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Reframing the Casualties Hypothesis:  
(Mis)perception of Troop Loss and Public Opinion About War

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## ABSTRACT

The casualties hypothesis predicts that as the casualties suffered by a nation mount during a military intervention, public opinion will turn against the intervention and its people will demand troop withdrawal. We use the U.S. war in Iraq as a context for testing the *perceived casualties hypothesis*, which predicts that public beliefs about the actual number of casualties account for public opinion about a military intervention independent of the number of casualties actually suffered. Using data from several thousand respondents to telephone surveys conducted by the Pew Research Center for the People and the Press in 2005 and 2006 as well as data on the number of U.S. casualties suffered as of the date of interview, we find that relative to correct estimators and underestimators, respondents who believed the U.S. had suffered more casualties than had really occurred were most supportive of withdrawing troops from the conflict. Attention to the news predicted accuracy in one's beliefs about the number of casualties, but not opinion about the intervention (when accounting for perceptions of the number of casualties suffered), suggesting that accuracy of one's knowledge mediates the effect of attention to the news on public opinion. Ancillary analyses answer the question as to who is paying attention to the news about the war and who is more likely to have accurate knowledge of casualties.

REFRAMING THE CASUALTIES HYPOTHESIS:

(MIS)PERCEPTIONS OF TROOP LOSS AND PUBLIC OPINION ABOUT WAR

In 1922, Walter Lippmann proposed the following hypothetical in his book, *Public Opinion*:

There is an island in the ocean where in 1914 a few Englishmen, Frenchmen, and Germans lived. No cable reaches that island, and the British mail steamer comes but once in sixty days...It was, therefore, with more than usual eagerness that the whole colony assembled at the quay on a day in mid-September...They learned that for over six weeks now those of them who were English and those of them who were French had been fighting in behalf of the sanctity of treaties against those of them who were Germans. For six strange weeks they had acted as if they were friends, when in fact they were enemies. (p. 1).

In this foundational work on public opinion, Lippmann articulates the idea that people's opinions and actions are driven by their *understanding* of what is happening, not by the *actuality* of events. As he states, "we can best understand the furies of war and politics by remembering that almost the whole of each party believes absolutely in its picture of the opposition, that it takes as fact, not what *is*, but what it *supposes* to be the fact" (p. 4, emphasis added). In other words, our attitudes and behavior are influenced as much, more so, or perhaps even exclusively by what we believe to be so rather than what is actually so.

In this study, we apply Lippmann's important insight to testing the casualties hypothesis—that the public's willingness to remain engaged in a military intervention declines as casualties mount—but we do so focusing not on objective counts of casualties accrued, as have others before us, but instead on the public's *beliefs*, right or wrong, about how many casualties have occurred at a given point in time.<sup>1</sup> In the context of the U.S. war in Iraq, we show that there

is important individual-level variance in peoples' beliefs about how many casualties the U.S. has suffered. Specifically, beliefs about how many casualties have occurred are related to a person's willingness to remain engaged in the conflict even after accounting for how many casualties have actually occurred. These findings provide further support to claims (at least in the U.S.) that the public is casualties averse, while at the same emphasizing that what people believe about reality plays a role in shaping public opinion independent of the objective reality.

#### EXISTING RESEARCH TESTING THE CASUALTIES HYPOTHESIS

Troop fatalities have been shown to be related to a variety of outcomes. Wartime casualties reduce the legitimacy and political capital of state leaders across the world (Eichenberg, Stoll, & Lebo, 2006, Jackman, 1993; Stam, 1966). This lack of legitimacy can then lead to an inability for those leaders to maintain power; Bueno de Mesquita and Siverson's (1995) analysis of all wars starting between 1816 and 1975 demonstrates that the number of battle deaths is negatively related to the ability of leaders/regimes to stay in authority, especially in democracies (see also Bueno de Mesquita, Siverson, & Woller, 1992). Central to these effects is the idea that wartime casualties influence public opinion, both about the war and about the political leaders of a nation. Democratic peace arguments assert that this threat of casualties' negative consequences for those in power exerts a pacifying influence upon democracies (see Ray, 1995; Reiter & Stam, 1998; Russett, 1993).

