerman. "The relationship of impulsive sensation seeking and gender to interest and participation in gambling activities." *Personality and Individual Differences* 35, no. 6 (2003): 1385-1400.

- Meertens, Ree M., and René Lion. "Measuring an Individual's Tendency to Take Risks: The Risk Propensity Scale." *Journal of Applied Social Psychology* 38, no. 6 (2008): 1506-1520.
- Milita, Kerri, Jaclyn Bunch, & Sara Yeganeh. "It could happen to you: How risk exposure shapes policy attitudes." (working paper, 2018).
- Miller, Joshua D., Donald Lynam, Rick S. Zimmerman, T. K. Logan, Carl Leukefeld, and Richard Clayton. "The utility of the Five Factor Model in understanding risky sexual behavior." *Personality and Individual Differences* 36, no. 7 (2004): 1611-1626.
- Moe, Terry M. *Special Interest: Teachers Unions and America's Public Schools*. Brookings Institution Press, 2011.
- Mondak, Jeffery J., and Matthew V. Hibbing. "Personality and public opinion." In *New Directions in Public Opinion*, ed. Adam J. Berinsky (Routledge, 2015), 187-207.
- Mondak, Jeffery J., Matthew V. Hibbing, Damarys Canache, Mitchell A. Seligson, and Mary R. Anderson. "Personality and civic engagement: An integrative framework for the study of trait effects on political behavior." *American Political Science Review* 104, no. 1 (2010): 85-110.
- Newman, Benjamin J., and John V. Kane. "Economic inequality and public support for organized labor." *Political Research Quarterly* 70, no. 4 (2017): 918-932.
- Nicholson, Nigel, Emma Soane, Mark Fenton-O'Creevy, and Paul Willman. "Personality and domain-specific risk taking." *Journal of Risk Research* 8, no. 2 (2005): 157-176.
- Quattrone, George A., and Amos Tversky. "Causal versus diagnostic contingencies: On self-deception and on the voter's illusion." *Journal of Personality and Social Psychology* 46, no. 2 (1984): 237-248.
- . "Contrasting rational and psychological analyses of political choice." *American Political Science Review* 82, no. 3 (1988): 719-736.
- Rosenbloom, Tova. "Risk evaluation and risky behavior of high and low sensation seekers." *Social Behavior and Personality: An International Journal* 31, no. 4 (2003): 375-386.
- . "Sensation seeking and risk taking in mortality salience." *Personality and Individual Differences* 35, no. 8 (2003): 1809-1819.
- Saad, Lydia. "Americans' support for labor unions continues to recover." *Gallup*, August 17, 2015, <https://news.gallup.com/poll/184622/americans-support-labor-unions-continues-recover.aspx>.

- . "Labor union approval steady at 15 year high." *Gallup*, August 30, 2018, <https://news.gallup.com/poll/241679/labor-union-approval-steady-year-high.aspx>.
- Schmidt, Diane E. "Public opinion and media coverage of labor unions." *Journal of Labor Research* 14, no. 2 (1993): 151-164.
- Schoen, Harald. "Personality traits and foreign policy attitudes in German public opinion." *Journal of Conflict Resolution* 51, no. 3 (2007): 408-430.
- Schriesheim, Chester A. "Job satisfaction, attitudes toward unions, and voting in a union representation election." *Journal of Applied Psychology* 63, no. 5 (1978): 522-548.
- Sjberg, Lennart. "Explaining risk perception: An empirical evaluation of cultural theory." *Risk Decision and Policy* 2, no. 2 (1997): 113-130.
- Sjöberg, Lennart, and Anders af Wåhlberg. "Risk perception and new age beliefs." *Risk Analysis: An International Journal* 22, no. 4 (2002): 751-764.
- Slovic, Paul, Melissa L. Finucane, Ellen Peters, and Donald G. MacGregor. "Risk as analysis and risk as feelings: Some thoughts about affect, reason, risk, and rationality." *Risk Analysis: An International Journal* 24, no. 2 (2004): 311-322.
- Slovic, Paul. "Trust, emotion, sex, politics, and science: Surveying the risk-assessment battlefield." *Risk Analysis: An International Journal* 19, no. 4 (1999): 689-701.
- Sniderman, Paul M., and Sean M. Theriault. "The structure of political argument and the logic of issue framing." In *Studies in Public Opinion: Attitudes, Nonattitudes, Measurement Error, and Change*, edited by W. E. Saris & P. M. Sniderman (Princeton University Press, 2004): 133-165.
- Swift, Art. "Labor union approval best since 2003, at 61%." *Gallup*, August 30, 2017, <https://news.gallup.com/poll/217331/labor-union-approval-best-2003.aspx>
- Tversky, Amos, and Daniel Kahneman. "Judgment under uncertainty: Heuristics and biases." *Science* 185, no. 4157 (1974): 1124-1131.
- . "The framing of decisions and the psychology of choice." *Science* 211, no. 4481 (1981): 453-458.
- Verhulst, Brad, Lindon J. Eaves, and Peter K. Hatemi. "Correlation not causation: The relationship between personality traits and political ideologies." *American Journal of Political Science* 56, no. 1 (2012): 34-51.

