Casualties of war and sunk costs: Implications for attitude change and persuasion

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A B S T R A C T

The purpose of the present research was to gain greater insight into how people’s support for an ongoing war might be influenced by providing information about recent casualties of war. On intuitive grounds, one might expect that such information might often decrease support for the war, especially when the war in question is relatively unpopular. However, research and theory on the “sunk cost effect” suggests, somewhat paradoxically, that highlighting such losses could actually increase, not decrease, support for the war, as driven by the goal to avoid wasting valuable resources. Across two experiments (one focusing on the war in Iraq, another focusing on the war in Afghanistan), we found that the effects of the war casualty information on attitudes were moderated by a recent use and activation of the relevant “don’t waste” goal, which had been previously primed in a non-political context. The implications of our findings for theory and research on attitude change, as well as the judgment and decision making area, are discussed.

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A number of years ago, one of the authors of this article walked into the main quadrangle of his university and came upon a stunning display that had been erected the evening before: Hundreds of papier-mâché tombstones, each inscribed with two casualties of the Iraq war, one American, one Iraqi. Inquires with the organizers revealed that the display was designed to foster opposition to the Iraq war. The assumption seemed reasonable: Any display of tombstones, whether symbolic or real, would presumably serve as a reminder that the war was going disastrously, and that it had far exceeded expectations in terms of its costs, most tragically in terms of the numbers of people who had perished since the onset of the war.

However, theory and research on sunk costs (Staw, 1976) suggests that this display could affect attitudes in a way opposite to that intended. Sunk costs are irrecoverable investments which, according to normative rules of decision-making, should not govern future decisions. However, people have a tendency to continue an endeavor once an investment in money, effort, or time has been made (Arkes & Ayton, 1999). This can, in turn, lead to an escalation of commitment even as one is presented with growing evidence that one is involved in a losing cause (Moon, 2001). If people could treat information about war causalities as they might other sorts of valuable resources, this suggests that reminding people of these deaths might serve to increase, not decrease, their support for the war.

These considerations highlight a provocative ambiguity about losses (for a related discussion, see Boettcher & Cobb, 2009). Many decisions in life are relatively “risky” in the sense that they can lead to the loss of valuable resources of all sorts, including the loss of human life. On intuitive grounds, it might seem that calling attention to these losses would tend to decrease people’s commitment to any prior decision that was responsible for producing those losses in the first place. Theory and research from the sunk cost literature, however, suggests that calling attention to these losses might have the opposite effect, serving to actually increase commitment. We believe that both perspectives are correct. In other words, given any “objective” information about loss (e.g. “8000 troops have perished so far in the war”) there are likely to be conditions under which this information will decrease commitment, but there are other conditions in which the opposite effect will occur. At the present time, however, the boundary conditions under which losses will exert these different types of effects are unclear. The overarching goal of the present research was to gain more insight into these matters.

Theoretical background

Previous research on war casualties and public support for war

There is a long history of research in the political science literature which has considered the factors determining Americans’ support for war (Brody, 1984; Gartner & Segura, 1998; Mueller, 1973). One of the more commonly-discussed variables is war causalities and, in

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particular, loss of life among American troops. For many years, it has been assumed that public support for any given military operation (e.g., an invasion of another country) should be inversely related to war casualties, such that higher loss of life is associated with less support for that operation, and vice versa (Coker, 2001; Gentry, 1998; Luttwak, 1996). As noted in a recent review by Gelpi, Feaver, and Reifler (2009), however, the actual picture is somewhat more complicated, as factors other than war casualties can determine public support for the war, such as likelihood of a successful outcome (Eichenberg, 2005). Indeed, Americans have shown the capacity to be remarkably tolerant of war casualties, provided that the subjective probability of success of the stated mission is relatively high (Gelpi et al., 2009). When casualties do exert an effect on attitudes, however, the prevailing assumption in this literature is that such casualties will tend to decrease support for war.

To date, much of the evidence in this area is correlational, involving retrospective analysis of survey data (e.g., involving attitudes toward the Vietnam War), in which changes in public support are plotted as a function of changes in the rate at which casualties are occurring (Gartner, Segura, & Wilkening, 1997; see also Klarevas, 2002). In principle, such a causal link could be established in a controlled study, in which participants are randomly assigned to condition in which they either are, or are not, presented with/ reminded of statistics regarding loss of life among U.S. troops. Importantly, one would need to present such statistics in isolation from other persuasive elements (e.g., persuasive arguments either for or against the war) in order to show the impact of war casualties per se on attitudes. However, we know of no research which has taken this type of experimental approach. Hence, although there is a good deal of correlational evidence to support the link between war casualties and attitudes toward war, we are not aware of any studies to show direct evidence of causality.

Quite apart from the aforementioned literature on the determinants of public support for war, there is a largely separate and distinct literature on the “sunk cost effect” (Arkes & Ayton, 1999), mostly conducted in the decision making literature, which has been concerned with the psychological processes by which people remain committed to a prior decision. As Boettcher and Cobb (2009) have noted, there have been surprisingly few attempts to reconcile the political science literature on war casualties with relevant research and theory on sunk costs. Such integration would be interesting and theory would be useful in explaining how people might remain committed to a war in the face of mounting loss of life. This, in turn, raises the question as to how mere exposure to statistics about war casualties per se on attitudes. However, this reasoning seems to run counter to normative rules of decision making, since the money is gone (i.e., is irretrievable) no matter what choice is selected, and therefore should not govern future decision-making.

Among theorists who have studied the sunk cost effect, there is considerable debate as to whether these and other demonstrations reflect yet another example of the irrationality of human decision making (cf. Gigerenzer & Goldstein, 1996). However, such debate ultimately involves the thorny problem of how to define “rationality”, a centuries-old problem that is unlikely to be resolved to anyone’s satisfaction (Stein, 1996). For this and other reasons, we largely sidestep the “rationality” issue in this paper. In our view, studying the antecedents and consequences of the sunk cost effect are of interest in their own right, because such study is likely to yield valuable insights into the processes underlying human decision making, setting aside whether any individual choice is supposedly “rational” or not.

Some unresolved issues

Previous investigations have often studied the sunk cost effect in the context of hypothetical “decision scenarios”, in which participants are asked to imagine that they had made a prior commitment (e.g., enrolling in a health care plan), with the dependent variable typically focusing on their willingness to remain committed to that hypothetical decision. These types of paradigms can be very useful ways of studying the sunk cost effect, because they allow researchers to have a good deal of control over the various parameters (e.g., the amount of money or time invested) that could potentially influence people’s motivation to continue a prior decisional commitment. The flexibility offered by these sorts of experimental paradigms has been useful in showing the boundary conditions of the sunk cost effect (e.g., Heath, 1995; Soman, 2001). For example, Soman (2001) found that sunk cost effects are more likely to occur when resources are framed in terms of money rather than time, perhaps because people are somewhat less adept at mentally keeping track of “expenditures” of the latter compared to the former.

In principle, the results of these studies have the potential to speak to real-world issues, such as how people might remain committed to an actual, ongoing war in the face of mounting loss of life. This, in turn, raises an interesting issue that, to our knowledge, has not been explored in the literature: In the absence of any other explicit attempts to change people’s attitudes, would mere exposure to losses be sufficient to trigger the sunk cost effect, making people more committed to war than they otherwise would be? Note that this would be the opposite of what most of the literature on troop casualty rates might seem to predict. This question has important practical as well as theoretical implications. In the case of the United States’ involvement in the Iraq and Afghanistan wars, for example, this raises the question as to how mere exposure to statistics about war
casualties, absent any other attempt to sway public opinion in a "pro" or "anti" direction, might affect public support for these conflicts.

