Primining Risk: The Accessibility of Uncertainty in Public Policy Decision Making

David L. Eckles\(^1\) and Brian F. Schaffner\(^2\)

**Abstract:** Public opinion plays an important role in affecting policy outcomes. Additionally, risk plays an equally important role in decision making (economic and non-economic). Yet, we know little about how individuals incorporate risk when forming attitudes on public policy issues. When asked to give an opinion about a policy proposal, individuals are often not presented with information about the uncertainty involved in that proposal and, therefore, may not consider the risks involved in the decision. In this paper, we consider how priming individuals to consider risk may affect the public policy choices they make. We expect that the effect of priming risk will depend on the nature of the policy proposal as well as the respondent’s political knowledge. We offer two tests of our theories utilizing survey experiments soliciting attitudes toward nuclear energy and military action in Iraq. We find that priming citizens to think about the risks involved in taking military action or building nuclear power plants leads to reduced support for those policies, particularly among less educated respondents. [Key words: risk and decision making; public policy; risk priming]

Decisions are often affected by the risks inherent in the relevant alternatives, because citizens often struggle to deal with uncertainty.\(^3\) How citizens deal with risk is important because they are typically called

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\(^3\)Economists often make a distinction between risk and uncertainty, with risk referring to situations where one can assign probabilities to the likelihood of an occurrence and uncertainty indicating a situation where probabilities cannot be assigned (Knight, 1921; Keynes, 1937). However, these distinctions are often disputed by economists, and for most of the public (which is the subject of our analysis) the terms are synonymous. Therefore, we use the terms risk and uncertainty interchangeably in this paper.
upon to choose among public policy alternatives whose outcomes are uncertain. For example, what are the chances that a particular candidate will actually pursue his/her agenda once in office? What is the likelihood that a particular policy will work once enacted? What is the probability of bearing some cost if a policy is not enacted? Furthermore, when asked to make a choice between two competing policies or candidates, citizens are often not presented with information about the risks involved in either choice and, therefore, may not properly consider the uncertainty involved in the decision.

As an example, which we will examine in greater detail later, in a survey conducted in 2002, respondents were asked whether or not they would favor military action in Iraq. Respondents were given two versions of the question, one of which included no mention of risk and another which primed the respondent to consider the potential casualties. Opposition to military action nearly doubled when respondents were primed to consider the risks.

In this paper, we develop a theory concerning how priming risk affects the public policy choices made by citizens. We expect that when citizens are primed to consider the risks involved in particular policy proposals, their support for those proposals will decline. We expect this effect to be most pronounced among citizens who have thought less about the issue (thus, were less likely to have already considered the risks involved). Using two survey experiments, we find that priming citizens to consider the risks involved in policy proposals does significantly reduce their support for those proposals, particularly among less educated individuals. Because of the weight politicians give to public opinion in evaluating and justifying policy choices, these findings have important consequences. For example, as we will show, on the rare occasion when opinion polls primed citizens to consider the risk of American casualties involved in taking military action against Iraq, support for such action diminished significantly, possibly providing a more complete picture of public opinion on that crucial issue. Additionally, understanding how citizens incorporate risk into their political decision making can help shed some light on the types of policy changes that the public is likely to support and those it is likely to oppose.

**RISK AND HUMAN DECISION MAKING**

Before economists introduced terminology and methods to assess decision making under uncertainty (risky decision making), mathematicians and scientists were perplexed by human behavior in the presence of uncertainty. One of the most famous and confounding paradoxes
regarding risk and human decision making was put forth by Nicolaus Bernoulli—the St. Petersburg paradox. The paradox arises when one questions what an individual would rationally pay to enter into a game where the expected value of the game can be shown to be infinite. Theoretically, individuals should be willing to pay an infinite amount to enter into the game. Bernoulli suggests that few people would be willing to pay more than a few dollars (20 ducats in the original game characterization) to participate in this game. In fact, quickly surveying any group of individuals (including a classroom of economics students) will yield results similar to that of Bernoulli. Whether 2, 5, or 10 dollars, few (if any) will be willing to part with a large sum of money to participate in the game. The “solution” to this paradox lies in the risk averse nature of individuals. Theoretically, risk neutral individuals (and risk seekers) would be willing to give up an infinite amount of wealth to enter into this game. However, risk averters are willing to pay much less than the expected value of the game to enter into it. Recently, Erev, Glozman, and Hertwig (2008) show that the presentation of this paradox will also alter the behavior of individuals. Specifically, presenting the game in a different context can elicit risk seeking behavior, rather than risk averse behavior.