Of central interest to the study reported here is Mueller's (1973) theory of wartime public opinion, based on his analysis of the Vietnam and Korean wars and labeled by Burk (1999) the "casualties hypothesis." The casualties hypothesis, in its simplest form, states that as casualties mount, public support for the intervention will decline, eventually leading to demands for troop withdrawal (Mueller, 1973). Mueller demonstrates empirical support of these claims in his

analyses of the Vietnam and Korean wars, and further studies have extended these findings to more recent conflicts. Larson (1996) summarizes some of the earlier evidence that the rise of cumulative casualties explains declining war support in conflicts such as Panama, Somalia, and the Gulf War (for more recent research, see Burk, 1999; Gartner and Segura, 1998; Klarevas, Gelpi, and Riefler, 2006; Kriner, 2006; Mueller, 1994).

The premises forwarded by Mueller (1973) have sparked much academic interest in the past 30 years, culminating in the Roper Center for Public Opinion Research conferring the first Warren J. Mitofsky Award for Excellence in Public Opinion Research to Dr. Mueller for his book *War, Presidents, and Public Opinion*. Clearly, the ideas forwarded in this work have had a significant effect on the way we understand war and society. We contend, however, that it is essential to consider the role of perceptions in understanding wartime public opinion rather than to focus solely on actual wartime casualties, as this line of research has tended to do. At its core, the casualties hypothesis is driven by the idea that mounting casualties translate into declining public support for a military intervention. Traditionally, the mechanisms by which this process occurs have remained unspecified. Essentially, it is assumed that the public responds to the “objective reality” of the actual number of casualties at a given time, earning it the label of an “event-driven” hypothesis by Berinsky (2007). Neglecting the role of perceptions in the public opinion process disregards important means by which opinions may vary between individuals (as also noted by Voeten & Brewer, 2006). Extant studies considering the casualties hypothesis often focus on aggregate opinion, demonstrating that at a national level opinion tracks casualties. This approach leaves the significant range of opinion across individuals unaccounted for (Herbst, 1999); that is, scholars conceptualizing the casualties hypothesis in the traditional way of national aggregate data are unable to account for the fact that although at any point in time the

*actual* number of casualties is a constant across individuals, cross-sectional variation in individual's attitudes remains (see Berinsky, 2007; Gartner and Segura, 1998; Gartner, Segura, and Wilkening, 1997).

Although there are no doubt many predictors of individual differences in opinion, it is likely that some of this variation is due to dissimilarity in individuals' beliefs about the number of casualties that have been suffered. The traditional assumption, that there is a one-to-one correspondence between the actual number of casualties that have occurred and individuals' perceptions of how many casualties have occurred, is questionable. We do not make that assumption here. Instead, we believe it is more probable that there is variation among members of the public in regards to their knowledge of how many casualties have occurred (see also Berinsky, 2007) and it has been found that the American public is largely mistaken about the number of casualties suffered (Berinsky, 2007; Boettcher and Cobb, 2006). Difference in knowledge levels is not unique to casualty counts, however. Delli Carpini and Keeter's (1996) comprehensive study of political knowledge affirms that there is a large range of levels of general political knowledge among the citizenry (see also Converse, 1964; Kinder, 1998; Schumpeter, 1950). Furthermore, several studies have explicitly found that the American public differs greatly in their knowledge of the events of the Iraq war. Kull, Ramsay, and Lewis (2003-2004), for instance, found that 60% of the public had one or more key misperception about the war in Iraq (that weapons of mass destruction had been found, that a clear link existed between al Qaeda and Iraq, and that world opinion favored US intervention in Iraq). We expect that this variation between individuals' perceptions of the number of casualties that have occurred will lead to differences in their assessment of the war.

Perceptions are central to how we interact with the social world. At the most basic level, of course, we do not directly observe what is happening around us. Rather, we perceive the world indirectly through our senses and the processing of sensory input in the brain, conditioned by prior learning, context, and other factors (Wyer and Ottai, 1993). These other factors may include personal experience, the mass media, or interpersonal communication. In the case of the events of war, the mass media most commonly act as the central conduit of information between the theater of warfare and the public. Coverage of these wartime events may depend on editorial judgments about the importance of those events (Benson, 2004; Schudson, 2002) along with what else is going on in the world at the time (Downs, 1972). Furthermore, individuals vary in their exposure to news about the war by the extent to which they attend to foreign affairs news (Zillman and Bryant 1985). Finally, as discussed by Gaines, Kuklinski, Quirk, Peyton, & Verkuilen (2007), even if it is assumed that individuals update their factual beliefs with the information that becomes available to them, *interpretation* and *application* of these beliefs can depend on other beliefs and attitudes; so that a given wartime event – even if it is acknowledged by both sides as being factual – may have vastly different interpretations (e.g. 1,000 troop fatalities may be deemed excessively large by those opposed to a war’s aims, but comparatively small by those in support of the war’s aims).