**On the moderating effect of goal activation**

Our starting point in this endeavor was the theoretical framework offered by Arkes and Ayton (1999) who, as noted earlier, posit that the sunk cost effect is driven by an underlying "don't waste" goal. As with other types of goals, the likelihood that the "don't waste" goal actually affects behavior and decisions depends on its cognitive accessibility (Bargh, Gollwitzer, Lee-Chai, Barndollar, & Troetschel, 2001; Ferguson & Bargh, 2004). Although there is much evidence to support the Arkes and Ayton (1999) model, we are not aware of any research that has experimentally manipulated the accessibility of this goal, to examine its possible effect on decisional commitment. An important, but as-yet untested, implication of their formulation is that accessibility of this goal, to examine its possible effect on decisional commitment. An important, but as-yet untested, implication of their formulation is that accessibility of this goal, to examine its possible effect on decisional commitment. In addition to this manipulation, our design also manipulated the cognitive accessibility of the don't waste goal. In the section to follow we describe the methodology used to prime this goal, along with some supporting evidence that validated our assumptions about it.) We predicted that this goal priming manipulation would moderate the impact of the troop casualty information on war attitudes. Among participants who were not primed with this goal in the earlier session, participants would express less support for the war if they were exposed to war casualty information than if they were not. However, the opposite pattern was anticipated among participants exposed to the goal priming condition; here, exposure to war casualty information was expected to produce increased, not decreased, support for the war. These predictions are summarized in Fig. 1.

Before turning to the next section, the relation of the present research to a recent investigation reported by Boettcher and Cobb (2009) should be noted. On a theoretical level, our framework builds strongly on a key point raised by Boettcher and Cobb (2009) regarding the "dual nature" of losses, and in particular, the notion that such losses have the capacity to either increase or decrease support for the war that was responsible for producing those losses in the first place. Apart from this general similarity, however, the more specific aims of our research, and the methodological and empirical approaches used to meet those aims, are quite different. The specific ways that our research is different from that of Boettcher and Cobb (2009) can be seen more clearly in the context of the results obtained from the two experiments reported here. Hence, we defer consideration of the Boettcher and Cobb (2009) study until after these results have been presented.

**Overview of the present research**

During the time that we conducted our research, the United States was embroiled in two relatively unpopular wars (one involving Iraq and one involving Afghanistan) that were costly in many ways, including but not limited to the deaths of thousands of American troops. In both of the experiments reported in this article, we used a relatively simple manipulation involving losses, in which participants were randomly assigned to read a newspaper article which either did, or did not, state the number of American troops who died as a result of the Iraq War (Experiment 1) or the war in Afghanistan (Experiment 2). The primary dependent variable was participants’ attitudes toward the war, as assessed by a battery of questionnaire items designed to assess sentiments toward the military conflict in question.

In addition to this manipulation, our design also manipulated the cognitive accessibility of the don't waste goal. (In the section to follow we describe the methodology used to prime this goal, along with some supporting evidence that validated our assumptions about it.) We predicted that this goal priming manipulation would moderate the impact of the troop casualty information on war attitudes. Among participants who were not primed with this goal in the earlier session, participants would express less support for the war if they were exposed to war casualty information than if they were not. However, the opposite pattern was anticipated among participants exposed to the goal priming condition; here, exposure to war casualty information was expected to produce increased, not decreased, support for the war. These predictions are summarized in Fig. 1.

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**A preliminary experiment**

One of the challenges of this research was to devise a methodology that could unobtrusively prime the don't waste goal. As it turns out, the existing literature on the sunk cost effect offered valuable leverage for our purposes. Earlier in this paper we noted that researchers have developed a variety of very clever techniques to produce sunk cost effects. For example, hypothetical decisional scenarios that involve the previous investment of money have generally been shown to reliably trigger sunk cost effects (Soman, 2001). Viewed within the lens of the Arkes and Ayton (1999) framework, such scenarios are likely to be effective insofar as they are

![Fig. 1. Moderating effects of don't waste goal and salience of troop casualties on attitude change.](image-url)
activating the underlying don’t waste goal. Although we are not aware of any research to take this approach, these considerations suggest that these decision scenarios could be used as a kind of independent variable (i.e. as a goal priming manipulation). In particular, by randomly assigning participants to either complete (vs. not complete) these scenarios, this should lead to one group of participants for whom the don’t waste goal is relatively more accessible. One advantage of this approach was that it allowed us to show how activation of the don’t waste goal could affect how people process information about war casualties, even though the context in which that goal was originally activated had nothing whatsoever to do with war or politics in general. Selective activation of this goal should, in turn, serve to moderate the impact of war casualties on war attitudes in the manner suggested by Fig. 1.

Given the importance of the aforementioned assumptions regarding the sunk cost tasks, it seemed prudent to provide independent evidence of support for these suppositions. In addition, such data are useful in order to determine why, exactly, completing the sunk cost tasks might increase the likelihood of goal use. One possibility is that the task could increase the cognitive accessibility of the goal, making it more salient in memory than it otherwise would be (Wyer & Srull, 1989). However, “goal priming” could also involve more evaluative mechanisms as well. In particular, the activation and use of any given goal rests, in part, on the subjective appeal of that goal along with the outcomes associated with it (Moskowitz & Grant, 2009). For example, situational factors that highlight the favorableness of the goal of losing weight could, in and of itself, make it more likely that people subsequently act in ways that are consistent with that goal (Ferguson, 2008). This raises the interesting possibility that prior completion of a set of sunk cost problems could also increase the hedonic value of the don’t waste goal, apart from any changes in its cognitive accessibility.

In order to gain traction on these issues, we conducted a preliminary study (N = 36) in which we randomly assigned participants to complete one of two types of decision-making problems, which either were, or were not, related to the sunk cost effect. These two contrasting set of problems (which were identical to that used in our two main experiments), are presented in Appendix A. For participants in the experimental condition, participants were given a set of three decision making scenarios. For example, in addition to the tennis elbow task discussed in the introduction, one of the scenarios read as follows:

Suppose you went out alone to eat at a fancy restaurant to treat yourself. You aren’t familiar with any of the items on the menu but you are able to narrow your choice down to two different entrées. One entrée, the fish, costs $20. The other entrée, fresh lobster from Maine, costs $38. You go ahead and decide to order the lobster. After taking a few bites you realize the lobster is not what you expected and you do not like it at all. (And you realize that you can’t exchange it back). What would you do? Choice A: Go out and see your favorite band; Choice B: Stay in with your friend.

The three sunk cost tasks were carefully constructed to capture the dynamics relevant to the sunk cost effect. In all three tasks, an initial, irrecoverable investment is made ($38 in the above example) followed by negative feedback on the outcome of this investment (here, bad tasting lobster). Then, two choices are offered, including one indicating a decision to continue with one’s initial commitment (Option A) or a decision to discontinue (Option B).