The notion, and measures, of risk aversion were further discussed and solidified by Arrow (1965, 1971) and Pratt (1964). Between von Neumann and Morgenstern (1944) and Arrow and Pratt, the groundwork was laid to examine individual decision making under uncertainty. The rational individual was shown to be affected by considerations such as his wealth, the size of the potential gambles, the framing of the gamble (e.g., loss v. no loss, win v. no win). However, the theory of rational decision making has not always been consistent with observed individual behavior. Many researchers, notably Richard Thaler, Daniel Kahneman, and Amos Tversky, have published papers observing irrational behavior surrounding risky outcomes. That is to say, individuals often make decisions not according to the rigorous mathematical and rational framework set forth by von Neumann and Morgenstern. Kahneman and Tversky specifically note that human emotion and lack of complete understanding eventually short-circuits rational decision making. Such fallibilities explain why we see an individual buy an insurance policy to protect his home in the event of a fire, and also engage in casino gambling. The former behavior is one of a risk averter attempting to remove the risk (at an unfair price) associated with his home burning down while the latter behavior is that of a risk seeker purposely engaging in an unfair gamble.

Ultimately, many psychological reasons explain why individual decision making under uncertainty is different from that predicted by rational models. Bernstein (1996: 272) gives many of these reasons:
We have trouble recognizing how much information is enough and how much is too much. We pay excessive attention to low-probability events accompanied by high drama and overlook events that happen in routine fashion. We treat costs and uncompensated losses differently, even though their impact on wealth is identical. We start out with a purely rational decision about how to manage our risks and then extrapolate from what may be only a run of good luck.

One of the most important tenets of the work of behavioral economists is discussed in Kahneman and Tversky’s (1979) paper on Prospect Theory. They show that the framing of a risky situation is extremely important to the decision that is made. Specifically, whether or not the situation is introduced in the context of a loss or a gain will impact the decision made regarding risky outcomes. This inconsistent behavior has been called a “failure of invariance” by Kahneman and Tversky (Bernstein 1996). Indeed, scholars have repeatedly confirmed that individuals are risk averse when it comes to gains and risk seeking when it comes to losses.

While risk has typically been studied in economic contexts, it can be an equally powerful determinant of behavior in other realms, particularly when individuals lend consideration to it. For example, one study found that priming people to think about risks (and to consider risks differently) significantly affected decisions they made about activities such as holiday travel, buying a car, and gambling (Erb, Bioy, and Hilton, 2002). We expect that risk will also play an instrumental role in determining public opinion on policy proposals, particularly when the public is primed to think about the uncertainty inherent in those proposals. However, the influence of such priming will be mediated by the perceived risks inherent in the policy proposal, a dynamic we elaborate on in the following sections.

**PUBLIC OPINION, POLICY ALTERNATIVES, AND PRIMING RISK**

Public opinion plays an important role in affecting policy outcomes. Several studies have demonstrated that policy change in the United States is largely driven by changes in public opinion (Erikson, Mackuen, and Stimson, 2002; Page and Shapiro, 1983). These findings in the aggregate are mirrored at the individual level as politicians generally appear to be responsive to constituents’ attitudes, particularly when it comes to highly salient issues (Miller and Stokes, 1963; Bartels, 1991).

Despite the seemingly central role that public opinion plays in influencing public policy, political scientists generally view citizens’ attitudes as ill-formed and malleable (Converse, 1964). As Chong and Druckman
(2007) note, “[i]n the public opinion literature, high-quality opinions are usually defined as being stable, consistent, informed, and connected to abstract principles and values. The general conclusion among scholars is that such opinions are rare in the mass public” (p. 103). From a rational choice perspective, it is not surprising to find that most citizens do not invest in acquiring the information necessary to form “high-quality opinions” on public policy issues; after all, information costs are high and the benefits of possessing informed opinions are low for most citizens (Downs, 1957). As a result, most of the American public lacks a working knowledge of political issues (Delli Carpini and Keeter, 1996).