Our point is that it is not the events of war that directly drive public opinion, but instead perceptions of those events after they are selected by the media as newsworthy, filtered and framed by the producers of news, and finally attended to and processed by the individual. The kinds of processes described above will influence which events make it to public consciousness and how they are construed. Furthermore, there is likely to be vast individual differences in which events register in a person’s consciousness with greater as opposed to less fidelity. It is

likely that this variation is at least partially attributable to an individual's attention to news about a war (see Berinsky, 2007; Gartner, 2004; Karol and Miguel, 2007; Larson, 1996), especially as the mass media represent the most pervasive manner by which individuals gain information about foreign policy, including military interventions (Althaus, 2002; Page and Shapiro, 1992; Powlick and Katz, 1998). In the context of the Iraq war, media across the world have kept their consumers updated about the progress of the war, the number of casualties, and their own government's response. On February 2, 2005, an Australian paper recorded the countries' first casualty of the war with the headline "An Australian Life Lost in Iraq." Papers in the U.S. and U.K often feature the casualty count; an Albany, New York paper announced: "3,000 and How Many?" (2007, January 3), while London's *Gaurdian* reported: "The Milestone They Dreaded: The Number of British Soldiers Killed in Iraq Reached the Landmark Figure of 100 Yesterday" (Gillan, 2006). Individuals habitually reading these headlines are likely to be accurate in their perception of the number of casualties, while those not attending to this news have a higher probability of holding some other perception of the number of casualties. However, most of the literature that has examined wartime public opinion has neglected the role of perceptions in the process, placing actual events as the impetus for opinion change rather than people's understanding of those events. In the study reported here, we address that oversight in the corpus of literature.

It is true that several scholars have begun to offer more nuanced perspectives of this casualties hypothesis. One such perspective is the role of recent and local casualties. Analyses of public opinion during the Vietnam, World War II, and Iraq wars have demonstrated that local, recent casualties have an effect on opinion over and above the effect of national, cumulative casualties (Gartner and Segura, 1998; Gartner, Segura, and Wilkening, 1997; Author Citation, in

press). Similarly, recent trends in the amount of casualties have been found to influence opinion (Gartner, 2008a; Gartner 2008b). Furthermore, elite discourse and media framing have been suggested as ways that individual's interpret information about casualties (Berinsky, 2007; Gelpi, Feaver, & Reifer, 2005/6). These arguments move beyond the traditional method of conceptualizing and assessing the casualties hypothesis and are consistent with the argument that we make here; that an individual's perception of the number of casualties influences their opinion. We offer an explicit test of whether these perceptions do influence opinion above and beyond the number of actual casualties.

## METHOD

### The Data Sets

Three data sets, the June 2005, April 2006, and December 2006 News Interest Index Surveys, collected by Princeton Data Source, LLC on behalf of the Pew Research Center were aggregated for analysis. The Pew Center for People and the Press<sup>2</sup> has conducted multiple telephone surveys of American adults using standard *list-assisted random digit dialing* (RDD) methodology since the beginning of the Iraq invasion; these surveys measure public opinion about the invasion and the war effort, attention to news about the Iraq war, and demographic data. Of these surveys, the three chosen also included measurement of individual's perceptions of the number of troop casualties. In total, these three data sets contained 4,467 respondents (1,464 from the June 2005 set – a 29% response rate, 1,501 from the April 2006 set – a 28% response rate, and 1,502 from the December 2006 set – a 24% response rate).<sup>3</sup>

### Estimation of Casualties

Estimation of the number of troop casualties was measured with questions that were comparable across all three data sets, the stem of which read: “Since the start of military action

in Iraq, about how many U.S. soldiers have been killed? To the best of your knowledge, has it been?” The response options varied across time, as did the objectively correct answer, reflecting changes in the actual number of casualties over time. In June 2005 the response options were: “under 500, 500 to 1000, 1000 to 2000 (correct answer), or more than 2000?”; in April 2006 they were: “around 500, around 1,500, around 2,500 (correct answer) or around 3,500 military deaths in Iraq?”; and in December 2006 the options were: “around 1,000, around 2,000, around 3,000 (correct answer), or around 4,000 military deaths in Iraq?” Responses to these questions were coded into two separate variables: *general accuracy* and *directional inaccuracy*.