Each of the sunk cost tasks had two additional features: (a) it forced participants to make a difficult trade-off between competing motives and (b) selection of any given choice would satisfy one but not the other motive. In constructing the control tasks, it was important that these tasks, too, had these two features as well. This feature of our manipulation was important because it allowed us to rule out the possibility that the effect of completing the sunk cost problems was simply a result of forcing participants to make a difficult decisional trade-off between competing motives. Hence, the only important difference across condition was the fact that the control problems were not relevant to issues of loss or previous investments, as in the following control scenario:

Assume you are visiting a friend in Los Angeles, someone you haven’t seen in five years. While staying in L.A., you had planned to see your favorite band with your friend. On the day of the show, your friend does not want to go out, and would rather stay in for the night. However, your friend says you can go to the concert if you want to. What would you do? Choice A: Go out and see your favorite band; Choice B: Stay in with your friend.

Following this manipulation, participants were presented with a randomized set of cultural aphorisms on a computer screen. One of these (‘waste not want not”) was relevant to the sunk cost effect but the other three (‘practice makes perfect; every cloud has a silver lining; absence makes the heart grow fonder”) were not. As each phrase appeared on the screen, participants were instructed to make three series of judgments, including (a) whether they recognized the phrase, (b) whether they understood its underlying meaning, and (c) whether they agreed with it or not. For each judgment, participants were instructed to hit one of two keys marked “yes” or “no”. Because we were interested both in the nature of participants selection (i.e. whether they hit the yes or no key) as well as the latency of their response, participants were provided with standard “reaction time” instructions as recommended by Fazio, Hendrick, and Clark (1990) which asked participants to maximize both the speed as well as the accuracy of their response.

Results revealed a significant effect of the experimental manipulation on the rate of agreement to one and only one of the aphorisms, namely, the one relevant to not wasting previous investments (‘waste not want not”). In particular, participants showed a much greater tendency to agree with this statement (i.e. hit “yes” to the agreement question) if they had recently completed the sunk cost tasks (75% agreement) than if they had not (38%), p < .05 for the relevant test in loglinear analyses. However, there was no hint of this effect for any of the other phrases, all ps > .25 and analyses of the other two rating tasks (recognition and understanding) did not reveal any additional effects. Two sets of analyses on reaction times (one for the “yes” responses, and another for the “no” responses) did not yield any significant effects, all ps > .20.

Summary

These findings are important for two reasons. First, they provide independent evidence supporting our assumption that, on average, participants who completed the sunk cost tasks (vs. the control tasks) would be more likely to subsequently endorse the don’t waste goal. Moreover, our data generally suggest that the underlying mechanism is probably more evaluative than cognitive in nature. In particular, we did not find any effects involving reaction time (including the identification and meaning-related judgments), which would have provided some support for the accessibility hypothesis. In contrast, we found strong differences in the subjective appeal of the don’t waste goal, which would presumably make it more likely that participants would use it in a subsequent task. This finding provides useful grounding of assumptions for the two experiments to be reported ahead.

A note on the coding of responses to the sunk cost problems

In the goal priming task described above, we expected that the majority of participants would show evidence for the sunk cost effect in terms of how they responded to each of the three decision making scenarios. We were able to test this assumption directly, by simply coding the type of response made to each scenario. (For example, we coded responses to the tennis elbow task in terms of whether participants either elected to keep playing or not, with the “keep playing” vs. “don’t keep playing” response representing evidence or absence of the sunk cost effect, respectively). As it turns out, the majority of participants tended to show evidence of the sunk cost effect on at least two out of the three scenarios, and this trend was nearly identical across the three occasions in which we used this manipulation (i.e. the preliminary study reported above, along with Experiments 1 and 2). In particular, among the total of 126 participants who were assigned to complete this task, 24% showed evidence of a sunk cost response on all three scenarios, 58% showed evidence on two, 16% showed evidence on one, with only 2% failing to show evidence on any of the three scenarios. These data help to validate our assumptions regarding the goal priming task insofar as it successfully elicited the desired response among most participants. However, the fact that there was (some) variability in terms of how participants responded to the task raises an interesting issue, namely, whether merely exposure to the task was sufficient to produce the predicted effects or, alternatively, whether participants’ actual responses on the task itself also played a role. Because of the complexity of this issue, we defer consideration of this issue until after the main results have been presented, at which point we present the relevant analyses based on the combined data from Experiments 1 and 2.

Experiment one

This study consisted of three main stages. In the first part of the study, we used the same goal-priming manipulation as was used in the preliminary study, in which participants completed a set of three decision making scenarios that either were, or were not, relevant to the don’t waste goal. The second part of the study involved the manipulation of the salience of losses due to the war. In particular, all participants were asked to complete an ostensibly unrelated task on “semantic processing” in which they were asked to read a short newspaper article. For half of the participants, the article conveyed factually correct information about the number of American troops who had died in the Iraq war. Importantly, this article only presented the war casualty statistics, and thus did not contain any explicit persuasive messages designed to sway participants in either a pro-war or anti-war direction. The other half of the participants read a control article, on an upcoming hot summer. In combination, these two manipulations resulted in a 2 (Goal priming) × 2 (Loss Salience) fully crossed design. The third stage of the study consisted of a randomized series of questions about the Iraq war. Participants’ responses to these items were used to form an overall composite index of war attitudes.

Method

Participants and design

A total of 84 participants completed the study in partial fulfillment of course credit or $10 payment. The design included two manipulated variables, the nature of the initial decision-making exercise (sunk cost vs. control) as well as the content of the subsequent newspaper article (control, US troop causalities).

Goal priming task

Following the individual difference pre-test, participants were then told that they would be participating in a study on “decision making processes” and, following some introductory comments, participants were asked to solve three decision-making dilemmas, the nature of which varied across condition. The materials and methods of this task were identical to that used in the preliminary study, described earlier (cf. Appendix A).

Manipulation of the salience of war-related casualties

As part of an ostensibly unrelated study on “Reading Comprehension” participants next were instructed to read one of two types of newspaper articles (each of which consisted of a single paragraph), which ostensibly appeared in the New York Times and was graphically designed to appear as such. The control article focused on a weather forecast of a hot upcoming summer and made no mention of any other current events. The treatment article focused on the basic facts of the Iraq war, with explicit reference to the number of casualties suffered by U.S. troops (e.g., “Today the Defense Department released the latest numbers to the press on the Iraq War. These figures span the entire length of the conflict, beginning with the March 2003 invasion to the present. During this time, there have been 3163 American causalities and 23,417 Americans wounded in Iraq.”) The statistics cited in this article were accurate and were based on news reports around the time the study was conducted. In both conditions, participants were provided with an opportunity on a blank sheet of paper to express their thoughts and opinions regarding the article they had read.1

Assessment of war attitudes

Participants were next presented with an array of 25 attitude items on the computer, displayed in a different randomized order for each participant. In constructing these items, our purpose was to provide a broad-band index of participants’ general sentiments toward the war and, as such, these items varied widely in terms of their content as well as whether they were written in a pro-war or anti-war direction. (e.g. The invasion of Iraq was a war of necessity; The Iraq War has been one of America’s biggest foreign policy blunders; Even though we did not find weapons of mass destruction in Iraq, it was still worth it for the U.S. to invade and get rid of Saddam; America has already wasted too many resources on the Iraq War, and should be ending its involvement there). For each statement, participants were asked to indicate their own personal attitude toward it by pressing any key ranging between −3 (strongly disagree) and +3 (strongly agree).

