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Counter-Framing Effects

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Abstract

In the contest for public opinion in electoral campaigns, each side tries to frame issues to its advantage, but success also depends on developing effective responses to opposition frames. This paper explores how the timing and repetition of counter-frames affect their success. Using an over-time experiment, the researchers show that the best counter-framing strategy is contingent on the nature of audiences. Individuals who are motivated to form strong opinions in response to initial frames tend to defend those positions against counter-frames as long as the initial opinion remains accessible. Paradoxically, repetition of the counter-frame can backfire if it continually reinforces initial opinions by stimulating motivated reasoning. Therefore, extending the time lag between frame and counter-frame can increase the impact of the counter-frame by allowing initially strong opinions to decay. In contrast, counter-framing is always effective among those who form weak initial opinions regardless of the amount of elapsed time between the initial frame and the counter-frame, and repetition of the counter-frame can amplify its impact on these individuals.

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Politicians and interest groups regularly compete to define policy issues in terms that are favorable to their positions. Their strategies assume that an issue can be construed using alternative frames of reference, and that the frame adopted by an ambivalent public will influence its evaluation of the issue. For example, individuals who are persuaded to view estate taxes as a double taxation of income are more likely to oppose the taxes. Or, citizens who view healthcare reform as furthering egalitarian values are likely support change. A large literature reveals that these types of framing effects occur across populations, times, and issues (for a review, see Chong and Druckman 2007c). The typical study shows that when people are exposed to a given frame, their opinions are swayed in the direction of the frame (e.g., when estate taxes are represented as double taxation, opposition to the tax increases).

Such studies, however, are only a snapshot of what, in practice, is an over-time framing battle – opposing sides react to each other's frames with their own counter-frames. For example, groups or politicians who support the estate tax argue that it is a form of progressive taxation that affects only the most affluent members of society; opponents of health care reform re-frame the issue in terms of excessive government interference – "socialized medicine." How citizens react to these counter-frames often determines what policy wins in the forum of public opinion; yet, existing scholarship has paid virtually no attention to the question of what makes a counter-framing strategy successful. Indeed, while some work explores simultaneous framing competition (e.g., Sniderman and Theriault 2004, Chong and Druckman 2007b), the reality is that counter-framing occurs *over time* throughout a campaign. Recent research on over-time framing dynamics indirectly addresses counter-framing (by staggering exposure to competing frames; e.g., Chong and Druckman 2010), but it has not sought to isolate what factors influence

the success or failure of counter-framing.[1,2]

The effectiveness of the counter-frame likely will depend not only on the content of the frame but also on (1) when it is received in relation to the original (opposing) message, and (2) how often it is repeated. In this paper, we investigate these two factors. We begin the next section with a theory of counter-framing effects. We then turn to an experimental test that demonstrates the effects of time and repetition are highly contingent on the nature of the audience. We conclude with a discussion of what our results imply, and what areas are in need of further study.

Theory of Counter-Framing Effects

A framing effect occurs when a communication changes people's attitudes toward an object by changing the relative weights they give to competing considerations about the object (Druckman 2001: 226-231). A classic example is an experiment in which participants are asked if they would allow a hate group to stage a public rally. Those participants randomly assigned to read an editorial arguing for allowing the rally on free speech grounds express more tolerance for the group than those who alternatively read an editorial arguing that the rally will endanger public safety (Nelson et al. 1997). Framing is effective in this instance because the communication plays on the audience's ambivalence between free speech and social order.

A frame's effect depends on various factors including its strength or persuasiveness (e.g., does it resonate with people's values?) (Chong 2000, Chong and Druckman 2007a,b),[3] attributes

[1] The large persuasion literature explores counter-arguments but most of that occurs at a single point in time rather than separated by days as is common in campaigns.

[2] Baumgartner et al. (2009) study counter-framing efforts among lobbyist organizations in affecting discourse on an

[2] Baumgartner et al. (2009) study counter-framing efforts among lobbyist organizations in affecting discourse on an
issue, and find counter-framing rarely succeeds.

[3] Chong and Druckman (2007b) show that, when all frames are received concurrently, stronger frames influence opinions more than weaker frames, even when the weaker frame is repeated. A strong frame is typically identified via pre-tests that ask respondents to rate the frame's "effectiveness." For example, strong frames for and against the hate group rally might invoke considerations of free speech and public safety while a weak opposition frame might be an argument that the rally will temporarily disrupt traffic.

of the frame's recipients (e.g., their values or party identification can moderate the impact of a frame) (Cohen 2003, Berinsky 2007, Lenz 2009), and the political context. In competitive environments, for example – where individuals are exposed concurrently to each side's strongest frame (e.g., free speech versus public safety), the frames tend to cancel out and exert no net effect (e.g., Sniderman and Theriault 2004, Chong and Druckman 2007b, Hansen 2007, Druckman et al. 2010). Of course, in most instances, individuals receive competing frames not at one point in time, but over-time. In the more dynamic context of a campaign, both the timing of exposure to the counter-frame (relative to the original frame) and repetition of the counter-frame may influence how individuals process and evaluate the competing messages.

We define a counter-frame as a frame that opposes an earlier effective frame. There are three notable elements to this definition. First, a counter-frame comes later in time than the initial frame. Thus, we do not view simultaneous exposure to competing frames as counter-framing per se (this would be akin to dual framing) – we assume the initial frame has been received earlier and processed separately. Second, a counter-frame advocates a position on the issue that is contrary to the earlier frame. Third, we assume the initial frame affected opinions on the issue, thus creating an incentive to counter-frame (otherwise a later frame would not be "counter" per se).

There are a host of aspects to counter-framing such as whether the frame explicitly invokes and argues against the initial frame. We focus here on a basic counter-frame that simply supports an alternative view than the position advocated by the earlier frame.[4] Competition between frames that offer conflicting interpretations of issues characterize a fair amount of political communications (see Chong and Druckman 2011). As mentioned, we attend to two

[4] We also focus exclusively on "strong" frames with the presumption that opposing sides come to learn – over time or via market research – what constitutes a "strong" frame (see, e.g., Jerit 2004).

aspects of counter-framing strategy: the amount of time that passes between exposure to the initial frame and the counter-frame, and over-time repetition of the counter-frame.

The dynamics of framing over time are more complicated to predict because people are influenced by the order in which information is received. Early messages affect people's attitudes on an issue, which then affect how subsequent information is evaluated. The path dependency of framing therefore depends on the durability of attitudes formed in response to earlier communications. Although time generally erodes the effects of framing, the rate of decay varies according to the strength of people's attitudes – attitudes that are stronger, by definition, last longer and are more resistant to change and persuasion (see, e.g., Visser et al. 2006).

As Chong and Druckman (2010) elaborate, attitude strength is influenced by whether individuals form and update attitudes favoring either an on-line or memory-based approach. When individuals process a message about an issue on-line, they integrate the various considerations contained in the message into an overall evaluation. Individuals then store the summary evaluation in memory, possibly forgetting the original considerations that contributed to the tally. When asked subsequently for their attitude toward the issue, individuals retrieve and report their overall on-line tally rather than reconstruct and evaluate the specific pieces of information that comprise this summary (see, e.g., Hastie and Park 1986, Lodge et al. 1995, Druckman and Lupia 2000).[5] For example, an online processor might become more tolerant of a hate group rally after being exposed to a free speech frame, but in due course may forget the reason for his support even though his attitude toward the rally remains stable.