*General Accuracy.* Individuals who chose the correct number of casualties were classified as *accurate estimators* whereas individuals who had chosen any other option, including “don’t know” or nonresponse, were classified as *inaccurate estimators*. Aggregating over time, 54.6% of respondents correctly identified the number of casualties. General accuracy varied over time,  $\chi^2(2, N = 4,467) = 18.835, p < .001$ , such that accuracy was lower in December 2006 (50.1%) when compared to June 2005 (57.4%) and April 2006 (56.2%)

*Directional Inaccuracy.* In addition to general accuracy, each respondent was classified to reflect the direction of inaccuracy, if any, in his or her estimate of casualties. Respondents who chose the response option that was larger than the number of actual casualties were classified as *overestimators* (19% of the sample aggregating over time) whereas those who chose an option reflecting fewer casualties than reality were classified as *underestimators* (23% of the sample over time). Those who chose the response option that had the actual number of casualties were classified as *correct estimators* (58% of the sample over time). Participants who said they did not know or refused to answer were excluded for all analyses involving this variable as they could not be coded for either their directional inaccuracy or their accuracy; for this reason the

percentage of correct estimators differs slightly on this variable compared with general accuracy. As noted earlier, accuracy was lower in December 2006 compared to the other two times of data collection. Thus, not surprisingly, directional inaccuracy also varied over time,  $\chi^2(4, N = 4,164) = 109.850, p < .001$ , largely as a result of the tendency for respondents to be more likely to underestimate (31.2%) and less likely to overestimate (14.5%) in December 2006 compared to June 2005 (16.2% and 23.4% for under- and overestimates, respectively) and April 2006 (20.2 and 19.0% for under- and overestimates, respectively).

### Opinions about and Perceptions of the Iraq War

The primary dependent variables in this study are an individual's opinions about the presence of troops, the wisdom of the decision to invade Iraq, and perceptions of the progress of the war.

*Support for Troop Withdrawal.* Public opinion about whether troops should remain in the conflict or be withdrawn is central to the casualties hypothesis. This was measured with the question (worded consistently over time): "Do you think the U.S. should keep military troops in Iraq until the situation has stabilized, or do you think the U.S. should bring its troops home as soon as possible?" As our focus was on a withdrawal response, the latter response was counted as a "withdraw troops" response, and any other response (including "don't know" and nonresponse, which accounted for 4.9% of the responses) was counted as providing an opinion other than supporting troop withdrawal. Aggregating over time, 45.3% of respondents supported troop withdrawal, with no evidence of variation over time,  $\chi^2(2, N = 4,467) = 1.641, p > .20$ .

*Progress of the War.* To quantify respondents' beliefs about the progress or execution of the war, the participants were asked (consistently-worded over time) "How well is the U.S. military effort in Iraq going?" The response options included "not at all well," "not too well,"

“fairly well,” and very well.” Coding each response from 1 to 4 respectively, the mean response was 2.30 ( $SD = .94$ ), nearest to “not too well”, although the modal response was “fairly well.” (34.8%) Again, responses varied over time,  $\chi^2(6, N = 4,302) = 163.994, p < .001$ , with a greater percentage of respondents claiming the war was going “not at all well” or “not too well” in December 2006 (67.8%) compared to earlier (48.8% and 49.9% in June 2005 and April 2006, respectively).