Thus, attitude instability can be explained by an understanding of cognitive processing under conditions of low information. When asked to provide their opinions on an issue, citizens tend to forgo an exhaustive search for information and rely instead on considerations that are most accessible to them at that moment (Tversky and Kahneman, 1981; Kahneman, Slovic and Tversky, 1982; Iyengar, 1991). From this perspective, people may hold different attitudes on the same issue at different points in time because different considerations are more or less accessible to them at that moment, not necessarily because their underlying attitudes have changed (Zaller, 1992).

The accessibility of particular concepts or considerations can be influenced by how frequently or how recently those concepts have been activated in the person's mind (Kuklinski and Hurley, 1994; Lau, 1989; Tourangeau and Rasinski, 1988; Zaller, 1992; Zaller and Feldman 1992). The activation of such considerations by external stimuli essentially defines the process of priming. For example, Valentino (1999) finds that when news coverage presents crime stories with non-white suspects it makes racial attitudes more accessible to respondents relative to when the suspects in these stories are white. Likewise, when issues are featured more prominently during campaigns, citizens are more likely to use those issues to evaluate candidates (Iyengar, 1991; Schaffner, 2005).

Priming may also occur as a result of how political issues are framed. Druckman (2001) distinguishes between equivalency framing—where the same information is presented in different ways—and emphasis framing—where different aspects of an issue are emphasized. Emphasis framing in particular is closely related to priming in that emphasizing particular aspects of an issue makes those aspects more accessible to citizens. As Chong and Druckman note:

When a mass communication places attention on an issue, we expect that issue will receive greater weight via changes in its accessibility and applicability. If this is correct, then framing effects and what
communication scholars have called priming effects share common processes, and the two terms can be used interchangeably (2007: 115).

Emphasis framing is one method interested parties can use to prime particular considerations in the minds of the public.

In this paper, we seek to examine how priming individuals to consider the risks involved in particular policies will influence their attitudes toward those policies.

RISK PERCEPTION AND PUBLIC POLICY

An individual’s perception of risk is a function of not only his or her own orientation to risk, but also the nature of what is being evaluated. Slovic et al. (1979) note that perception of risk is significantly influenced by the characteristics of the hazard that the individual is evaluating. This psychometric paradigm generally classifies hazards along two dimensions—dread and novelty. A hazard with high levels of dread is one that would have catastrophic, sensational, and fatal consequences, and one which the individual feels no sense of control over. As Iyengar notes, the public has a tendency to “overestimate the importance of sensationalized events (such as fires and traffic accidents) as causes of death and to underestimate the importance of ‘quiet’ risks such as heart disease and stroke” (1991: 132).

The second dimension, novelty, refers to how familiar the public is with a particular risk. Risks that are novel include those that accompany new technologies. For example, Slovic et al. (1985) found differences in the public’s perceptions of the risks inherent in relatively new items such as microwave ovens and DNA technology relative to automobiles and handguns. This factor, though important, is generally found to influence perceived risk far less than the “dread” factor.

While Slovic et al. (1985) applied this framework to the study of technologies, a similar delineation is possible with regard to the risks inherent in policy proposals. Table 1 presents such a categorization of policies.

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4 This table is for illustrative purposes only, and is only meant to provide a potential categorization of a few policy issues.
risks involved in cutting taxes are not catastrophic—the consequences are neither fatal nor irreversible.

When they conducted their study, Slovic et al. (1985) found that because of the potential for catastrophic and fatal incidents and its relative novelty, nuclear power had the highest level of dread. Based on the world’s increasingly extensive experience with nuclear power, we classify policies designed to encourage greater use of nuclear energy as possessing high levels of dread but being relatively known (Sjoberg, 2000). With growing concern about energy independence and global warming, there has been an increased interest in nuclear energy in the United States in recent years. Nevertheless, policies designed to encourage the creation of more nuclear power plants may continue to face resistance because of the high levels of dread risk that the public perceives with nuclear energy. Indeed, accidents such as the devastation caused by the meltdown of a Soviet nuclear plant at Chernobyl have illuminated the dreadful consequences that are possible when an accident does occur at a nuclear power plant (Rosa and Dunlap, 1994). We will examine the influence of risk on attitudes toward nuclear energy in one of the two tests we present below.