In contrast, individuals who use memory-based information processing store considerations about the issue in memory without necessarily forming an overall judgment, and

[5] Processing mode creates variation in the opinions expressed at any moment (e.g., McGraw and Dolan 2007), but less noted is its effect on the durability of opinions (Mitchell and Mondak 2007).

subsequently retrieve and evaluate accessible considerations when asked their opinion about the issue (Bizer et al. 2006: 646). For example, if these individuals are initially exposed to a free speech frame, they do not immediately form an opinion about the hate group rally. The opinions they express subsequently depend on whether they can recall the earlier frame – and in many instances, their memory of the frame will have decayed to a point where they no longer have access to it (e.g., Lodge et al. 1995, Chong and Druckman 2010, Gerber et al. 2011).

In short, on-line processors actively integrate information into judgments and tend to develop stronger attitudes, reflected in the certainty with which they hold their views and the higher correlation between their attitudes and behavioral intentions (Bizer et al. 2004, 2006: 647). It follows that on-line processors also will hold more stable attitudes as they can summon a readily accessible on-line evaluation each time they report their attitude. These strong attitudes can subsequently condition responses to any new frames and inoculate individuals from further influence. Inoculation may stem from motivated reasoning, as individuals with strong opinions are driven to preserve their existing opinions by counter-arguing and dismissing opposing arguments. Taber and Lodge (2006) suggest that motivated reasoning pervades politics (also see Druckman and Bolsen 2011).

Memory-based processors differ – at any given time their attitudes are based on imperfect and variable recall of details (see Briñol and Petty 2005: 583). They are less likely to hold the strong prior opinions that condition responses to later frames (see Tormala and Petty 2001: 1600-1601), and encourage motivated reasoning (Taber and Lodge 2006).

Evidence from Chong and Druckman (2010) supports the distinction between on-line and memory-based processing. In their experiment, they studied the effect of counter-framing on attitudes toward the Patriot Act. Participants were randomly assigned at time 1 (t1) to receive either a Pro frame (i.e., the Patriot Act as a counter-terrorism issue) or a Con frame (i.e., the

Patriot Act as a civil liberties issue). Then ten day later, at time 2 (t2), these respondents received either no message or the opposing frame (i.e., those who received the Pro counter-terrorism frame later received the Con civil liberties frame). In addition to varying the sequence of frames, Chong and Druckman manipulated how participants processed the information contained in the frames. Based on random assignment, individuals were induced to employ either on-line or memory-based processing, or they were not manipulated. The purpose of these manipulations was to influence the strength of attitudes formed and therefore the persistence of evaluations over time.

Chong and Druckman report that, for MB processors, framing effects at t1 quickly decayed and were dominated by the counter-framing effect at t2, indicating a strong recency effect. OL processors, however, showed the opposite – a primacy effect – as the t1 frame moved them and made them resistant to the t2 frame, which had virtually no influence. Those who were not manipulated to use either MB or OL processing fell between these two tendencies: the t1 and t2 frames largely offset one another resulting in neither a primacy nor recency effect. This result may have reflected the natural mix of MB and OL processing styles in the group that was not treated.

Communication effects therefore can change over time; whether they fade or endure when no additional messages are received, or under pressure of competing messages, depends on how information is processed. Strong attitudes persist and resist persuasive communications aimed at changing them. Those manipulated to form weak attitudes, via MB processing, are more susceptible to the counter-frame (as the initial framing effect decays). Counter-framing success depends on initial attitude strength because those with stronger attitudes are more likely to reject the counter frame (via motivated reasoning) (also see Haugtvedt and Wegener 1994).

We next expand this discussion to explicitly consider how timing and repetition of exposure to the counter-frame can modify its impact.

Timing Effects

When individuals receive a counter-framed message, their reaction will be affected by their prior opinions (e.g., Brewer 2003, Chong and Druckman 2007a,b). The timing of a counter-framed message will matter if prior attitudes on the issue weaken over time, which will be the case if communication effects decay. Our hypotheses about the impact of time assume that communication effects decay among all respondents, but that the rate of decay is slower among on-line processors and faster among memory based processors. Without a formal model of decay, our hypotheses are necessarily inexact about the amount of time needed between exposures to frames in order to produce the effects we discuss. Our hypotheses therefore do not identify precise time lags, but relative intervals. For example, when we contrast the effects of "early" versus "late" exposure to the counter-frame, we mean early enough or late enough to have created the conditions of attitude decay assumed by the hypothesis. The exact time defined by early or late cannot be specified without more extensive data and, in any event, will vary across issues and respondents. In designing our experiment, we tried to time our observations at intervals (10 days) that would capture different rates of opinion decay among our respondents depending on how they processed information. We assumed that after 10 days, on-line processors would continue to have access to their original attitudes, but that memory-based processors would have difficulty recalling the content of earlier communications. We further assumed that after 20 days, there would be significant decay of opinions even among online processors.

As explained, for MB processors who form weak initial opinions, decay will be very rapid (e.g., Lodge et al. 1995, O'Keefe 2002: 258, Chong and Druckman 2010, Gerber et al.

2011). Unless the counter-frame appears very quickly (nearly immediately or at least within a day or two), the timing of the counter-frame will make little difference. MB processors will be susceptible to the counter-frame shortly after the initial frame and more time will not matter because the original communication effect will have decayed earlier.

Hypothesis 1: For MB processors, communication effects decay so rapidly that the amount of elapsed time between exposure to the initial frame and counter-frame will have little or no impact on the success of the counter-frame.

In contrast, OL processors are less influenced by the t2 frame due to the persistence of the initial frame and motivated reasoning.[6] That said, even when people form strong attitudes in response to a communication, these attitudes will not persist indefinitely (e.g., Krosnick 1988, Conner and Armitage 2008: 271). Zanna et al. (1994) report that while attitudes persist longer when they are strong (also see O'Keefe 2002: 259), they still become significantly less accessible over-time. Even strong opinions decay as time elapses between initial exposure and counter-frame exposure, rendering it less of a moderating force and diminishing motivated reasoning (Taber and Lodge 2006). The more the initial attitude weakens, the greater the potential impact of the counter-frame (also see Lechler and de Vries 2010). Consequently, the impact of the counter-frame among OL processors will increase as time elapses following exposure to the original frame.

Hypothesis 2: For OL processors, the effect of the counter-frame increases with the amount of elapsed time between exposure to the initial frame and counter-frame (because increased times allows for greater opinion decay).

Repetition Effects

The effects of repeating a counter-frame will depend on the schedule of repetition. We focus on a counter-frame that is repeated twice at distinct points in time after exposure to the

[6] In fact, arguing against the counter-frame may move attitudes in the opposite direction of the frame and strengthen the original attitude (Redlawsk 2002: 1025, Taber et al. 2009, Bizer et al. 2003: 252).

initial frame. The question we investigate is whether repetition increases the impact of the counter-frame.