*Support for Decision to Invade Iraq.* Participants were also asked about the wisdom of invading Iraq in the first place. The question was phrased “Do you think the U.S. made the right decision or the wrong decision in using military force against Iraq?” Our focus in the analysis was estimating the likelihood of someone saying it was the wrong decision. Collapsing across time, 47.7% of respondent’s believed the invasion was the wrong thing to do. Any other response, including “don’t know” and nonresponse (which combined accounted for 6.9% of responses), was conceptualized as *not* stating a belief that it was the wrong decision. Responses to this question did vary over time,  $\chi^2(2, N = 4,467) = 9.511, p < .01$ , with slightly more people saying it was the wrong decision in December 2006 (50.9%) compared to earlier (45.6% and 46.4% in June 2005 and April 2006, respectively).

### Cumulative National Casualties

For each respondent, we constructed a variable quantifying the cumulative number of U.S. military personnel killed in Iraq, as of the date of the respondent’s interview, since the invasion on March 20, 2003. Date of interview is provided by Pew for all survey respondents in their public data files. The casualties data were obtained from a database compiled at <http://icasualties.org> from Department of Defense press releases. This database contains information about each U.S. casualty including name, location of residence, date of death, and

means of death, if known. We excluded deaths to military personnel whose location or residence was recorded as somewhere other than one of the 50 U.S. States. From this data file, a new file was constructed that contained the cumulative number of casualties for each day of the war since the invasion on March 20<sup>th</sup>, 2003. This file was then merged into the survey data file, matching the cumulative deaths data file to the survey data using the date of interview as the matching variable. To be consistent with Mueller's argument (1973, as well as subsequent research, e.g., Larson, 1996; Mueller, 1994) that casualties influence opinion less as they mount, we use the natural logarithm of cumulative deaths in all models described below<sup>4</sup>.

#### Attention to War News

Attention to news about the war in Iraq was measured with one question: "As I read a list of some stories covered by news organizations this past month, tell me if you happened to follow each news story very closely, fairly closely, not too closely, or not at all closely. First, news about the current situation in Iraq." Responses were coded on a four point ordinal scale, with "1" corresponding to "not too closely" and "4" to "very closely." The mean response was 3.22 ( $SD = .86$ ), nearest to "fairly closely." On the whole, respondents reported attending to the news about Iraq very closely or closely (82.3% of responses), with no evidence of variation in response over time,  $\chi^2(6, N = 4,444) = 7.348, p > .20$ .

#### Miscellaneous Demographic and Political Control Variables

In all analyses, we statistically controlled for respondent sex, age, level of education, political party identification, political ideology, and race. Sex was coded by the interviewer and dummy coded (with males high) in all analyses (47.4% male). Age was measured with the question: "What is your age?" Responses 97 or over were coded (by Pew) as 97 years old ( $M = 50.44$  years,  $SD = 17.39$ ). Education level was measured with the question: "What is the last

grade or class that you completed in school?” with ordinal response options ranging from “1: None or Grade 1-8” to “7: Post-graduate training or professional schooling after college.” The mean response was 4.67 ( $SD = 1.63$ ), nearest to “some college.” Race was measured with the question: “What is your race? Are you White, Black, Asian, or some other?” Race was treated as a dummy variable in all analyses with “Whites” (85.4%) coded high. Political ideology was measured with the question: “In general, would you describe your political views as “very conservative,” “conservative,” “middle of the road,” “liberal,” or “very liberal?” Responses were coded on a five point ordinal scale, with “1” corresponding to “very conservative” and “5” to “very liberal.” The mean response was 2.81 ( $SD = .96$ ), nearest to “middle of the road.” Political party identification was coded for each respondent using responses to two questions. All respondents were asked “In politics TODAY, do you consider yourself a Republican, Democrat, or Independent”? Respondents who claimed they were “Independent” and those who volunteered either no preference, stated some other party, or who didn’t know or refused were then asked “As of today, do you lean more toward the Republican Party or more to the Democratic Party?” A participant was coded as Republican if s/he reported being a Republican or leaning toward the Republican Party, or a Democrat if s/he reported being a Democrat or leaning toward the Democratic Party. Anyone who responded “Independent” or “No preference” to the first question and who reported not leaning toward either party, or refused the second question was coded as an Independent. Party identification was coded with two dummy variables (Democrats and Republicans) in all analyses, with Independent as the reference category. Using this procedure, 41.7% of respondents were classified as Republican, 49.2% Democrat, and 9.1% Independent.