According to the psychometric paradigm, the public should be most susceptible to risk priming when it comes to public policies that have high dread risks and are relatively novel or unknown. One example of such policies would be the act of going to war against other nations. War is relatively rare and the hazards of war are often catastrophic and fatal; thus, citizens should perceive the risks inherent in going to war as being quite high. Our analysis will also examine how priming risk affected attitudes toward military intervention in Iraq in 2002.

Finally, unlike nuclear energy and war, Social Security privatization is an example of a policy that has a low level of dread risk. If privatization accounts do not work there are financial consequences, but fatalities or

### Table 1. Categorizing Policies Based on Qualitative Characteristics of the Risks

<table>
<thead>
<tr>
<th>Novelty of risk</th>
<th>Low dread</th>
<th>High dread</th>
</tr>
</thead>
<tbody>
<tr>
<td>Known</td>
<td>Low levels of risk aversion. Example: Tax policy.</td>
<td>High levels of risk aversion. Example: Nuclear energy.</td>
</tr>
</tbody>
</table>
catastrophic outcomes are not likely. Nevertheless, the public may perceive Social Security privatization as riskier than adjusting tax rates because the proposal is relatively new and the risks are, therefore, not well known. Indeed, the case of Social Security privatization offers one notable instance where some attention has been paid to the importance of priming citizens to think about the risks of a policy proposal. The issue first gained attention in the U.S. in the 1990s, but became particularly relevant when President George W. Bush was elected president. During his first term, he launched a commission to study individual retirement accounts as a way to reform the Social Security system. This proposal became the first major initiative promoted by Bush during his second term but was defeated, in part because opponents of the reform were able to frame the proposal as being too risky.

With Social Security privatization, both the costs and benefits of the policy seemed relatively uncertain. Opponents of privatization appealed to risk perceptions of the public by promoting privatization as a “risky” alternative. In fact, one Democratic polling firm noted that when debating the privatization proposal, arguments should stress that “The Bush plan undermines retirement security by cutting guaranteed benefits ... risky privatization accounts won't make up the difference.” The effect of priming risk on attitudes toward Social Security privatization was evident in two ways. First, some polling organizations implemented survey questions that primed citizens to think about the risks involved in private accounts, and scholars have demonstrated significant differences in the attitudes of citizens depending on whether respondents were primed to think about risk when asked about the proposal. Cook and Jacobs (2002) conclude that “the public seems to favor some form of partial privatization of Social Security in the abstract, but their support is replaced by ambivalence and then opposition as they are informed of the costs and risks associated with it.”

Barabas (2006) provides a second demonstration of how priming risk reduced support for Social Security privatization. He finds that during periods when the stock market was performing relatively poorly, support for Social Security privatization dropped, while such support was greater when the stock market was performing better. A stock market that was performing poorly primed citizens to think about the risks involved in stock investments and, by extension, drove down support for privatization proposals.

Ultimately, opponents of Social Security privatization were able to defeat the proposal by shaping public opinion on the issue. They did this by priming the public to consider the risks involved in pursuing a policy of privatization. Thus, Social Security privatization provides support for our theory for an issue that was fairly novel, but did not entail high levels
of dread risk. In this paper, we will examine two additional issues where risk priming should be successful—proposals to create more nuclear power plants (low novelty and high levels of dread) and the case of military intervention in Iraq (high novelty and high levels of dread).

**HYPOTHESES**

We hypothesize that priming citizens to think about risk will influence their expressed attitudes toward policy issues, particularly those that entail higher dread and/or less known hazards. While people can access any range of information or considerations when asked to evaluate a particular policy proposal, activating them to consider risk will more significantly affect their attitudes than if they are relying on other factors in their evaluations.

We also hypothesize that less educated individuals will be more susceptible to priming risk than those with more education. Priming and framing effects tend to be more pronounced with citizens who know less about politics and who do not routinely think about political issues (Kinder and Sanders, 1990; Haider-Markel and Joslyn, 2001). This is likely the case because individuals who give more thought to issues tend to be more likely to access consistent considerations when they are asked to evaluate issues (Iyengar, 1991). After all, these citizens are likely to have formulated opinions on the issues previously by weighing various considerations, including, for example, the risks involved in such policies (Chong and Druckman, 2007). Accordingly, we hypothesize that respondents who are more politically informed will be less affected by being primed to consider the risks involved in pursuing a particular policy proposal.