For MB processors, whether the initial counter-framing effect will be further augmented by a second exposure to the counter-frame is not clear. Although there is a sizable literature, particularly in consumer research, on message repetition, the bulk of this work focuses on one point in time.[7] The modal finding is that repetition can increase the persuasiveness of a message (as long as there is not too much repetition), particularly when elaboration is low (e.g., Haugtvedt et al. 1994: 177, Keller and Lehman 2008, Moons et al. 2009).[8] Repetition induces increased perceptions of accuracy, familiarity, and accessibility (e.g., Cacioppo and Petty 1989, Moons et al. 2009). Thus, it is possible that over-time repetition may affect opinions, if seeing an argument for a second time increases the accessibility of the initial attitude and forestalls its decay. In this scenario, the effect of the second exposure builds on the first exposure, and pushes opinion (among MB respondents) further in the direction recommended by the frame.

Conversely, repetition may have no additional impact on opinion valence if the updated opinion (from initial exposure to the counter-frame) is also weak and ephemeral. Thus, another exposure to the same counter-frame may not further move opinion (given decay between exposures). Each additional exposure would be akin to seeing the frame for the first time. Between these alternative possibilities, we do not have a clear prediction, so we will simply test whether repetition of the counter-frame among MB processors moves opinion significantly beyond single exposure.

[7] However see Cromwell and Kunkel (1952) who find some effect for a repeated communication over time, 30 days after exposure to that same communication. They report a smaller, but still significant, effect from the second message compared the effect of the first.

[8] However, Schumann et al. (1990) show that substantive repetition (i.e., of substantive messages) only has an effect when under conditions of high personal relevance.

For OL processors, if exposure to the counter-frame at t2 occurs in close proximity to the initial frame, the prior opinion will still be accessible. This increases the likelihood that the counter-frame will be discounted, and exposure to it may actually strengthen the prior opinion. As long as the original attitude is accessible, the counter-frame will prompt rehearsal of the rationale underlying the original attitude and thereby reinforce it. For example, if OL processors are persuaded initially at t1 by a message that frames a hate group rally as a free speech issue, they will be motivated to argue against any contrary frames (such as concerns for public safety) they encounter shortly after at t2. Furthermore, the exercise of counter-arguing at t2 will bolster their initial pro-free speech opinion (see Redlawsk 2002) and extend their resistance to subsequent counter-framing attempts at t3. For this reason, the counter-framing message would have been more effective if it had been delayed long enough (until t3) to allow the initial opinion to fade. As long as the original attitude remains accessible, exposure to the counter-frame interrupts the decay process and strengthens the prior.

Hypothesis 3: For OL processors, early exposure and repetition of counter-frames can forestall decay and strengthen prior opinions.

Our theory also leads to predictions about attitude strength and specifically *attitude certainty* – which is one of several overlapping elements of strength (others include accessibility, extremity, importance, relevance, and certainty). We focus on certainty because increased exposure to frames will make people more certain of their opinions (indeed, certainty tends to increase with information acquisition; see Druckman and Bolsen 2011, Visser et al. 2006).[9] As explained, for OL processors, early and repeated exposure to a counter-frame will prompt counter-arguing that increases certainty, but this will not occur if the counter-frame is delayed and not repeated. Repetition of the counter-frame may also increase attitude certainty among MB

[9] Also, Bizer et al. (2006) explicitly show that OL processing increases certainty.

processors, particularly if they are primed to recall the earlier exposure. When individuals initially receive information, they encode it, but when they receive the same information again, their attitudes are bolstered (Berger 1992, Visser et al. 2006: 39). In other words, repeated exposure may stimulate recall, which in turn increases certainty (see Cook and Insko1968, Cacioppo and Petty 1989, Haugtvedt et al. 1994).

Hypothesis 4: For OL processors, early (relative to the initial frame) and repeated counter-framing will increase certainty (compared to delayed counter-framing).

Hypothesis 5: For MB processors, repetition of the counter-frame will increase attitude certainty if earlier exposures are primed and remain accessible.

The Patriot Act Experiment

Our study of counter-framing is based on the Patriot Act experiment analyzed in Chong and Druckman (2010). As explained, the study used data gathered in two waves (t1 and t2) separated by a 10 day interval; the current study uses those same data but also adds data gathered in a third wave (t3) approximately 14 days following wave 2. The experiment was conducted via the internet with a sample drawn to be representative of the U.S. population.[10] Opinions about the Act, while colored by partisanship, also reflect a value tradeoff between personal safety (from terrorism) and civil liberties. Participants answered basic demographic questions at the start of the time 1 (t1) questionnaire, and additional demographic and political questions after completing the time 2 (t2) and time 3 (t3) questionnaires. Our main dependent variable in each period is the extent to which one opposes or supports the Patriot Act, measured on a 7-point scale with higher scores indicating increased support.

There are three key elements to our design. First, we used pretests to select two competing "strong" frames; as mentioned, these included a Strong-Pro (SP) frame that

[10] We contracted with a survey research company (Bovitz Research Group) to collect the data. As with most internet survey samples, respondents participate in multiple surveys over time and receive compensation for their participation. Demographics of the sample are available from the authors. The study took place in December, 2009, and January, 2010.

emphasizes the threat of terrorism (e.g., the Act improves the government's ability to identify terrorist plots) and a Strong-Con (SC) frame that points to the Act's infringement on civil liberties (e.g., the Act expands the government's search and surveillance powers).[11] Second, we investigate the endurance of t1 framing effects when there is (a) no exposure to additional frames at t2, but exposure to a competing frame at t3, and (b) exposure to a competing frame at both t2 and t3. Third, we used a standard procedure to manipulate the strength of attitudes formed in response to frames by exogenously inducing either memory-based (MB) or on-line (OL) processing of messages (e.g., Hastie and Park 1986, Mackie and Asuncion 1990, Bizer et al. 2006).

Participants read a series of framed statements (varying by condition) about the Patriot Act, taken from newspaper coverage.[12] For the OL manipulation, designed to produce stronger attitudes, respondents were instructed to evaluate each statement according to the extent to which it decreased or increased their support for the Act. Respondents in the OL condition were also told they would be asked to report their attitude toward the Patriot Act at later points in time (see Hastie and Park 1986). In the MB manipulation, intended to produce weaker attitudes, respondents were asked to rate each statement according to the extent it seemed "dynamic" (i.e., used more action-oriented words); these respondents were not informed that they would be asked for their opinion on the issue.

We randomly assigned participants to one of 16 conditions, including a control group. Respondents in the control group received no frames at t1, t2, or t3 and were not instructed on

[11] In their content analysis of *New York Times* coverage of the Act, Chong and Druckman (2011) report these are the most frequently appearing frames (also see Best and McDermott 2007: 12, Goux et al. 2008).

[12] We told respondents the statements came from recent news coverage. We opted for a series of statements rather than complete news articles so as to more closely resemble the processing manipulations used conventionally in psychology (e.g., where the OL manipulation requires statement by statement assessments). We pre-tested all statements (as well as others) to ensure they captured Civil Liberty (SC) and Terrorism (SP) considerations and were seen as sufficiently strong. Details are available from the authors.

how to process information (i.e., there was no manipulation of their processing mode).[13] In the other 15 conditions, we tested how individuals responded to sequences of messages using MB or OL processing (induced as described above) or with no manipulation of processing mode. Processing mode was manipulated consistently in each of the three periods.