#### Handling of Missing Data

As is typical in survey research, some questions were not answered by some respondents. Rather than lose these cases entirely from the analyses by the use of listwise deletion at the analysis stage, we used a hot-deck imputation procedure (Little and Rubin, 2002) for imputing missing values when they occurred on predictor variables in the analysis. Hot-decking, or imputing missing values by randomly copying the values from other “similar” cases, is the method recommended by Hawthorne and Elliot (2005) for cross-sectional data; they found that hot-decking was over 80 times more effective than listwise deletion in their comparison of various ways to handle missing data (see also Nordholt, 1998). We used the respondent’s state and sex as the variables for creating the hot decks. That is, when a case was missing on a variable, we randomly assigned to that case a value from other respondents from that state and of the same sex (two variables that were never missing), using the probability distribution of the observed responses for assigning the missing value. The state of each respondent was derived from the Federal Information Processing Standard (FIPS) code provided for all respondents by the Pew Center in their public data files.

Most respondents (92.1%) did not require any imputation. The variable most frequently requiring imputation was political ideology (4.6% of respondents). The remaining predictor variables with some missing data, such as political party identification, age, education, race, and attention to Iraq war news, were imputed only rarely (less than 2% of cases). To deal with the possibility that cases who were missing might have differed systematically in their response on the outcome variable one or more analysis, we created six dummy variables that were used as additional predictor variables in all models, coding whether a case was imputed (0 = no, 1 = yes) on that variable.

In no analysis reported below did we impute missing data on a variable in an analysis when it was used as the outcome variable. For responses to troop withdrawal and the wisdom of the decision to invade Iraq, nonresponse and “don’t knows” were treated as valid data and coded as described above. Nevertheless, for analyses involving these outcomes, a dummy variable coding whether the respondent provided a response (rather than saying don’t know or refusing) was constructed and used as a predictor in the corresponding analysis of that outcome variable.

## RESULTS

The casualties hypothesis states that as the number of casualties suffered by U.S. troops increases, support for foreign military intervention is likely to decrease. However, as previously argued, it is unlikely that there is a one-to-one correspondence between *actual* and *perceived* casualties. Indeed, as revealed above, just under half of the respondents could not identify the correct number of casualties suffered within a certain range of error. But who holds mistaken beliefs about the number of casualties? And among those who are inaccurate, what predicts the direction of inaccuracy?

### Who is Misperceiving Casualties?

To answer these questions we estimate accuracy (both general and directional inaccuracy) from attention to news along with statistically controlling for all the demographic and political variables described above. Additionally, dummy variables for each variable coding whether a case was imputed were included as controls (though not reported in the results that follow to save space). For general accuracy, logistic regression was used, whereas for directional inaccuracy, a multinomial logit model was estimated with accurate estimation as the reference outcome.

The results are displayed in Table 1. Most notably, respondents paying relatively closer attention to the news about the war were more likely to be accurate in their estimation of the

number of casualties than those paying less close attention. Observe as well that the coefficients for attention are of about the same (negative) sign and magnitude (-0.161 and -0.157) in the model of directional inaccuracy. A formal test of the difference between these coefficients (Long, 1997, p. 159-160) revealed they were not statistically different,  $Z = -0.050$ ,  $p > .50$ . In other words, decreased attention was associated with the same increase in the odds of overestimating as it was the odds of underestimating relative to accurately estimating the number of casualties.

----- Table 1 About Here -----

As can be seen in Table 1, the demographic “risk factors” for misperceiving the number of casualties include: not identifying with one of the two major political parties, being female, of relatively younger age, lower in education, and being an ethnic minority (i.e., not of “White” ethnicity). But among these risk factors, none of them differentiated between directions of inaccuracy. To be sure, there were some qualitative differences when using statistical significance as the criterion. For example, relative to Democrats, political Independents were more likely to underestimate ( $b = -0.335$ ,  $p < .05$ ) but no more likely to overestimate ( $b = -0.169$ ,  $p > .20$ ), but these coefficients were not statistically different from each other,  $Z = 0.96$ ,  $p > .20$ . Similarly, relative to Republicans, Independents were more likely to overestimate but no more likely to underestimate, but these coefficients were not statistically different,  $Z = 1.41$ ,  $p > .15$ . Thus, if we conservatively require evidence of statistically significant differences between under and overestimators relative to accurate estimators on these risk factors, we can conclude only that these factors predict whether a person is accurate or inaccurate in the estimation of casualties, but they do not predict the nature of those inaccuracies when they occur.