**EXAMINING THE EFFECTS OF PRIMING RISK**

Survey experiments provide a useful way of understanding how priming risk affects policy attitudes. Two survey experiments conducted relatively recently allow us to directly test the effect of priming risk on attitudes toward public policy issues. These surveys study public opinion on nuclear power and military intervention. We examine each of these surveys below.

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5In fact, Chong and Druckman note that once one controls for the strength of an individual's prior attitudes on an issue, more-knowledgeable citizens may actually be more susceptible to framing effects.
Test 1. Nuclear Energy

As noted above, nuclear energy is an issue that involves high levels of dread, though the novelty of the risk is not high. To test for the influence of priming risk on attitudes toward nuclear energy, we analyze a CBS News/New York Times survey conducted in April, 2007. In this survey, each respondent was asked two questions about nuclear energy. Early in the survey, respondents were asked:

“Would you approve or disapprove of building more nuclear power plants to generate electricity?”

In response, 45% said that they would approve of building more power plants while 47% did not approve, a mixed assessment that is similar to other recent polling on the issue.

Later in the same survey, each respondent was asked a related question, but with additional information:

“Some people say using nuclear power to generate electricity is a good idea because uranium fuel is available in North America and nuclear power doesn’t contribute to global warming. Other people say using nuclear power is a bad idea because of the risk of accident and the fact there is still no long-term solution for nuclear waste disposal. What do you think—is using nuclear power to generate electricity mostly a good idea or mostly a bad idea?” [Emphasis added]

This question essentially asked respondents again whether they support nuclear energy, but in this version they were given arguments on both sides of the issue. These arguments are examples of the emphasis framing discussed earlier. Of course, not all frames are equally effective; those that prime more compelling aspects of the issue are more likely to influence opinions. Thus, when an issue is framed competitively (providing arguments on both sides of the issue), the stronger frame will influence opinions more than the weaker frame (Chong and Druckman, 2007).

In this case, the “risk of accident” frame appeared to be more influential, as only 36% of respondents said that they supported nuclear energy in response to this second question, compared to 58% who now opposed it. A difference of proportions test indicated that there was a statistically significant (p < .0001) decrease in support for nuclear power from the first question to the second. After respondents were primed to think about the risks involved, support for nuclear energy declined from the earlier

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The poll of 1,052 adult respondents was conducted via telephone from April 20 to April 24, 2007 and was obtained from CBS (CBS News/New York Times Poll # 2007-04B: Environment).
question by nine percentage points while opposition increased by eleven percentage points. Thus, our first hypothesis seems confirmed: when risk was primed in the minds of respondents (by framing nuclear energy as risky), it reduced support for the proposal.

In addition to understanding how priming risk influences the attitudes of respondents, we are also interested in determining which individuals are most affected by priming risk. As noted above, we hypothesize that respondents who are more politically informed will be less affected by being primed to consider the risks involved in pursuing a particular policy proposal. While this survey offers no direct measure of political knowledge, formal education is highly correlated with political knowledge and is often used as a proxy for this concept (Delli Carpini and Keeter, 1996). Therefore, we divide respondents into five different groups based on their level of formal education: those without a high school degree, those with only a high school degree, those with a high school degree and some college education, those with an undergraduate college degree, and those with post-graduate work or degree. Table 2 examines the change in support for nuclear energy among each of these groups.

While support for nuclear energy declined among all education groups in the survey, the decrease was greatest for the lower education groups. For respondents without a high school degree, support for nuclear energy dropped from 26% in the first question to 22% in the question with the risk frame. However, since this group included only 85 respondents, this reduction was not found to be statistically significant. There was a statistically significant decline in support among those with only a high school degree, from 44% in the first question to 31% in the second version.
For those with some college education and those with a college degree, the decline in support was similar and significant. Support for nuclear power dropped from 47% to 39% among those with some college education and support dropped from 48% to 40% among those with a college degree. Among more-educated respondents, the drop in support was less pronounced and not statistically significant—just a two percentage points decline in support among those with post-graduate education. Thus, as hypothesized, priming individuals to think about the risks involved in building more nuclear power plants reduced support for nuclear energy, especially among those with less education.