In order to reduce this array to a smaller number of meaningful indices, we conducted principal component analyses (with varimax rotation) on all of these items. This analysis revealed one primary factor which accounted for substantially more variance (37%; eigenvalue = 9.33) than any of the other components to emerge from these analyses. (All of the other components to emerge from these analyses accounted for less than 9% of the total variance, all eigenvalues less than 2.5). This component clearly appeared to represent a general evaluative dimension, yielding moderate to high positive loadings with several pro-war items, along with negative loadings of the anti-war items. The full list of 25 items along with their loadings on this factor, are presented in Appendix B. On the basis of this analysis, therefore, we formed a general index of pro-war attitudes based on the factor loadings (using the regression method.

1 While conducting Experiment 1 we also assigned some of our participants to a different war casualty article, which focused on deaths suffered among Iraqi civilians. As it turns out, the effects elicited by calling attention to these “foreign losers” were somewhat different from those elicited by the article that called attention to losses among the ingroup (i.e. the American troops article). The issue of how different types of casualties can elicit different types of responses is, of course, interesting in its own right. However, given that Experiment 2 only used the American troops version, this latter study was not able to follow up on this asymmetry to further establish its replicability and meaning. Hence, for the sake of clarity, our analyses from Experiment 1 focus on the contrast between the American troops vs. control article, which is the same contrast which was investigated in Experiment 2. Further details regarding the results obtained from the Iraqi civilian version may be obtained from the first author.
Consider first the top row of Table 1, which corresponds to those participants who received the sunk cost prime. In this case, participants expressed more support for the war if they had been presented with information about troop casualties than if they had not (Ms = −.40 vs. −.16, M_difference = +.56, F (1, 77) = 4.64, p < .05, but this pattern was non-significantly reversed among participants who had not received the sunk cost primes (Ms = −.42 vs. −.10, M_difference = −.32), F (1, 77) = 1.26, p > .20. Stated differently, highlighting the losses from the Iraq war led participants to express more support for this war than they did in the absence of these losses, provided that participants had been exposed to the sunk cost prime. However, this pattern was reversed when war casualties were not salient. This pattern was responsible for the predicted interaction of goal priming and loss salience, F (1, 77) = 5.28, p < .05.

A somewhat different but conceptually related way of examining these data is to compare and contrast the effects of the priming manipulation within the war casualty article condition (left column of Table 1) as well as within the control article condition (right column). Consider first the left column of Table 1, corresponding to when war casualties were salient. In this case, priming the don’t waste goal led to significantly more support for the war compared to conditions in which this goal was not primed (Ms = .40 vs. −.42, M_difference = +.82), F (1, 77) = 8.69, p < .01. However, this pattern did not obtain when war casualties were not made salient (cf. right column) and, if anything, war attitudes were trivially more negative when participants were primed with the sunk cost questions than when they were not (Ms = −.16 vs. −.10, M_difference = −.06), ns. As will be seen in the study to follow, a roughly similar contingency was also observed in Experiment 2.

### Experiment two

Replications are always useful in that they establish the generalizability of any given effect and strengthen one’s confidence in their implications. Such replications are, however, particularly important in the type of research reported in this article. For one thing, the observant reader may have noted that the size of our effects were not large. This was not completely unexpected, given the nature of our experimental paradigm. As Prentice and Miller (1992) have noted, seemingly small effects can be important and impressive, particularly when (a) the experimental manipulation is deliberately designed to be subtle and (b) the research domain is focused on relatively hard-to-shift dependent variables, which often includes pre-existing attitudes. Both of these conditions were present in our paradigm. Replications are also important when the research in question is concerned with, and may be affected by, fast-moving historical events outside of the laboratory (cf. Doise, 1986). In the case of Experiment 1, this study was conducted in the first few months of 2007 (February–April), when several significant events relevant to the Iraq war had just occurred, or were unfolding at the time. This included the well-publicized troop “surge”, in which President George W. Bush announced that 20,000 additional troops would soon be deployed in Iraq.

Experiment 2 was conducted in a far different context. For one thing, the study took place in the Fall of 2009 and focused on the events surrounding the war in Afghanistan, rather than Iraq. Additionally, Barack Obama was now in the first year of his presidency and, although his approval ratings were not as high as they were at the beginning of his presidency, he still was receiving extremely high approval ratings (82%) among self-identified liberals (Gallup, 2009). Even as the United States’ involvement in Iraq was continuing, the country was embroiled in a new debate over a different war. Although the United States had already had a military presence in Afghanistan for several years, the debate over further military involvement in that country was clearly a major political issue at the time. Indeed, on December 1 of 2009, President Obama delivered a major policy speech in which he laid out the pros and cons of such involvement, ultimately concluding that “as Commander-in-Chief, I have determined that it is in our vital national interest to send an additional 30,000 U.S. troops to Afghanistan”. Nevertheless, despite the general popularity of Obama among the American public, national polls revealed a nation sharply divided over these matters, both before as well as after this speech.

These changes allowed us a valuable opportunity to replicate and extend the findings of Experiment 1. The core experimental manipulations (sunk cost prime and war casualty reminder) were similar to that of Experiment 1, as was the predicted interaction involving these variables. However, this second study was focused on participants’ attitudes toward a different war (Afghanistan), under the leadership of a new president and commander in chief. Moreover, this was still occurring in the immediate aftermath of a previous war in Iraq, strongly associated with the previous president, George W. Bush, who left the office with one of the lowest approval ratings in American history. Our ability to obtain a conceptual replication of our earlier findings, despite the differences noted above, would provide useful evidence supporting the robustness and generalizability of our earlier findings.

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2 At the beginning of the experimental session, participants completed a 10-minute battery of individual difference measures, which included three sets of items that we considered might be relevant to participants’ attitudes toward the Iraq war. These included (a) a 16-item measure of political expertise similar to that used in our previous research (Lambert et al., 2010), (b) the 32-item Right Wing Authoritarianism scale (RWA; Altemeyer, 1988), and (c) two short questions, embedded among the RWA scale, asking participants to recall whether they had, or had not, supported the initial invasion of Iraq. None of these variables (political expertise, RWA, or recollection of prior support) moderated the impact of our experimental manipulations, although all three were modestly correlated with the main dependent variable. Hence, in Experiment 1, we included these three premeasures as covariates (this resulted in a slight reduction in the degrees of freedom, from 80 to 77); a nearly identical but slightly weaker pattern of results obtained when these variables were not controlled for in the analyses. In Experiment 2, our initial battery included only the RWA scale (political expertise and prior support were not measured) and hence in that study RWA was included as the sole covariate. As in the first study, the pattern of results was nearly identical, but slightly weaker, when RWA was not included as a covariate.

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Table 1

(Experiment 1; N = 84): War attitudes as a function of type of newspaper article and prime type.

<table>
<thead>
<tr>
<th>Prime condition</th>
<th>War casualties</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunk cost</td>
<td>−.40 (18)</td>
<td>−.16 (18)</td>
</tr>
<tr>
<td>Control</td>
<td>−.42 (21)</td>
<td>−.10 (19)</td>
</tr>
<tr>
<td>Difference</td>
<td>+.82**</td>
<td>−.06</td>
</tr>
</tbody>
</table>

Notes: Values represent standardized scores on war attitude index (standard deviations in parentheses). Higher numbers indicate more support for the war.

* p < .05.
** p < .01.
Table 2

(Experiment 2; N = 131): War attitudes as a function of type of newspaper article and prime type.