- Wang, Ching-Hsing. "Personality traits, political attitudes and vote choice: Evidence from the United States." *Electoral Studies* 44, no. December (2016): 26-34.
- Western, Bruce, and Jake Rosenfeld. "Unions, norms, and the rise in US wage inequality." *American Sociological Review* 76, no. 4 (2011): 513-537.
- Zuckerman, Marvin, and C. Robert Cloninger. "Relationships between Cloninger's, Zuckerman's, and Eysenck's dimensions of personality." *Personality and Individual Differences* 21, no. 2 (1996): 283-285.
- Zuckerman, Marvin, and D. Michael Kuhlman. "Personality and risk-taking: Common biosocial factors." *Journal of Personality* 68, no. 6 (2000): 999-1029.
- Zuckerman, Marvin, D. Michael Kuhlman, Jeffrey Joireman, Paul Teta, and Michael Kraft. "A comparison of three structural models for personality: the big three, the big five, and the alternative five." *Journal of Personality and Social Psychology* 65, no. 4 (1993): 757-768.
- Zuckerman, Marvin, Monte S. Buchsbaum, and Dennis L. Murphy. "Sensation seeking and its biological correlates." *Psychological Bulletin* 88, no. 1 (1980): 187-214.
- Zuckerman, Marvin, Samuel Ball, and James Black. "Influences of sensation seeking, gender, risk appraisal, and situational motivation on smoking." *Addictive Behaviors* 15, no. 3 (1990): 209-220.
- Zuckerman, Marvin. "Faites vos jeux anouveau: Still another look at sensation seeking and pathological gambling." *Personality and Individual Differences* 39, no. 2 (2005): 361-365.
- . "The psychobiological model for impulsive unsocialized sensation seeking: a comparative approach." *Neuropsychobiology* (1996): 125-129.
- . "The shaping of personality: Genes, environments, and chance encounters." *Journal of Personality Assessment* 82, no. 1 (2004): 11-22.

Appendix: Survey Instrument

[student] Are you:

- <1> an undergraduate
- <2> a graduate student

[citizen] Are you a U.S. Citizen?

- <1> Yes
- <2> No

[gender] What is your gender?

- <1> Male
- <2> Female
- <3> Trans
- <4> Other

[age] How old are you?

- <1> 17 or younger
- <2> 18
- <3> 19
- <4> 20
- <5> 21
- <6> 22
- <7> 23
- <8> older than 23

[Programming Note: if <1> selected above, send students to alternative assignment essay question.]

[pid] Generally, do you consider yourself:

- <1> Democrat
- <2> Republican
- <3> Independent
- <4> Libertarian
- <5> Green Party
- <6> Other

[ideal] Which of the following best describes your political views?

- <1> Very Liberal
- <2> Liberal
- <3> Somewhat Liberal
- <4> Moderate
- <5> Somewhat conservative
- <6> Conservative
- <7> Very conservative

[race] Which of the following best describes your race or ethnicity?

- <1> White
- <2> Black
- <3> Hispanic
- <4> Asian
- <5> Other

[risk_disp] In general, people often face risks when making financial, career, or other life decisions. Overall, how comfortable do you feel taking risks?

- <1> Very comfortable
- <2> Comfortable
- <3> Somewhat comfortable
- <4> Neither comfortable nor uncomfortable
- <5> Somewhat uncomfortable
- <6> Uncomfortable
- <7> Very uncomfortable

[income] What is your family's household income?

- * Less than \$10,000 (1)
- * \$10,000 - \$19,999 (2)
- * \$20,000 - \$29,999 (3)
- * \$30,000 - \$39,999 (4)
- * \$40,000 - \$49,999 (5)
- * \$50,000 - \$59,999 (6)
- * \$60,000 - \$69,999 (7)
- * \$70,000 - \$79,999 (8)
- * \$80,000 - \$89,999 (9)
- * \$90,000 - \$99,999 (10)
- * \$100,000 - \$149,999 (11)
- * More than \$150,000 (12)

[union_pt] Generally, do you approve or disapprove of labor unions?

- <1> Approve
- <2> Disapprove
- <3> No opinion

[union2_pt] Would you, personally, like to see labor unions in the United States have:

- <1> More influence
- <2> Same influence
- <3> Less influence
- <4> No opinion

[union3_pre] On a scale of 0-100, with "0" representing strongly disapprove & "100" representing strongly approve, how do you feel about the idea of graduate students at [piped text university] forming a union?

- <0> <100>

[distract1] Do you support the continued protection of National Parks in the U.S.?

<1> Yes

<2> No

<3> No opinion

[infrastructure] Do you support increased spending on American infrastructure improvement?

<1> Yes

<2> No

<3> No opinion

[distract2] Do you support a national holiday for voting on Election Day?

<1> Yes

<2> No

<3> No opinion

[Programming note: treatment condition appears on same page as follow-up post-test union3_post. Participants randomly assigned to gains_frame, losses_frame, or control.]

[gains_frame1] Recently, there have been calls among graduate students at <Piped Text: Student's University> to unionize. Union members retain between 94%-98% of their salary after paying membership dues and receive potential union benefits and protections.

[gains_frame2] Recently, there have been calls among graduate students at <Piped Text: Student's University> to unionize. However, studies have suggested that on average, about 80% of union members are satisfied with outcomes associated with unionization.

[losses_frame1] Recently, there have been calls among graduate students at <Piped Text: Student's University> to unionize. Union members spend between 2%-6% of their salary in membership dues in exchange for potential union benefits and protections.

[losses_frame2] Recently, there have been calls among graduate students at <Piped Text: Student's University> to unionize. However, studies have suggested that on average, about 20% union members are dissatisfied with outcomes associated with unionization.

[union3_post] On a scale of 0-100, with "0" representing strongly disapprove & "100" representing strongly approve, how do you feel about the idea of graduate students at <Piped Text: Student's University> forming a union?

<0> <100>