Test 2. Military Intervention in Iraq

A second survey experiment comes from a Pew Research poll conducted in August, 2002.\(^7\) The survey is useful for our purposes because it includes a question that queried respondents on whether they would favor military action against Iraq. The question was asked in two separate forms, one with and one without a frame emphasizing the risk of casualties. The question read as follows (with the added frame in italics):

“Would you favor or oppose taking military action in Iraq to end Saddam Hussein’s rule, even if it meant that U.S. forces might suffer thousands of casualties?”

As we note above, we hypothesize that priming citizens to think about risk will influence their expressed attitudes toward policy issues, particularly those that entail higher dread and/or less-known hazards. In this case, those who received the question with the clause about the risk of casualties should be significantly less supportive of the proposed intervention.

When asked this question without being primed about the risk of casualties, 62% of respondents favored military action, 24% opposed it, and 14% were undecided. However, when the question wording included the phrase about the risk of casualties, support for military action dropped to 43%, with 42% opposed and 16% undecided. Thus, priming respondents to consider the risk to American lives inherent in taking military action generated a nineteen percentage points decrease in support for such action while increasing opposition by eighteen percentage points (both differences statistically significant at p < .001).

Considering how military intervention fits into the psychometric-based issue typology we developed above, it is not surprising to find a

\(^7\)The poll of 1,001 respondents was conducted from August 14 to August 25, 2002 and was obtained from the Pew Research Center for the People and the Press (Pew Research Center: Year After 9/11 Poll).
substantial decline in support for military intervention when risk was primed in the minds of respondents. Military conflict is a policy with hazards that are highly catastrophic and fatal (high dread). These hazards may also be not very well known since military conflicts are not routine (though military interventions in Iraq are better known). Therefore, the public’s risk perceptions about military intervention are quite high, and when citizens are primed to think about risks, their support for intervention declines.

But are all individuals equally affected by priming risk? As with the first test, we divide respondents into five different groups based on their level of formal education: those without a high school degree, those with only a high school degree, those with a high school degree and some post–high school education, those with an undergraduate college degree, and those with postgraduate work or degree. Table 3 presents the effect of the risk of casualties prime on attitudes toward military intervention. The findings indicate that priming respondents to consider the risk of casualties involved with military intervention has a substantial influence on the opinions of those without a college degree, but did not have a significant effect on more-educated respondents. For those without a high school degree, support for military action dropped from 73% to 31% when the risk of casualties frame was introduced. Among those with only a high school degree, support for military action declined from 68% to 40% when respondents were primed to think about the risks involved. Similar results are observed among those with some post-high school education. Support among these respondents declined from 65% to 40% when respondents were primed to consider the

### Table 3. Proportion of Respondents Supporting Military Action In Iraq

<table>
<thead>
<tr>
<th>Education level</th>
<th>Support without risk prime</th>
<th>Support with risk prime</th>
<th>P-value&lt;sup&gt;a&lt;/sup&gt;</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than high school</td>
<td>0.7317</td>
<td>0.3143</td>
<td>&lt;0.0001</td>
<td>76</td>
</tr>
<tr>
<td>High school degree</td>
<td>0.6806</td>
<td>0.3960</td>
<td>&lt;0.0001</td>
<td>293</td>
</tr>
<tr>
<td>Some post-high school</td>
<td>0.6486</td>
<td>0.4000</td>
<td>&lt;0.0001</td>
<td>298</td>
</tr>
<tr>
<td>College degree</td>
<td>0.5238</td>
<td>0.5185</td>
<td>0.9380</td>
<td>213</td>
</tr>
<tr>
<td>Post-graduate work or degree</td>
<td>0.4828</td>
<td>0.4576</td>
<td>0.7850</td>
<td>117</td>
</tr>
</tbody>
</table>

<sup>a</sup>The p-value reported here is from two sample test of proportions.
risk. All of these changes in support were statistically significant (p < .0001). Thus, among the less educated respondents, priming risk had sizable effect on attitudes toward military intervention in Iraq.

As we observed in the previous test, the effect of priming seemed to be diminished among respondents with more formal education. Table 3 shows no statistically significant difference among higher educated respondents whether they received the priming condition or not. Thus, as in our analysis of attitudes toward nuclear energy, priming risk had a particularly powerful effect on the attitudes of citizens who were most reliant on considerations that were accessible to them when asked the question—those with less education.