<table>
<thead>
<tr>
<th>Type of newspaper article</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>War casualties</td>
<td>Control</td>
</tr>
<tr>
<td>Prime condition</td>
<td></td>
</tr>
<tr>
<td>Sunk cost</td>
<td>−.11 (.17)</td>
</tr>
<tr>
<td>Control</td>
<td>−.21 (.17)</td>
</tr>
<tr>
<td>Difference</td>
<td>+.32</td>
</tr>
</tbody>
</table>

Notes: Values represent standardized scores on war attitude index (standard deviations in parentheses). Higher numbers indicate more support for the war.

Method

Participants and design

A total of 131 participants completed the study during the fall of 2009 in partial fulfillment of course credit or $10 payment. As in Experiment 1, the design included two manipulated variables, the nature of the initial decision-making exercise (sunk cost vs. control) as well as the content of the newspaper article (American casualties vs. control).

Sunk cost prime

The materials and methods of the sunk cost prime were identical to that of Experiment 1.

Manipulation of the salience of war casualties

Participants were assigned to read one of two types of newspaper articles. The control article was identical to that used in Experiment 1. As for the experimental article, this was roughly analogous to the “U.S. troops” article used in Experiment 1, except that the focus of the article was on Afghanistan, not Iraq. In this case, the article made explicit reference to the total number of U.S. troop casualties and injuries resulting from the Afghanistan war dating back to the initial involvement of the United States in the war. In order to strengthen the impact of the manipulation, the article also included a set of bar graphs, depicting the month-by-month tabulation of U.S. troop casualties in Afghanistan in 2009, which clearly showed a steady increase in the rate of deaths since January. As in Experiment 1, all statistics cited in the experimental article were accurate and up to date at the time the study was conducted.

Assessment of war attitudes

The general purpose of the war attitude questionnaire, as in Experiment 1, was to assess participants’ general sentiments toward the war, although in this case the focus of these questions was on the war in Afghanistan. This obviously necessitated modification of the items in the scale although, as before, this included a randomized mixture of both pro-war and anti-war items (e.g., I am against sending more United States troops to Afghanistan; We have spent a great deal in lives and money in Afghanistan, and we should continue to fight until our objectives are met). Aside from this difference, we used an analytic strategy identical to that of Experiment 1. In particular, we submitted all of the war attitude items to a principal components analyses and this analysis again revealed one primary factor which accounted for substantially more variance (47%; eigenvalue = 16.98) than any of the other components to emerge from these analyses. As in Experiment 1, this component clearly appeared to represent a general evaluative dimension, once again yielding moderate to high positive loadings with several pro-war items, and negative loadings of several anti-war items; the full list of items along with their loadings on this primary component is listed in Appendix C. As in Experiment 1, we formed a general index of pro-war attitudes based on these factor loadings (using the regression method in SPSS), such that higher numbers indicated more favorable attitudes toward the war.

Results and discussion

The pattern of war attitudes as a function of experimental variables is shown in Table 2. As in the first study, it is useful to first consider the top row of this table, which corresponds to those participants who received the sunk cost prime. In this case, participants showed a non-significant tendency to express more support for the war if they had been presented with information about troop casualties than if they had not (Ms = .11 vs. −.21, Mdifference = +.32), F (1, 126) = 1.54, p > .20. However, this pattern was significantly reversed among participants who had not received the sunk cost primes (Ms = −.21 vs. .29, Mdifference = −.50), F (1, 126) = 4.16, p < .05. This crossover interaction, which reflected the same basic pattern as that obtained in Experiment 1, was confirmed by the emergence of the predicted 2-way Goal Priming × Loss Salience interaction, F (1, 126) = 5.32, p < .01. As in Experiment 2, it is also possible to make comparisons within each of the two newspaper article conditions. Among participants for whom casualties were made salient (left side of Table 2), there was a non-significant trend to express more support for the war if participants had been primed with the don’t waste goal than if they had not (Ms = .11 vs. −.21, Mdifference = +.32), F (1, 126) = 1.64, p > .20, with a significant reversal of this pattern among participants for whom casualties were not salient (Ms = −.21 vs. .29, Mdifference = −.50), F (1, 126) = 3.95, p < .05.

Although the overall pattern of these data is the same as was observed in Experiment 1, it should be acknowledged that there were some minor differences in the relative magnitude of the effects across condition. Recall that in Experiment 1, the positive impact of the war casualty article among participants exposed to the sunk cost primes was somewhat greater than the predicted, negative impact of these casualties among participants assigned to the control prime condition (top and bottom rows of Table 1, respectively). In contrast, this asymmetry was reversed in Experiment 2. A second asymmetry also arose in terms of the relative strength of the sunk cost prime within the two newspaper article conditions. In Experiment 1, the impact of the sunk cost prime was more evident in the war casualty condition compared to the control article, whereas the opposite asymmetry arose in Experiment 2.

It is important to note, however, that neither of these asymmetries—which most likely reflect random fluctuations across the two studies—qualifies the main implications to be drawn from these data. Most important for our purposes, it was the combination of the sunk cost prime, along with making war casualties salient, that appeared to be necessary in order to trigger increased commitment to the war. Stated differently, priming the don’t waste goal did not appear to be sufficient to produce a boost in support for the war, as it was also necessary for war casualties to be salient at the time participants rendered their opinion on the war. Both studies showed evidence of this interactive effect.

Table 3

(Combined data from Experiments 1 and 2; N = 215): War attitudes as a function of type of newspaper article and prime type.

<table>
<thead>
<tr>
<th>Type of newspaper article</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>War casualties</td>
<td>Control</td>
</tr>
<tr>
<td>Prime condition</td>
<td></td>
</tr>
<tr>
<td>Sunk cost</td>
<td>+.18 (.13)</td>
</tr>
<tr>
<td>Control</td>
<td>−.27 (.14)</td>
</tr>
<tr>
<td>Difference</td>
<td>+.45*</td>
</tr>
</tbody>
</table>

Notes: Values represent standardized scores on war attitude index (standard deviations in parentheses). Higher numbers indicate more support for the war.

* p < .05.
Analyses on combined data from Experiments 1 and 2

Even though they were conducted over a year apart, and were concerned with a different war, the experimental design of our two studies was essentially identical. Note also that the main dependent variable in both studies was an overall pro-war index, expressed in terms of standardized scores. This fact not only allowed us to conduct analyses on the combined data from both studies but also conduct some important analyses that were not feasible for each of the two studies in isolation.

Initial analyses on the combined data, displayed in Table 3, revealed support for the predicted crossover Goal activation × Loss Salience interaction, F (1, 210) = 9.16, p < .01. As seen here, highlighting the salience of war casualties produced significantly more positive attitudes toward the war, provided that participants had earlier been exposed to the sunk cost primes (Ms = .18 vs. −.18, M_difference = +.36), F (1, 210) = 3.78, p < .05, with a significant reversal of this pattern among participants assigned to the control prime condition (Ms = −.27 vs. .18, M_difference = −.50), F (1, 210) = 5.41, p < .05. As in the previous two studies, one can also make meaningful comparisons within each of the two newspaper article types. Among participants for whom casualties were made salient (left side of Table 3), participants expressed significantly more support for the war if they had been primed with the don’t waste goal than if they had not (Ms = .18 vs. −.27, M_difference = +.45), F (1, 210) = 5.36, p < .05, with a significant reversal of this pattern among participants for whom casualties were not salient (Ms = −.18 vs. .18, M_difference = −.36), F (1, 210) = 3.70, p < .05.