Within each processing group (MB, OL, or no manipulation), there were five sequences of messages across three periods. One set of conditions involved exposure to frames only at t1 and t3 (i.e., *there was no exposure to a t2 frame*).[14] Respondents were exposed at t1 to the Terrorism (SP) frame, the Civil Liberties (SC) frame, or both frames simultaneously. Individuals who had received the SP frame at t1 received the opposing SC frame at t3. Individuals who had received the SC frame at t1 received the opposing SP frame at t3. Individuals who received both SP and SC frames at t1 received the SC frame at t3. This adds up to nine conditions that vary processing mode (MB, OL, or no manipulation) and t1 frame exposure (SP, SC, or SP-SC). Finally, there were six conditions in which individuals again received either SP or SC at t1, but the opposing frame in *both* t2 and t3.

Because we are interested here in the dynamics of counter-framing, we will exclude from the analysis the control condition and the three conditions in which participants were exposed simultaneously to the Pro and Con frames at t1. In the end, our total N at t3 is 1077. After removing the 284 participants who fell in the control group and three simultaneous competition conditions, we are left with 12 conditions and a sample size of 794.

Table 1 displays the full set of conditions we analyze. (We report the results for the excluded conditions in a note below; the condition numbers in Table 1 are not sequential because

[13] We purposefully drew a larger N for the control group baseline.
[14] The dependent variable was measured at t2 but embedded in a fairly lengthy survey so respondents did not necessarily view this survey as an explicit follow-up on their Patriot Act opinions. This precaution was taken as Cook and Insko (1968) report that explicitly reminding people of an issue can promote the persistence of a persuasive effect.

of the excluded conditions.) It is important to note that in no case are the condition means in the t3 subsample significantly different from the means in the full sample. Moreover, all of the significant over-time changes reported in Chong and Druckman (2010) hold in the sub-sample (at least at the .1 level).

<Table 1 about here>

With these conditions, we can:

- test the effect of varying the time lag between the initial frame and the counter-frame. We compare the t1-t3 difference in conditions where the counter-frame is received first at t3 against the t1-t2 difference in parallel conditions where the counter-frame is received first at t2 (e.g., as described in Table 1, t3-t1 in condition 1 against t2-t1 in condition 11).

- test the impact of repetition by using the conditions in which there is exposure to frames at all three points in time. We compare the t3-t1 change in conditions without a t2 counter-frame against the t3-t1 change in conditions with exposure to the counter-frame at both t2 and t3 (e.g., as described in Table 1, t3-t1 in condition 1 against t3-t1 in condition 11).

Throughout our analysis, we will look at change scores because the t1 framing effects vary slightly in absolute value across the conditions.

Results

The aggregate t1, t2, and t3 means are respectively 4.41 (standard deviation = 1.79; N = 794), 4.39 (1.71; 794), and 4.40 (1.73; 794). Although these mean values suggest very high stability, there is actually significant individual level opinion change over time. Some evidence of change is available from simply looking at t1, t2, and t3 correlations, which respectively are: .57 (t1-t2), .51 (t2-t3), .38 (t1-t3). All are significant at the .01 level but they are far from perfect.

The distinction between aggregate and individual opinion speaks to discordant perspectives in the literature on Patriot Act Opinions. On the one hand, a 2011 Pew Report comparing 2006 and 2011 aggregate opinions concluded: “Public views of the Patriot Act, whose renewal is being debated by Congress, have changed little since the Bush administration.” On the

other hand, Best and McDermott's (2007: 1) individual level study of opinions shows "…reported opinions on … the USA Patriot Act – vary greatly due to simple variations in question wording, content, and response options." In what follows, we identify the sources of this variation.

Time Lags and Repetition

We report the over-time means in Figures 1-3. The means and standard deviations are reported in an appendix table. The graphs are suggestive but not strict tests of our hypotheses.[15]

<Figures 1-3 about here>

Note first that the t1-t2 results match the results reported in Chong and Druckman (2010) in all cases. In the absence of a t2 frame, MB respondents at t2 retain no t1 effects but instead recede toward the control group mean; when MB respondents receive an opposing frame at t2, they adopt the position advocated by the counter-frame. OL respondents, in contrast, are resistant to change between t1 and t2 whether or not they receive a t2 counter-frame.

However, if initial exposure to the opposing frame is delayed until t3, the counter-frame has a dramatic and significant effect on OL respondents. Given the much smaller effects of exposure to the counter-frame at t2, this suggests (consistent with hypothesis 2) that the extra time lag between t2 and t3 weakens resistance to contrary messages. In contrast, when initial exposure to the counter-frame occurs at t2, followed by a second exposure at t3, the t3 framing effect is marginal. These results confirm (consistent with hypothesis 3) that two quick repetitions

[15] As noted, we had four additional conditions that did not include explicit counter-framing. Three of these conditions included the following frame sequence at t1, t2, t3, respectively: SC-SP at t1, none at t2, SC at t3. For on-line processors, the means are 4.43 (1.42; 67), 4.40 (1.54; 67), 4.16 (1.64; 67); for memory-based processors, the means are 4.36 (1.66; 66), 4.30 (1.55; 66), 3.67 (1.80; 66); and for no manipulation respondents, the means are 4.26 (1.92; 69), 4.39 (1.90: 69), and 3.87 (2.01; 69). In all three cases, there is no significant movement from t1 to t2 (because the frames cancel out at t1), but significant negative movement at t3. The final group is a control group that received no frames at any time, with means of 4.53 (1.76; 81), 4.54 (1.77; 81), and 4.59 (1.64; 81).

of the counter-frame is less effective among OL processors than one delayed counter-frame communicated later in time. At least theoretically, patience has its advantages.

For MB processors, varying the time between exposure to the initial frame and counter-frame makes less difference. The counter-frame is equally effective whether it is received first at t2 or at t3, which is consistent with hypothesis 1. We also see that the effect of repeating the counter-frame was not symmetrical. A second exposure to the Con frame dramatically strengthened opposition to the Patriot Act, but repetition had no additional effect in the case of the Pro frame. Perhaps this reflects a negativity bias (e.g., Baumeister et al. 2001). Thus, we have a mixed answer to the question of whether repetition augments initial exposure for MB processors. Finally, the results for non-manipulated conditions more closely resemble the findings for OL processors.

Tables 2-3 report more formal tests of our hypotheses. We specifically compare two key differences – whether the difference between t3 and t1 attitudes is greater than the difference between t2 and t1 attitudes for equivalent frame sequences under specific processing conditions, and whether the t3-t1 differences vary significantly if there was an early t2 counter frame that was repeated.

Table 2 contains the time lag comparisons, with the third column reporting the change over time when the lag was short and the fourth column reporting the change for the longer lag. The final column reports the absolute difference in the change scores – when the difference is significant, it indicates the lag significantly affects the impact of the t3 frame.[16]

<Table 2 about here>

As suggested by the graphs, the data confirm that the longer lag for OL processors made a dramatic difference. With the short lag, the counter-frame had no or marginal impact, while the

[16] We assess significance by regressing the difference in change scores on the experimental conditions.

longer lag allowed decay of the original opinion and consequently a more substantial counter-frame effect (as predicted by hypothesis 2). For MB processors, the longer lag mattered in one case but not the other, and even in that one case, the effect was only marginally significant. Thus, as predicted by hypothesis 1, the longer lag had little or no impact among MB respondents because their opinions decayed significantly even when the lag was short. Similarly, varying the time lag had little effect on the non-manipulated group. In sum, delaying exposure to the counter-frame produces greater opinion change when the audience consists of those who initially formed strong attitudes (viz., OL processors). Waiting however has little direct effect among those who formed weaker attitudes.