The only variable that predicts direction of inaccuracy was national cumulative casualties. The coefficient for national casualties is different for the comparison between underestimation

and accurate estimation ( $b = 1.559, p < .001$ ) versus overestimation and accurate estimation ( $b = -0.596, p < .001$ ),  $Z = 4.30, p < .001$ . This reflects a finding reported in the method section above—that underestimation was relatively more likely and overestimation less likely later in the war, when total casualties were higher. This finding simply illustrates that this pattern persists even after the statistical controls built into these models.

#### Relationship between Misperception and Opinion

As revealed above, just under half of the respondents could not identify the correct number of casualties suffered within a certain range of error. But are such (mis)perceptions related to opinions about the war itself?

To answer this question, three analyses were conducted, varying only the outcome variable from analysis to analysis. Opinion about war (support for troop withdrawal, whether it was the wrong decision to invade, and how the war is going) was predicted from perceptions of the number of casualties. In the analyses, perceptions were coded with two dummy variables coding whether a person was an over or underestimator, with accurate estimators used as the reference category. We statistically controlled for all the demographic and political variables described above, as well as the log of cumulative casualties as reported by the Department of Defense as of the date of interview. Additionally, dummy variables for each variable coding whether a case was imputed were included as controls (though not reported in the results that follow to save space). For analyses of dichotomous outcomes (troop withdrawal and wisdom of the decision to invade), logistic regression was used. For the single ordinal outcome (how well the war is going), the proportional odds logit model for ordinal responses was used.

----- Table 2 About Here -----

The results can be found in Table 2. As can be seen, even after numerous controls, *including the number of actual casualties suffered*, perceptions of troop casualties were related to beliefs about whether troops should be withdrawn,  $\chi^2(2) = 7.789, p < .05$ . Focusing on the individual coefficients in the model, respondents who believed there were more casualties than there actually were (the overestimators) were more likely than accurate estimators to report that troops should be withdrawn from Iraq. Converting the regression coefficient to an odds ratio by exponentiating (a practice we will follow in interpretations that follow), overestimators were roughly 30% more likely (odds ratio = 1.30) than correct estimators to support troop withdrawal. However, underestimators were no less likely than accurate estimators to support troop withdrawal.

The pattern of results was different for the other two measures of public opinion. Perceptions of casualties were indeed related to both beliefs about whether the decision to invade was wrong [ $\chi^2(2) = 6.737, p < 0.05$ ] as well as how well the war was going [ $\chi^2(2) = 43.609, p < .001$ ], independent of actual casualties suffered by troops as of the day of the respondent's interview. However, these findings were largely driven by differences between accurate estimators and underestimators. Underestimators were roughly 22% (odds ratio = -0.78) less likely than accurate estimators to believe that invading Iraq was the wrong decision. Furthermore, underestimators reported the war was going relatively better than did accurate estimators, with an ordinarily higher response on the scale roughly 22% (odds ratio = 1.22) more likely from underestimators relative to accurate estimators. But on neither of these measures were overestimators detectably different from accurate estimators.

Table 2 also provides some insight into differences in opinions about the war as a function of demographics, political ideology, and other individual attributes. Many of these are

not particularly surprising. For example, relative to political independents, Democrats and those who are more politically liberal were less likely to perceive the war was going well, were more likely to believe it was wrong to invade Iraq, and support the withdrawal of troops to a greater extent. The opposite is true for Republicans and those more politically conservative. Also, notice in Table 1 that there are consistent differences between whites and ethnic minorities across all three measures of opinion. Relative to whites, ethnic minorities were less likely to report that the war is going well, were more likely to believe the decision to invade Iraq was wrong, and were more likely to support the withdrawal of troops. Similarly, older respondents appeared to be more discouraged by the war effort, reporting to a greater extent than younger respondents that the war is not going well, that troops should be withdrawn, and that the decision to invade was wrong. Finally, the more educated respondents perceived the war was going *less well* than did the less educated, and yet were also *less* supportive of withdrawing troops.