Although these multiple comparisons highlight different aspects of the data, they all converge on the same conceptual point which is central to our framework, namely, that our sunk cost prime exerted an interactive effect on war attitudes in combination with the article type. As noted above, activating the don’t waste goal exerted an interactive effect on war attitudes in combination with the article type. Of this pattern among participants for whom casualties were not salient (Ms = −.18 vs. .18, M_difference = −.36), F (1, 210) = 3.70, p < .05.

Additional analyses of the goal-priming task

Recall that participants in the critical goal-priming condition were presented with three decision making scenarios, each one requiring participants to make an explicit decision as to whether they would remain committed to an initial decision, such as whether they would continue to eat their lobster dinner after paying for it, despite the fact that they didn’t like the food. In both studies, many—but not all—participants showed evidence of the sunk cost effect on all three scenarios. According to our preferred interpretation, this variation is relatively unimportant. That is, the key element was the fact that these participants (but not the control participants) had been exposed to a set of decisions that had activated evaluative-based concern over not wasting valuable resources. If so, mere exposure to the critical decision scenarios would, in and of itself, have been sufficient to activate this concern over not wasting resources, regardless of how participants actually responded on the task. For example, even if a particular participant indicated that he or she would not continue to eat the lobster dinner after paying for it, the scenario itself is certainly relevant to a concern over not wasting valuable resources, making it more likely that this goal-based concern would later play an important role in how that participant processed information about war casualties. In other words, it was the general relevance of those scenarios to a concern over not wasting resources (and not the literal way that the participants elected to resolve the dilemma) that was most important.

In order to test this interpretation, we tabulated the number of times that participants showed evidence of a sunk cost effect across each of the three critical decision scenarios. (Note that these analyses are relevant only for participants who completed the critical decision scenarios, and hence this tabulation was not conducted for participants who had been assigned to the control scenarios.) Among the 110 participants from the two studies who were assigned to the critical goal priming condition, approximately one third (n = 33) showed evidence of the sunk cost effect on all three scenarios, slightly less than half of the participants showed it twice (n = 52), with less than twenty percent (n = 20) showing it once. (A very small number of participants (n = 4) did not show evidence of the sunk cost effect at all; these participants are not included in these supplemental analyses, although they had always been included in the main analyses reported earlier.) Hence, for each participant we computed a “commitment index” derived from their performance on the decision scenarios, which could range between a maximum of 3 and a minimum of 1.

Keeping in mind that these analyses were conducted only among participants assigned to the don’t waste goal, we expected that there would be a significant effect of article type, such that participants would express significantly more favorable attitudes toward the war if they had been presented with information about war casualties than if they had not. Importantly, we expected only an effect of article type, with no reliable effects attributable to the commitment index, either in its own right or in combination with the article manipulation. In order to test this idea, we conducted hierarchical multiple regression analyses in which, following recommendations of Aiken and West (1991)(see also Jaccard, Turrisi, & Wan, 1990) we first centered the “commitment index” and then entered this variable along with dummy-coded article type in an initial block. The product of these two variables was then entered in a second block. These analyses revealed the expected significant effect of article type, Beta = .24, t (3, 102) = 2.65, p < .01. This confirms the implications of the ANOVAs presented earlier, which showed that among participants exposed to the sunk cost primes, participants expressed more favorable attitudes toward the war if they had received the war casualty article than if they did not. Of more importance, the commitment index itself was not reliably related to war attitudes, Beta = .11, t (3, 102) = 1.19, p > .20. This indicates that variation in responses to the decision scenarios was not actually predictive of how participants later responded on the war attitude questionnaire. Finally, analyses revealed no evidence of an interaction involving article type and the commitment index, Beta = −.11, t (1, 101) = .94, p > .20.

Some caution should be exercised in drawing conclusions from these analyses, given that this variation in how participants responded on the decision scenarios could have been due to any number of factors. It should also be noted that we only had participants respond to three scenarios and that the majority of participants did, in fact, show evidence of the sunk cost effect on at least two out of the three scenarios. If we had employed a greater number (and greater diversity) of scenarios, it is possible that we could have obtained more leverage in using this variation as a meaningful index in its own right. Nevertheless, we did observe some degree of variation even with the three scenarios used here and, consistent with our working framework, this variation did not reliably predict differences in the way that participants responded to the war attitude questionnaire, nor did it qualify the effects produced by the manipulation of article type. In general, then, these analyses provide reasonable support for our preferred interpretation insofar as it was exposure to the decision scenarios themselves, which was responsible for the observed effects of our priming manipulation.

General discussion

This research is based, in part, on the idea that the dynamics surrounding the sunk cost effect could lead people to become more committed to an ongoing war than they otherwise would be. We are
hardly the first to make this sort of connection. Indeed, the relevance of the sunk cost effect to people's commitment to war is often mentioned, at least in passing, in many scholarly discussions of the sunk cost effect, as well as in the popular media (e.g. Schwartz, 2005; Wydick, 2007). However, such discussion has been almost entirely anecdotal, involving speculative extensions of the existing sunk cost literature to the domain of attitudes toward war. To our knowledge, we are the first to study these matters in a controlled laboratory setting, which permitted us to manipulate, via a priming methodology, the probability that the underlying “don't waste” goal would influence pre-existing attitudes toward war.

It should also be kept in mind that the point of our research is not simply that the sunk cost prime could increase people's commitment to war. Rather, we take a more nuanced view, insofar as we stress the situational flexibility in terms of how people process information about losses. Motives to avoid waste certainly represent a powerful goal, but it seems unlikely that people would always rely on it when formulating their opinions about the war. If this were so, publicizing war casualties would always lead people to become more pro-war, which seems implausible. One of the major points of our research was that presenting people with information about the losses of war could either increase or decrease commitment to an ongoing war, depending on whether the underlying don't waste goal was actually activated and used as a basis for responding. Our results add to an existing literature which has examined the relation between war casualties and public support for war (Gelpi et al., 2009). As noted earlier, this literature has considered only two possibilities, namely, that war casualties would either decrease support for an ongoing war, or would have no effect at all. In combination with a previous study by Boettcher and Cobb (2009) (to be discussed in more detail ahead), our findings call attention to the possibility that there are conditions in which war casualties can actually increase such support.

Across two experiments, we demonstrated such effects through the use of an experimental design which orthogonally manipulated two variables in combination with each other. The first of these variables was the sunk cost priming manipulation, which was designed to manipulate the probability that our participants would rely on the don't waste goal. Our pilot test was useful in demonstrating that the priming effect in question involved changes in the subjective appeal (i.e. valence or hedonic value) of the goal in question, as opposed to its cognitive accessibility. For this reason, our priming task is certainly different from more well-known priming paradigms used in the social cognition literature, such as that used to prime personality traits (e.g. Higgins, Rhokes, & Jones, 1977; Wyer & Srull, 1989). Nonetheless, recent work on goal priming (Ferguson, 2008) has shown that situationally-induced changes in the hedonic value of a goal (along with its associated outcomes) can systematically affect the likelihood that participants use that goal in a later context. The second experimental manipulation, which followed the sunk cost prime, involved a manipulation of the salience of war casualties, by randomly assigning participants to condition in which they read a newspaper article which either did, or did not, contain information about the war in Iraq (Experiment 1) or Afghanistan (Experiment 2).

Several aspects of our research point to the robustness and replicability of our findings. For one thing, we obtained a very similar pattern of results across two studies that were conducted nearly two years apart and which occurred in distinctly different historical and political contexts. Experiment 1 was conducted in 2007, while a conservative and rather unpopular president was in office (George W. Bush), and was concerned with participants' attitudes toward the Iraq war. The second study, Experiment 2, was conducted nearly two years later, during the first year of a far more liberal president (Barack Obama) and was concerned with participants' attitudes toward the war in Afghanistan. Taken in combination, this and other aspects of our research minimize the extent to which our findings reflect something idiosyncratic about the context in which the research was carried out.