Table 3 reports the repetition results. A significant difference between conditions at t3indicates that repetition matters (i.e., repeating the frame at both t2 and t3 had a significantly different effect beyond only one exposure at t3). For OL processors, repetition is a counter-productive strategy, as predicted by hypothesis 3. Repeating the opposing frame (either SP or SC) leads to a *smaller* change in the direction of the counter-frame; for example, the change in attitude between t1 and t3 with no repetition for the SP counter-frame is .94 whereas double exposure to the SP frame in this period moves opinion only .37. For OL processors, exposure to the counter-frame at t2 appears to have reinforced initial attitudes by spurring counter-argument and inoculating respondents against subsequent exposure to the counter-frame at t3. Therefore, opponents might do better to avoid raising the issue among those who form initially strong attitudes, because counter-framing keeps the original attitude salient and accessible.

<Table 3 about here>

For MB processors, we again see some evidence of a positive repetition effect, when the counter-frame is Strong-Con. We see no significant effects for non-manipulated individuals, presumably because this group aggregates individuals who hold t1 attitudes of varying strengths.

Overall, then, the outcome of a quick counter-framing strategy depends on the audience. If individuals formed strong attitudes in response to the first frame, counter-framing can keep the original attitude salient and forestall its decay. If people formed an initial weak attitude, waiting to counter-frame makes little difference as it will be effective in most cases; moreover, repeating the counter-frame may also be productive among such individuals. Fluctuations in the intensity of attitudes therefore create changing opportunities for persuasion and framing through communications. We will return later to the question of whether it is possible to devise an optimal communications strategy to capitalize on these variations in the public.

Attitude Certainty

Table 4 reports the mean certainty scores at each time for each processing manipulation. We measure certainty by asking respondents how certain they are of their opinions, on a 7-point scale with higher scores indicating greater certainty. As expected, at times 1, 2, and 3, certainty is greatest among OL respondents and lowest among memory-based respondents, with those who were not manipulated falling in between. Moreover, all differences are significant at the .01 level (one-tailed test). This means the OL group is always significantly more certain than the no-manipulation group, which in turn is significantly more certain than the MB group. This echoes Bizer et al. (2006) and validates our manipulation. We see some substantial over-time changes in the MB and OL conditions, which we will explore below.

<Table 4 about here>

To test hypotheses 4 and 5, we first group the conditions in Table 5 by whether there was repetition (i.e., receipt of the counter-frame at both t2 and t3) or no repetition (i.e., receipt of the counter-frame only at t3).

<Table 5 about here>

At t1, we see not surprisingly that respondents in the different OL conditions have similar mean values at t1 (5.42 and 5.25 respectively for the repetition and no repetition groups). However, at t2, the group that received a counter-frame at t2 has a significantly higher certainty score (5.67 versus 5.30) ($t_{267} = 2.27$; $p < .01$, for a one-tailed test). Moreover, for the repetition condition, the t2 score is significantly higher than the t1 score (5.42 versus 5.67) ($t_{129} = 1.98$; $p < .05$, for a one-tailed test). The same is not true for the no-repetition conditions. In short, first exposure at t2 to the counter-frame increases confidence for OL processors.

When the first exposure to the counter-frame does not occur until t3, there is no significant increase in attitude certainty (5.36) – as predicted, the longer time lag weakens what had been a strong prior attitude at t1; exposure to the counter-frame at t3 shifts opinion away from the initial t1 frame but does not increase confidence in that opinion. In contrast, when the counter-frame is repeated twice in the same interval, the t1 attitude is sustained by the recurring need to defend one's position against opposing arguments. Individuals who faced down two counter-frames reported the single highest mean certainty score (5.82). It falls short – perhaps due to a ceiling effect -- of a significant increase from t2 (5.67) for the repetition condition ($t_{129} = 1.16$; $p < .15$, for a one-tailed test), but is significantly greater than the t3 non-repetitive condition (5.36) ($t_{267} = 3.02$; $p < .01$, for a one-tailed test).

Overall, these results support hypothesis 4: when the time lag between the initial frame and counter-frame is short, the t1 attitude remains sufficiently accessible to motivate counter-arguing among OL processors; the effort of defending one's position strengthens opinions at t2 (relative to both attitude strength at t1 and attitude strength in non-repetitive conditions). Confidence in one's position is sustained at t3 despite another exposure to the counter-frame. In contrast, a long time lag between frame and counter-frame tempers any change in opinion

certainty. In sum, for OL individuals, repetition with a short lag not only leads to counter-argument and rejection of opposing positions but strengthens opinions in the process.

For the MB conditions, we see no significant differences at t1 or t2 for repetition versus non-repetition, and no significant differences over time from t1 to t2 (note that repetition was not relevant yet at t2). However, at t3, in the MB conditions involving repetition of the counter-frame, we see a significant increase in strength (to 4.80), compared both to t2 (4.53) ($t_{125} = 1.96$; $p < .05$, for a one-tailed test) and to the non-repetition conditions (4.42) ($t_{125} = 1.77$; $p < .05$, for a one-tailed test). In contrast, when the MB respondents received the frame for the first time at t3, there again is no significant impact. In short, even though repetition had a mixed effect on valence, it did increase strength.[17] Memory based processors do not become more certain when they first receive the counter-frame at t2 (in contrast to OL processors) but do become more certain when the counter-frame is repeated at t3. This supports hypothesis 5.

The no-manipulation condition matches the MB condition with the only significant change in certainty occurring after second exposure to the counter frame. The t3 certainty score (5.37) is significantly higher than the t2 certainty score (5.11) for that condition ($t_{133} = 2.15$; $p < .05$, for a one-tailed test) as well as the t3 score for the non-repeated conditions (4.77) ($t_{264} = 3.42$; $p < .01$, for a one-tailed test).

A final bit of evidence that this is in fact motivated reasoning comes from a question that asked respondents who received a frame in the OL conditions to assess the effectiveness of the frames (on a 7-point scale). If motivated reasoning is occurring, we should see a decline in effectiveness scores upon exposure to the counter-frames. In the repetition conditions, we see this with the respective scores at each time being 4.91 (1.63; 130), 4.44 (1.46; 130), and 4.07

[17] We might expect the certainty effect to manifest particular in the con counter-frame condition since that is where repetition affected valence. However, we do not find significant differences between the two repeated counter-frame memory-based conditions.

(1.78; 130). It is interesting that there is a significant drop not only from t1 to t2 ($t_{129} = 2.13$; $p < .05$, for a one-tailed test) but also from t2 to t3 ($t_{129} = 2.52$; $p < .01$, for a one-tailed test). In contrast, we do not see a drop from t1 to t3 for the non-repetitive conditions, again indicating decay, less motivated reasoning, and greater counter-frame success (the scores are 4.50 (1.52; 139) and 4.48 (1.73; 139)).