We also examine our hypothesized relationship using a Probit model, allowing us to control for factors that may affect an individual’s view on the Iraqi war. The model we estimate is given below:

\[
\Pr [Approval_i] = \alpha_i + \beta_1Primed_i + \beta_2Female_i + \beta_3Primed_i \cdot Female_i + \\
\beta_4Age_i + \beta_5Primed_i \cdot Age_i + \beta_6Education_i + \beta_7Primed_i \cdot Education_i + \\
\beta_8Ideology_i + \beta_9Primed_i \cdot Ideology_i + \beta_{10}Attention_i + \\
\beta_{11}Primed_i \cdot Attention_i + \varepsilon_i
\] (1)

where Approval is a binary variable equal to 1 if the respondent approved taking military action in Iraq; Primed is a binary variable equal to 1 if the respondent received the question regarding military action in Iraq with the risk primer; Female is a binary variable equal to 1 if the respondent was female; Age is a continuous variable indicating the age of the respondent; Education is a categorical variable representing the highest level of education received\(^8\); Ideology is a categorical variable representing the respondents political ideology\(^9\); and Attention is a binary variable equal to one if the respondent answered that they have put “a great deal” of thought into “whether the US should use military force to remove Saddam Hussein from power in Iraq” (the alternative answers, all coded as zero for the Attention variable, were “some,” “only a little,” and “not at all”). Each of these control variables was interacted with the Primed variable. Our

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\(^8\) Education is equal to 1 if the respondent did not have a high school degree, 2 if the respondent had only a high school degree, 3 if the respondent had some post-high school education, 4 if the respondent had a college degree, and 5 if the respondent had some postgraduate education.

\(^9\) Ideology is a categorical variable taking on an integer between 1 and 5 if the respondents identified themselves as “very conservative,” “conservative,” “moderate,” “liberal,” or “very liberal,” respectively.
hypothesis regarding the priming of individuals predicts that Primed will be negatively related to the probability of supporting the war. Our hypothesis regarding the effects of risk priming on education suggest that when interacted with the Primed variable, the Education variable will be positive. That is, higher education levels lessen the affect of the priming. Other than Primed and Education interacted with Primed, we expect that Ideology will also affect the probability of which individuals support the Iraq war. Specifically, we expect more conservative respondents to support the war (we therefore expect a negative coefficient). We have no a priori expectations regarding the other control variables.

Table 4 reports the summary statistics for the variables in model (1). In generating some of the control variables, some observations were lost, and
we were left with 792 complete observations. Over the entire sample, roughly 62% of respondents supported military action in Iraq. Approximately half of our remaining sample were primed to consider the risk involved with military action, suggesting that we lost approximately the same number of primed and non-primed observations. Females were slightly more represented in our sample, as 52% of the respondents were female. The average age among respondents was 46. The average (and median) respondent had some post–high school education and self-identified as politically moderate. Finally, approximately half of our sample claimed to have put “a great deal” of thought into the use of military force in Iraq.

Table 5 reports the results from model (1). As expected, after controlling for demographic factors, those respondents who were primed to consider the risk regarding an Iraqi war continued to show a significant reduction in approval for such action. The positive and significant coefficient on the interaction term between Primed and Education is also consistent with our hypothesis. That is, the effect of the priming is reduced as the education of the respondent increases.

Table 5. Probit Estimation Results of Model 5

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Predicted sign</th>
<th>Coefficient</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td></td>
<td>2.1644</td>
<td>0.4819***</td>
</tr>
<tr>
<td>Primed</td>
<td>–</td>
<td>–1.8602</td>
<td>0.6149***</td>
</tr>
<tr>
<td>Female</td>
<td>+/–</td>
<td>0.0307</td>
<td>0.1632</td>
</tr>
<tr>
<td>Female*Primed</td>
<td>+/–</td>
<td>–0.2563</td>
<td>0.2150</td>
</tr>
<tr>
<td>Age</td>
<td>+/–</td>
<td>–0.0122</td>
<td>0.0066</td>
</tr>
<tr>
<td>Age*Primed</td>
<td>+/–</td>
<td>0.0041</td>
<td>0.0066</td>
</tr>
<tr>
<td>Education</td>
<td>–</td>
<td>–0.2619</td>
<td>0.0688***</td>
</tr>
<tr>
<td>Education*Primed</td>
<td>+</td>
<td>0.4103</td>
<td>0.0949***</td>
</tr>
<tr>
<td>Ideology</td>
<td>–</td>
<td>–0.2071</td>
<td>0.0905**</td>
</tr>
<tr>
<td>Ideology*Primed</td>
<td>+/–</td>
<td>0.0203</td>
<td>0.1190</td>
</tr>
<tr>
<td>Attention</td>
<td>+</td>
<td>1.0280</td>
<td>0.1644***</td>
</tr>
<tr>
<td>Attention*Primed</td>
<td>–</td>
<td>–0.4003</td>
<td>0.2167*</td>
</tr>
</tbody>
</table>