Implications for “persuasive appeals” to sway public support for the war

The considerations raised in this article suggest that the activation of the don’t waste goal could be employed in the service of changing people's opinions, motivating them to become significantly more committed (i.e. “get back on board”) with respect to positions and policies that they had either partially or wholly rejected. A recent advertising campaign by the pro-war lobbying group Freedom's Watch provides a relevant illustration. The ad in question consisted of a video clip of a severely disabled American marine who (in the voice over) is heard to say that “Congress was right to vote to fight terrorism in Iraq and Afghanistan. I re-enlisted after 9/11 because I don’t want my sons to see what I saw. I want them to be free and safe. I know what I lost. I also know that if we pull out now, everything I’ve given and sacrificed will mean nothing.” Once activated, the aversive feeling that human beings might have died for no reason is a powerful force that almost certainly transcends the specifics of any particular military conflict. This suggests that activation and use of this goal could, in and of itself, be used as a powerful device to change people’s attitudes toward war. In the case of the Freedom’s watch video, however, its actual effects on war attitudes are unknown, although in principle one could do so in a controlled study in which participants were randomly assigned to conditions in which they either were or were not exposed to an analogous message.

This is, in fact, the approach taken in an interesting and important article by Boettcher and Cobb (2009). In that study, researchers were interested in testing whether participants' attitudes might be affected by exposing them to a “pro-war” persuasive appeal roughly analogous to that used in the aforementioned Freedom's Watch video, discussed earlier. Aside from a control group (which received no persuasive message) all participants received the same core “don’t waste lives” message (i.e. “…we need to stay and complete the mission in Iraq to honor the dead and make sure they did not die in vain”). Among those who received this message, the message was attributed either to Pat Robertson (a well-known conservative evangelist), Robert Casey (a commander of the U.S. army) or was not attributed to any source in particular. Relative to the control group, participants exposed to the “don’t let them die in vain” message tended to report higher commitment to the war, but this was only true when the pro-war appeal was unattributed to any specific person.

The findings reported by Boettcher and Cobb (2009) are provocative, insofar as they suggest that explicit “pro-war” messages that call attention to the aversiveness of wasting lives can be quite effective ways to increase people’s commitment to an ongoing war, at least when the message is not attributed to a specific individual. At the same time, it should be noted that the persuasive message used in that study confounded two factors: namely, it increased the salience of war casualties at the same time that it called attention to the aversiveness of wasting precious resources. Nor did their study experimentally manipulate concern over wasting resources. Hence, their study (unlike ours) was unable to isolate the effect of losses per se on war attitudes, independent of activating motives and goals associated with the sunk cost effect. As our research shows, people can respond to losses in very different ways, depending on the relative accessibility of the don't waste goal, and in some cases presentation of “losses” can lead people to become significantly less, not more, committed to a prior decision. Nevertheless, despite these and other differences between our paradigms, the present research builds upon a very important theoretical point made by Boettcher and Cobb (2009) regarding the dual nature of losses, and their capacity to influence commitment in different ways.

Broader implications

One striking implication of the present research is that merely thinking about trivial behaviors such as eating lobster, playing tennis, and watching football can, under certain conditions, exert a reliable
effect on attitudes and beliefs regarding matters of enormous importance, such as war. The fact that we were able to obtain reliable, replicable effects with such subtle primes is a testament to the potential impact that the don’t waste goal can have on judgment and behavior.

This, in turn, raises some even larger implications in terms of the kinds of factors that might be relevant to changing people’s attitudes toward war. No war is exactly like another, as each is situated within its own particular historical and political context. For example, over the last 50 years, the United States has become embroiled in at least two highly controversial wars, in Vietnam and Iraq. It goes without saying that the specific considerations surrounding each war—and the reasons why people would end up supporting or rejecting American involvement in it—were vastly different. Given the different considerations surrounding each war, one would normally expect that kind of persuasive message that would have been effective in changing attitudes toward the Vietnam war would be very different from the messages that can produce changes in attitude toward the Iraq war, and vice versa.

Our research suggests that there may be one important exception to this principle. As we noted earlier in this article, the aversive feeling that human beings might have died for no reason is a powerful force that almost certainly transcends the specifics of any particular military conflict. This perspective is well illustrated by sentiments expressed by George Ball (a member of Lyndon Johnson’s cabinet) who, in a memo to the president suggested that “Once we suffer large casualties, we will have started a well-nigh irreversible process. Our involvement will be so great that we cannot—without national humiliation—stop short of achieving our complete objectives” (Staw, 1981). In sum, despite the complexities specific to the individual military conflict, the motivation to avoid wasting the lives of soldiers may be common to all wars and can be an important factor in driving support for the continuation of combat, no matter the context.

These considerations also raise important implications for any political leader wishing to sway public opinion, regardless of whether these efforts were intended to push attitudes in a pro or anti-war direction. On the one hand, leaders wishing to continue or even intensify involvement in a war would presumably want to frame the political rhetoric in terms of protecting previous investments (e.g., “we must not let our brave troops die in vain”) while presumably minimizing the prospect of future losses (e.g., by remaining committed to the war, we can have most of our troops home by Christmas). Conversely, leaders wishing to terminate involvement in a war would need to use framings that avoid the feeling of wasting previous investments while, at the same time, emphasizing that early withdrawal would end up saving more lives in the long run. An important goal of future research is to shed further light on the ways that people process information about loss, particularly with respect to the situational flexibility of decision making both within and outside of the realm of politics.

Appendix A. Sunk cost problems

Imagine you have paid $500 (nonrefundable) to join an exclusive tennis club for 6 months. During the first week of your membership, you develop tennis elbow. It is moderately painful to play. Your doctor tells you that the pain may continue for about a year. What would you do? Choice A: Try continuing playing, despite the pain; Choice B: Stop playing immediately.

Imagine you obtain an A—on the first exam of a course you are taking. After handing back the exams, your teacher says you can improve your grade by giving an oral presentation to the class on the same material the test covered. What would you do? Choice A: Give the presentation; Choice B: Keep your test score.

Suppose you and your significant other want to go out for dinner on Friday night. You’re tired of going to the same 3–4 restaurants you both usually go to. Your partner suggests sushi, something you haven’t had since middle school, and the last time you had it, you became violently ill. Your partner is being picky and will only go to the new sushi place or the usual locations. You are starving. What would you do? Choice A: Go out and see your favorite band; Choice B: Stay in with your friend.

Imagine you have paid $500 (nonrefundable) to join an exclusive tennis club for 6 months. During the first week of your membership, you develop tennis elbow. It is moderately painful to play. Your doctor tells you that the pain may continue for about a year. What would you do? Choice A: Try continuing playing, despite the pain; Choice B: Stop playing immediately.

Suppose you went out alone to eat at a fancy restaurant to treat yourself. You aren’t familiar with any of the items on the menu but you are able to narrow your choice down to two different entrées. One entrée, the fish, costs $20. The other entrée, fresh lobster from Maine, costs $38. You go ahead and decide to order the lobster. After taking a few bites you realize the lobster is not what you expected and you do not like it at all. (And you realize that you can’t exchange a dish simply because you don’t like it.) You remember you have some leftovers at home you still could eat. Do you keep eating the meal at the restaurant? Option A: Yes, stay at restaurant; Option B: No, go home.