Conclusion

Our starting point in studying the effectiveness of counter-framing is that all framing effects will decay. As the effects of earlier communications fade, individuals become newly susceptible to opinion change. Thus the effectiveness of communications is tied to their timing.

A critical qualification is that the rate of decay varies depending on how individuals process information. On-line processors tend to form stronger attitudes than memory-based processors. Strong attitudes decay gradually and persist longer; when strong attitudes are accessible, counter-frames are rejected and may even serve to reinforce the original attitude. Ironically, discussion of competing positions can lead to polarization of opinions if participants engage in counter-arguing and motivated reasoning. However, with more elapsed time between discussions of the issue, a counter-frame has greater potential to change attitudes. Delayed counter-framing potentially allows the original attitude to weaken sufficiently and become susceptible to a contrary argument.

Given the moderating effects of processing mode, a communications strategy that is effective overall may be impossible as tactics that are effective on those who have weak attitudes may be counterproductive on those who have a strong viewpoint. Optimal strategies therefore depend on audiences. If most voters are MB processors, then it pays to dominate the media in the latter stages in the campaign. If most voters are OL processors, then it is better to start one's campaign early and solidify one's position periodically if resources permit.

Although quick counter-framing failed among OL individuals, it was effective among MB individuals and those who were not manipulated in the experiment. The MB and no-manipulation groups responded favorably to the counter-frame at both t2 and t3; moreover, the effectiveness of the t3 frame was not undercut by previous t2 exposure to the same counter-frame. In addition to moving the opinions of MB and non-manipulated respondents in the direction of the counter-frame, the repetition of the counter-frame increased attitude certainty.

There was also evidence in our experiment that repetition of the frame enhanced its impact in these two groups of respondents, although the schedule of repetition probably matters. We suspect a lengthier delay (than the interval used in the experiment) between repeating the counter-frame could allow any initial counter-framing effect to decay among MB respondents; therefore, if t2 and t3 are sufficiently far apart, there is unlikely to be any cumulative effect from repeated exposure to the counter-frame.

Strategies also depend on resources. Making one's case too early can be susceptible to a counter campaign if the original position cannot be reinforced owing to lack of resources. If the other side has limited resources and expends them in an early campaign, it is more prudent to go last.

Of course if adequate resources are available, it is always best to saturate the media – early and often -- with the strongest arguments for one's position. Given the strategic dynamics of competition, each side will want to establish its position first. If one side is slow off the mark, it should seek a way to counterattack that does not inadvertently strengthen the attitude it is challenging. An alternative strategy to waiting is to develop appropriate counter-frames that can weaken confidence in the original rationale for the t1 attitude. This might be possible by constructing arguments that protect and enhance the values of the individuals one is trying to win

over. If resigned to a counter-framing strategy, the strength of the frame and its ability to undermine the dominant frame becomes a critical quality.

Once again, our results remind us of the difficulty of initiating open-minded deliberation on the issues among motivated individuals. Repetition of competing frames may only prove to fortify existing attitudes, and increase the tendency to discount and disagree with alternative frames. A striking aspect of the experimental results is that online respondents quickly closed themselves off from new frames on the Patriot Act issue. The path to motivated reasoning among OL respondents in the experiment began innocently enough with random assignment to receive either the Pro or Con frame accompanied by an instruction to review the communication carefully with the intent of forming an evaluation. But this simple manipulation was sufficient to cause initial attitudes toward the Patriot Act to persist for over 3 weeks as OL respondents were hardly budged by two exposures to a new frame that raised relevant considerations against their original stance. Once a strong initial attitude was formed, it was subsequently defended against contrary frames instead of being updated as new information was received.

On a more positive note, OL respondents who received a counter-frame only at t3 ended up in a more moderate or balanced position between competing arguments, which suggests they were integrating information received at t1 and t3. They did not swing fully to the side of the counter-frame in contrast to MB respondents and, to a lesser degree, the respondents who were not manipulated. Less encouraging is our finding that individuals in the last two groups gave no evidence of cumulative learning. Instead, they crisscrossed positions depending on which frame they received first and which they received last (either in t2 and t3 or in t3 alone). The simple order of arguments dominated their substantive content. It is even more sobering that these are likely to be the swing voters who decide elections.

In terms of political power, the results show that identifying which party is most powerful in shaping opinions is far from straightforward and is, instead, highly contingent. It depends not only on the nature of the frames employed, but also on their timing and repetition – two factors whose influences are in turn dependent on the nature of the audience. Our findings reveal that, as a baseline, delaying counter-framing can be effective and repetition can be ineffectual. How these factors play out in more varied competitive environments is what future research needs to explore.

Any communications strategy has to take account of the calculations and choices of each side in the debate. While one side waits to counter, the other side has an opportunity to reinforce existing attitudes. Druckman et al. (2011) report that repeated exposure to a consistent frame strengthens opinions and promotes stability. Thus, future work should explore what happens when the repetition of the initial frame competes over-time with the counter-frame. There may also be a significant tendency for individuals to selectively expose themselves to frames that cohere with their prior opinions rather than look at counter-frames (Druckman et al. 2011). This will strengthen prior attitudes further and ensure greater stability and resistance to opposing views. Another factor to consider is that opinions not only decay at varying rates across individuals depending on how they process information, but individual opinions on issues will be at different stages of decay at any point in the campaign. We mention these scenarios to emphasize the complexity of any over-time competitive campaign context. Uncovering these types of dynamics should define the next generation of political communications research.

Appendix

Condition Means at Each Time

Condition	t1	t2	t3
1 OL SC-None-SP (N = 70)	3.47 (std. dev: 1.73)	3.59 (1.68)	4.41 (1.60)
2 MB SC-None-SP (70)	3.69 (1.67)	4.47 (1.70)	5.11 (1.44)
3 No Man. SC-None-SP (63)	3.90 (1.76)	4.21 (1.87)	5.17 (1.42)
4 OL SP-None-SC (69)	5.06 (1.63)	5.03 (1.57)	4.17 1.65)
5 MB SP-None-SC (63)	5.17 (1.67)	4.27 (1.77)	3.71 (1.89)
6 No Man. SP-None-SC (69)	5.12 (1.45)	4.57 (1.52)	3.90 (1.90)
11 OL SC-SP-SP (65)	3.71 (1.49)	3.97 (1.36)	4.08 (1.45)
12 MB SC-SP-SP (75)	3.88 (1.66)	4.91 (1.44)	5.04 (1.38)
13 No Man.SC-SP-SP (62)	3.76 (2.01)	4.52 (1.86)	4.77 (1.73)
14 OL SP-SC- SC (65)	5.08 (1.63)	4.86 (1.72)	4.88 (1.64)
15 MB SP-SC-SC (51)	5.08 (1.70)	3.78 (1.77)	3.00 (1.74)
16 No Man. SP-SC-SC (72)	5.14 (1.54)	4.28 (1.71)	4.17 (1.74)

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Table 1: Experimental Conditions