Wald Chi² = 117.89
Pseudo R² = 0.1692
N = 792

Notes: Dependent variable: Probability respondent supports military action in Iraq. The model is significant at the 1% level. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.
Table 5 also shows a few other significant relationships between our control variables and the approval of an Iraqi war. The negative and significant coefficient on the Age variable indicates that older respondents were less favorable toward military action. The negative and significant coefficient on the Education variable indicates that those respondents with higher levels of education were also less favorable toward military action. The coefficient on Attention was positive and significant, suggesting that those who had put more thought into military action were more inclined to approve of military action. Finally, as expected, Ideology was negative and significant, suggesting that the more conservative respondents were more likely to approve of military action.

Summary

The findings from our analyses of attitudes toward military intervention in Iraq and nuclear energy lend support to our theory of priming risk. Military intervention is an issue that the public will tend to perceive as very risky since the risks involved may be somewhat unknown and involve a high level of dread (especially with regard to fatalities). Accordingly, when individuals were primed to think about these risks, support for military intervention dropped substantially. Nuclear energy is an issue that also involves high levels of dread (though it tends to be less novel). Thus, priming risk also reduced support for nuclear energy, though to a lesser degree. In both cases, the effects of risk priming were particularly significant for less educated respondents, who may have been less likely to have given these risks much thought before they were primed to do so.

CONCLUSION

This paper presents a theory on priming risk and two preliminary tests of that theory. Understanding how citizens incorporate risk into their evaluation of policy proposals is an important endeavor. Since much of the public does not pay a great deal of attention to politics or public policy, the risks involved in policy alternatives may not be easily accessed when they are asked to evaluate various proposals. In the case of military intervention against Iraq, support was much lower among those who were primed to consider the risk of casualties involved in such action. The low level of support for the risk-primed condition before the U.S. intervened in Iraq was informative as it foreshadowed the way that public support for the war actually declined as American casualties in Iraq mounted (see Figure 1). While significant majorities favored military intervention in Iraq in most pre-war surveys, this support may have been exaggerated because
of the public’s failure to consider the risks involved in pursuing such intervention.

A more complete understanding of how risk affects the public policy assessment by individuals will also lend greater understanding to the types of policy proposals that are more or less likely to win public support. Scholars often note that the political system tends to inhibit significant policy change in favor of incrementalism (Lindblom, 1979). While much of the explanation for this falls at the feet of the political institutions in the United States, our theory suggests that public opinion may serve to thwart substantial policy changes as well. It is presumed that a large share of the public is risk averse, choosing to avoid risky propositions whenever possible. Our theory suggests that policy proposals that are relatively novel and that entail greater potential hazards will be viewed as risky alternatives by the public. As a result, it may be difficult for politicians to enact novel policy innovations that the public has little experience with. It will generally be all the more difficult to rally public support for policy alternatives that have a risk of catastrophic and fatal results, even if the likelihood of such results is small. Thus, novel and risky policy change is difficult not only because of the nature of political institutions, but also because such

Support for Iraq War is based on Gallup Poll question “Do you favor or oppose the U.S. war with Iraq?”

Fig. 1. U.S. casualties in Iraq and public support for Iraq War, 2003–2007.
change is unlikely to win public approval when the public is primed to consider the risks involved in those proposals.

The results of this research contributes to a greater understanding of the role that risk plays in affecting public opinion on policy proposals. There is little research that applies theories of how individuals behave when faced with uncertainty to the political context. This study provides such an application, illuminating how considerations of risk can be primed in the minds of some citizens on some issues. Such an undertaking will provide a framework for a better understanding of the role that risk plays in shaping public opinion on political issues and ultimately influencing the direction of public policy.

REFERENCES