Imagine that one of your friends offers to sell his ticket to the last home football game. You are a huge football fan, and have not been able to attend a game all season. You pay him 75 dollars for the seat, which has a great view of the field. Two weeks later, on game day, the weather is terrible, with high winds and freezing rain. The ticket is nonrefundable and so you cannot get any of your money back. Your choice is to sit through the weather and watch the game, or go home. Which would you decide in that situation? Option A: Stay at the stadium; Option B: Go home.

Control problems

Assume you are visiting a friend in Los Angeles, someone you haven’t seen in five years. While staying in L.A., you had planned to see your favorite band with your friend. On the day of the show, your friend does not want to go out, and would rather stay in for the night. However, your friend says you can go to the concert if you want to. What would you do? Choice A: Go out and see your favorite band; Choice B: Stay in with your friend.

Imagine you obtain an A—on the first exam of a course you are taking. After handing back the exams, your teacher says you can improve your grade by giving an oral presentation to the class on the same material the test covered. What would you do? Choice A: Give the presentation; Choice B: Keep your test score.

Appendix B. Factor loadings for all questionnaire items from Experiment 1

The invasion of Iraq was a war of necessity. (+.77)

The Iraq War was a mistake. (−.74)

Even though we did not find weapons of mass destruction in Iraq, it was still worth it for the U.S. to invade and get rid of Saddam. (+.74)

America has already wasted too many resources on the Iraq War, and should be ending its involvement there. (−.72)

The Iraq War has been one of America’s biggest foreign policy blunders. (−.71)

The American military can still achieve an honorable victory in Iraq. (+.70)

The Iraq War has made the U.S. safer. (+.68)

I support sending additional U.S. troops into Iraq. (+.68)

Despite the costs of the war, America is better off now with Saddam Hussein dead than with him in power. (+.67)

Leaving Iraq now would send the signal to the rest of the world that America is weak and willing to surrender to the enemy. (+.66)

U.S. troop levels should remain at least at their current levels until the Iraqi government is able to defend itself from the insurgency. (+.64)

People who criticize the U.S. government over its handling of the war are giving aid and comfort to the enemy and thus could embolden the terrorists and the other enemies of America. (+.64)
It is unfair to our troops to leave them in Iraq to be part of an ongoing civil war. (−.60)
The Iraqi people should be much more grateful towards America for getting rid of a brutal dictator and helping them rebuild their country. (+.59)
Iraqi civilian casualties should not influence American military policy since the loss of innocent lives is a part of every war. (+.57)
It is better that we fight the terrorists over there in Iraq than have to fight them here at home. (+.56)
The American involvement in Iraq has increased, not decreased, the number of terrorists around the world. (−.54)
The U.S. should begin to remove troops from Iraq in a phased out manner over the next year. (−.49)
It seems like the U.S. media only shows the violence coming out of Iraq and never shows all the good things that are being accomplished over there. (+.47)
The U.S. should withdraw all troops out of Iraq immediately. (−.46)
Like it or not, Iraqis themselves are to blame for much of what is happening in Iraq these days. (+.36)
In general, I feel sympathetic towards Iraqi civilians. (−.28)
Iraqi civilians should NOT be blamed for the chaotic situation in Iraq. (−.24)
It seems the violence in Iraq is now an Iraqi problem, and there is little else U.S. troops can do to help the situation. (−.20)

Note: The war attitude index used in Experiment 1 was based on a weighted standardized index based on all of the items listed above, using the regression method in SPSS. (See text for details.) Items were presented in a different randomized order for each participant but are arranged here in descending order, beginning with the strongest-loading items first; positive and negative signs indicate positive and anti-war items, respectively.

Appendix C. Factor loadings for all questionnaire items from Experiment 2

America should leave Afghanistan now and not worry about how much we’ve spent on the war. (−.81)
The United States should cut its losses now and end its involvement in the Afghan war. (−.81)
After so much investment into the war in Afghanistan, it would be unwise to pull out our troops before the job is done. (+.75)
America has wasted too many resources on the Afghan war, and should be ending our involvement there. (−.73)
The United States should immediately withdraw all troops from Afghanistan. (−.72)
We have spent a great deal in lives and money in Afghanistan, and we should continue to fight until our objectives are met. (+.71)
It is unfair to our troops to leave them in Afghanistan to be part of a war that cannot be won. (−.61)
I am for sending more American troops to Afghanistan. (+.57)
America should send more troops to Afghanistan in order to defeat the terrorists. (+.57)
It would be incredibly wasteful for America to leave Afghanistan now before the mission is complete considering we have lost so many of our armed forces there already. (+.57)
I am against the current war in Afghanistan. (−.56)
I am against sending more United States troops to Afghanistan. (−.55)
I support the current war in Afghanistan. (+.54)
America should gradually begin to remove troops from Afghanistan. (−.54)
It seems the violence in Afghanistan is now an Afghan problem, and there is little else U.S. troops can do to help the situation. (−.53)
The Afghanistan War has been one of America’s biggest foreign policy blunders. (−.52)
Leaving Afghanistan now would send the signal to the rest of the world that America is weak and willing to surrender to the enemy. (+.50)
We need to continue the fight in Afghanistan. Osama bin Laden still has not been caught or killed. (+.47)
In order to prevent another 9/11, we must send more United States troops to Afghanistan. (+.42)
The American involvement in Afghanistan has increased, not decreased, the number of terrorists. (−.42)
The United States must stay committed to Afghanistan to get the acknowledged perpetrator of the 9/11 attacks, Osama bin Laden. (+.39)
In order to prevent another 9/11, we must continue the war in Afghanistan. (+.37)
The United States has already invested so much into the war in Afghanistan, stopping now would mean all the resources we poured into the country would be a waste. (+.35)
We need to keep fighting in Afghanistan to prevent the terrorists from building up training camps there, like they did before 9/11. (+.35)
We need to be fighting in Afghanistan as long as there are members of the terrorist group Al-Qaeda in the country. (+.33)
The war in Afghanistan has made us safer here in the United States. (+.31)
The war in Afghanistan cannot be “won” by the United States. (−.30)
The American military can still achieve an honorable victory in Afghanistan. (+.29)
History tells us that Afghanistan has never had a stable government, and there is no reason to believe the United States military will be able to create one there. (−.28)
The current war in war in Afghanistan was a mistake from the beginning. (−.27)
I trust President Obama with whatever decision he makes about troop levels in Afghanistan. (−.23)
The initial decision to go to war in Afghanistan was the correct one. (+.23)
The people of Afghanistan should be much more grateful towards America for getting rid of a brutal regime and helping them rebuild their country. (−.17)
As long as we eventually kill Osama bin Laden, the lives we lost in Afghanistan will have been worth it. (+.10)
Once America removes troops from Afghanistan, there is no doubt that the Taliban and terrorist groups like Al-Qaeda will take over control of the country. (+.04)
People who criticize the U.S. government over its handling of the Afghan war are giving aid and comfort to the enemy, and thus could embolden the terrorists and other enemies of America. (−.03)

Note: The war attitude index used in Experiment 2 was based on a weighted standardized index based on all of the items listed above, using the regression method in SPSS (see text for details). Items were presented in a different randomized order for each participant but are arranged here in descending order, beginning with the strongest-loading items first; positive and negative signs indicate positive and anti-war items, respectively.

References