Condition	Induced Processing Mode	T1 Frame	T2 Frame	T3 Frame
1	On-Line	Civil liberties (SC)	None	Terrorism (SP)
4	On-Line	Terrorism (SP)	None	Civil liberties (SC)
11	On-Line	Civil liberties (SC)	Terrorism (SP)	Terrorism (SP)
14	On-Line	Terrorism (SP)	Civil liberties (SC)	Civil liberties (SC)
2	Memory-Based	Civil liberties (SC)	None	Terrorism (SP)
5	Memory-Based	Terrorism (SP)	None	Civil liberties (SC)
12	Memory-Based	Civil liberties (SC)	Terrorism (SP)	Terrorism (SP)
15	Memory-Based	Terrorism (SP)	Civil liberties (SC)	Civil liberties (SC)
3	None	Civil liberties (SC)	None	Terrorism (SP)
6	None	Terrorism (SP)	None	Civil liberties (SC)
13	None	Civil liberties (SC)	Terrorism (SP)	Terrorism (SP)
16	None	Terrorism (SP)	Civil liberties (SC)	Civil liberties (SC)

Table 2: Impact of Time Lag On Counter-Framing Effectiveness

Induced Processing Mode	**Frames**	**Over-Time Change Short Lag (T2-T1)**	**Over-Time Change Long Lag (T3-T1)**	**Absolute Difference**
On-Line	SC-SP	0.26 (cond. 11)	0.94 (1)	0.68***
On-Line	SP-SC	-0.22 (14)	-0.88 (4)	0.66***
Memory-Based	SC-SP	1.03 (12)	1.43 (2)	0.40*
Memory-Based	SP-SC	-1.29 (15)	-1.46 (5)	0.17
None	SC-SP	0.76 (13)	1.27 (3)	0.51*
None	SP-SC	-0.86 (16)	-1.22 (6)	0.36

***p<.01; **p<.05 ; *p<.1 for one-tailed tests.

Table 3: Impact of Repetition On Counter-Framing Effectiveness

Induced Processing Mode	Frames	Over-Time Change No Repetition (T3-T1, with no T2 frame)	Over-Time Change Repetition (T3-T1, with T2 frame)	Absolute Difference
On-Line	SC-None/SP-SP	0.94 (1)	0.37 (11)	0.57**
On-Line	SP-None/SC-SC	-0.88 (4)	-0.20 (14)	0.68***
Memory-Based	SC-None/SP-SP	1.43 (2)	1.16 (12)	0.27
Memory-Based	SP-None/SC-SC	-1.46 (5)	-2.08 (15)	0.62**
None	SC-None/SP-SP	1.27 (3)	1.02 (13)	0.25
None	SP-None/SC-SC	-1.22 (6)	-0.97 (16)	0.25

***p<.01; **p<.05 ; *p<.1 for one-tailed tests.

Table 4: Attitude Certainty Over-Time

Induced Processing Mode	**Time 1**	**Time 2**	**Time 3**
On-Line	5.34 (1.52; 269)	5.48 (1.38; 269)	5.58 (1.27; 269)
None	5.03 (1.43; 266)	5.01 (1.50; 266)	5.08 (1.45; 266)
Memory-Based	4.47 (1.74; 259)	4.43 (1.67; 259)	4.61 (1.52; 259)

Table 5: Attitude Certainty and Repetition

Induced Processing Mode	**Time 1**	**Time 2**	**Time 3**
On-Line No Repetition	5.25 (1.67; 139)	5.30 (1.48; 139)	5.36 (1.30; 139)
On-Line Based Repetition (i.e., T2 Frame)	5.42 (1.33; 130)	5.67 (1.24; 130)	5.82 (1.18; 130)
Memory-Based No Repetition	4.37 (1.90; 133)	4.34 (1.80; 133)	4.42 (1.52; 133)
Memory-Based Repetition (i.e., T2 Frame)	4.57 (1.55; 126)	4.53 (1.52; 126)	4.80 (1.51; 126)
None No Repetition	4.96 (1.52; 132)	4.90 (1.60; 132)	4.77 (1.55; 132)
None Repetition (i.e., T2 Frame)	5.11 (1.35; 134)	5.11 (140; 134)	5.37 (1.30; 134)

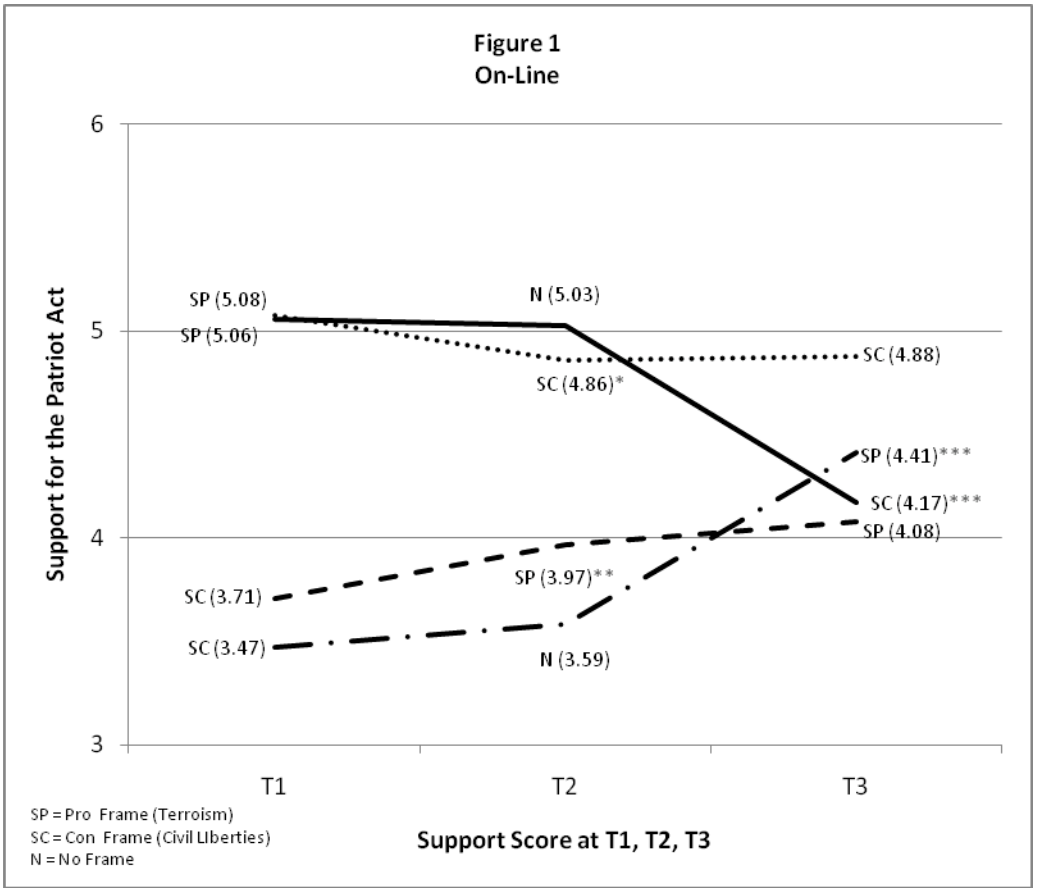
Figure 1
On-Line
6
5
4
3
Support for the Patriot Act
SP (5.08)
SP (5.06)
N (5.03)
SC (4.88)
SC (4.86)*
SP (4.41)***
SC (4.17)***
SP (4.08)
SP (3.97)**
SC (3.71)
SC (3.47)
N (3.59)
T1
T2
T3
SP = Pro Frame (Terroism)
SC = Con Frame (Civil Liberties)
N = No Frame
Support Score at T1, T2, T3

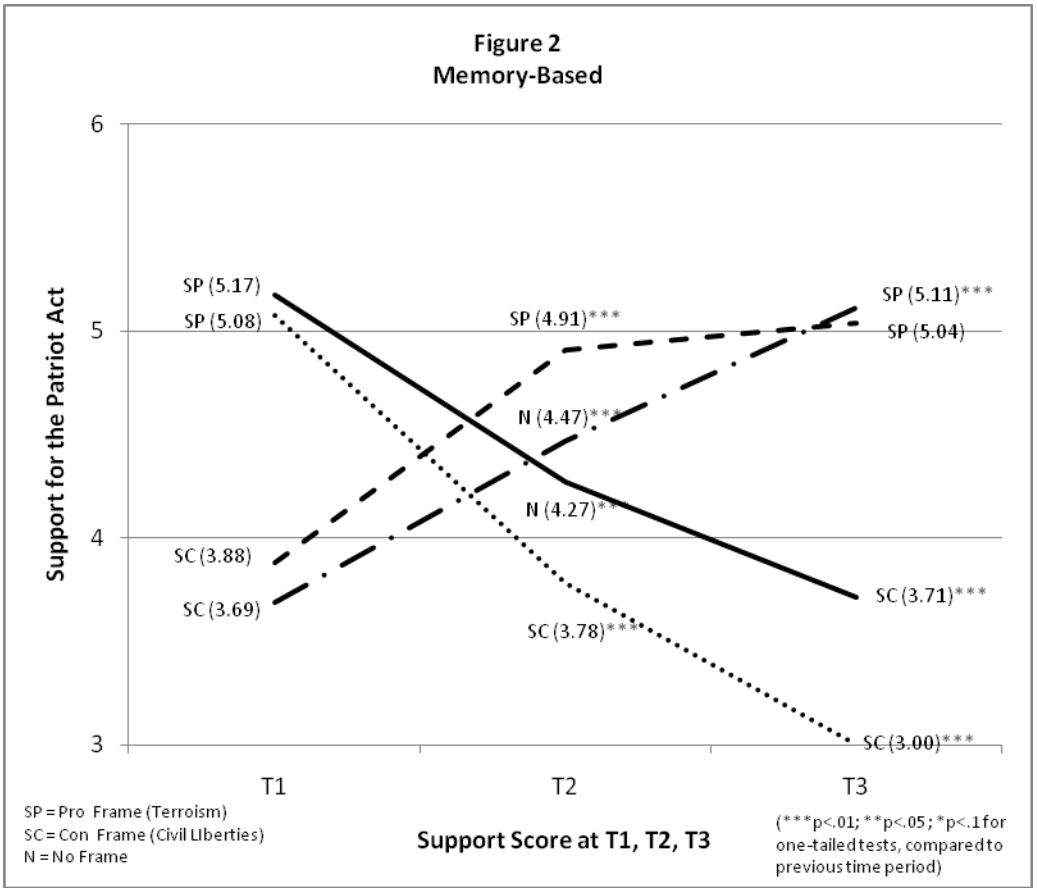
Figure 2
Memory-Based
6
5
4
3
Support for the Patriot Act
SP (5.17)
SP (5.08)
SP (4.91)***
SP (5.11)***
SP (5.04)
N (4.47)***
N (4.27)**
SC (3.88)
SC (3.69)
SC (3.71)***
SC (3.78)***
SC (3.00)***
T1
T2
T3
SP = Pro Frame (Terroism)
SC = Con Frame (Civil LIberties)
N = No Frame
Support Score at T1, T2, T3
(***p<.01; **p<.05; *p<.1 for one-tailed tests, compared to previous time period)

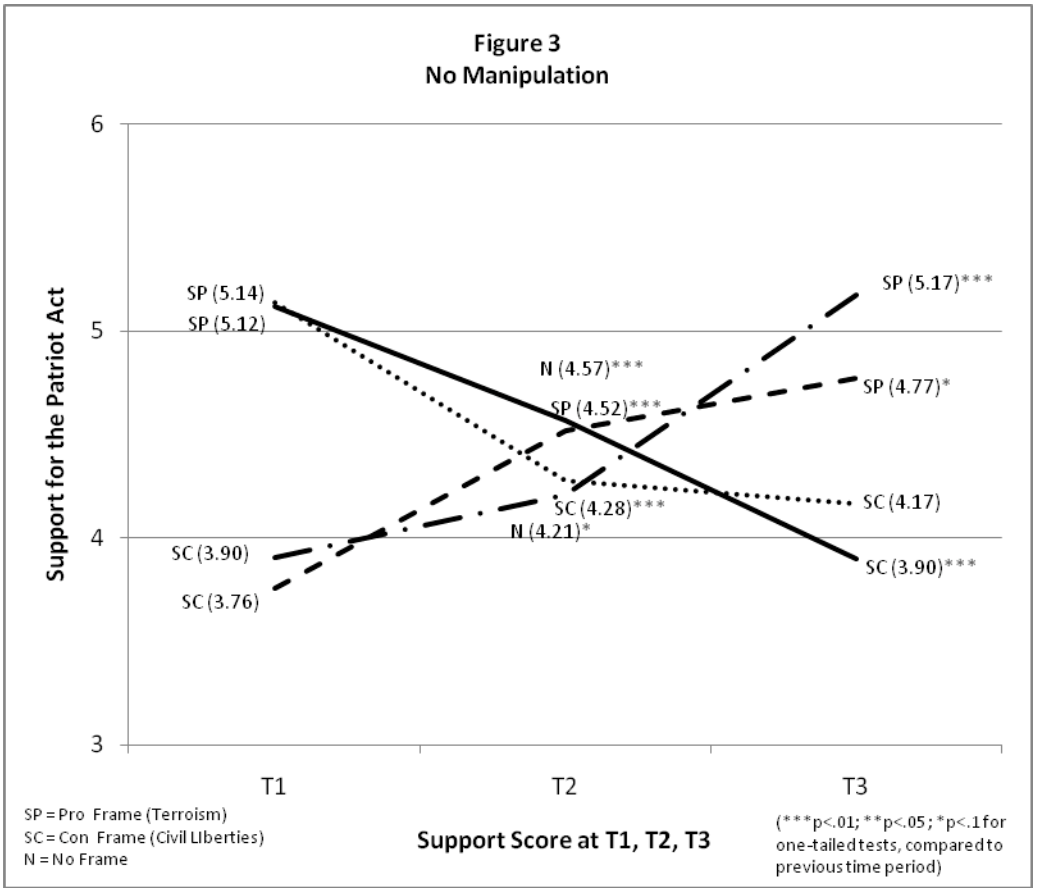
Figure 3
No Manipulation
6
5
4
3
Support for the Patriot Act
SP (5.14)
SP (5.12)
N (4.57)***
SP (4.52)***
SP (5.17)***
SP (4.77)*
SC (4.17)
SC (4.28)***
N (4.21)*
SC (3.90)
SC (3.76)
SC (3.90)***
T1
T2
T3
SP = Pro Frame (Terroism)
SC = Con Frame (Civil LIberties)
N = No Frame
Support Score at T1, T2, T3
(***p<.01; **p<.05; *p<.1 for one-tailed tests, compared to previous time period)