## DISCUSSION

Overall, the strongest implication of these findings is that in explaining wartime public opinion, *perception* of the number of casualties matters over and above the *actual* number of casualties at any given time. Although this test is specific to the context of American opinion about the war in Iraq, it is consonant with the foundations of social scientific research, that peoples' "picture in their head" of wartime events is predictive of their opinion about a war. These findings stand in contrast to the traditional line of thinking about wartime public opinion in which events of the war are seen to drive the public's attitudes directly (however, see Berinsky, 2007 and Boettcher & Cobb, 2006 for other explanations).

Implicit in the argument we make is the assumption that the causal direction travels from attention to media, to the perception of troop casualties, and finally to opinion formation. We

acknowledge that with our use of cross-sectional data, direct testing of this causal direction is not possible. However, the proposed causal directional does flow naturally from the theoretical propositions of the casualties literature in that, as originally conceived, *actual* casualties were demonstrated to be related to an individual's opinion about the war. The reverse, that one individual's opinion affects the number of casualties, is not really plausible. Suggesting that individual's perception of the number of those casualties leads to an individual's opinion of the war is consistent with this reasoning – in both cases casualties lead to changes in opinion.

Alternative causal directions might still be suggested, however. For instance, those individuals who are sick of the war and believe it was wrong may just stop paying attention to the news about it, leading to the misperception of a higher number of casualties. Conversely, those individuals who are supportive of the war may feel that the news media are biased in their representation of the events, leading those individuals to cease paying attention to news about the war, resulting in the misperception of a lower number of casualties than actuality. This reasoning would suggest that the effect of attention to news on perception of casualties differs as a result of an individual's opinion about the war. Supplemental analyses, however, do not support these alternate explanations<sup>6</sup>; the effect of attention to news did not vary according to an individual's opinion about the war. Rather, as shown in Table 1, the effect of attention to news was almost identically related to both under- and over-estimation of the number of casualties.

We have argued in this paper that perceptions are not equal to reality in regards to the number of casualties, and in fact, the data show that there is wide variation in the accuracy of individuals as to how many troop casualties have occurred. Approximately 45% of the individuals surveyed could not accurately select how many troops had died from the options given. Furthermore, this 45% inaccuracy level may be artificially deflated because the measure

of estimation in this study was multiple choice, rather than respondent-generated; Berinsky (2007), who simply asked individuals to estimate how many troops had died, found wide variation, with responses ranging from 0 to 130,000 deaths, with a standard deviation of 802 (at the time of the survey, the total number of troop deaths rose from 901 to 915) and 53% of respondents were over or under the accurate number by 100.

In investigating the formation of individuals' perceptions of the number of wartime casualties, it is of interest to examine what accounts for the differences in estimation accuracy among the public along with which factors play a role in under and over-estimation. We find that greater attention to news about the Iraq war was positively associated with the likelihood of correctly perceiving the actual number of troop deaths. This evidence indicates that attention to media is related to individuals' perceptual formation. Those identifying with a political party were more likely to be accurate in comparison to non-identifiers, although there was *not* evidence that political ideology or party identification led to perceptual biases (over- or under-estimating to be in line with a party's position). This finding is consistent with Gaines et al. (2007), who find no difference between the accuracy levels of strong Republicans and Democrats (see also Boettcher & Cobb, 2006).

A valuable direction for future inquires is to examine what variables moderate the effect of perception of troop casualties on wartime public opinion. Gaines et al. (2007) discuss how party identification can moderate the effects of facts on interpretations and opinions, so although both Republicans and Democrats might believe 4,000 deaths have occurred, they might use that information quite differently in their judgments about the war. Furthermore, several lines of research focus on the idea that the American public is more or less sensitive to the loss of troops depending on a cost-benefit analysis. Larson (1996) asserts that the level of public support and

the clarity of wartime objectives are key considerations in theories that attempt to explain wartime public opinion. Gelpi, Feaver, and Reifer (2005/6) focus on how other perceptions, such as the correctness of launching the war, moderate the impact of casualties on opinions. Still other researchers argue that the influence of the number of troop casualties is weakened when enemy casualty data is present (Boettcher and Cobb, 2006; Gartner and Myers, 1995). Additionally, individuals who attend to different news sources may be impacted by the rising number of casualties in different ways, as it is likely that media outlets vary in the extent to which they cover casualties and in the manner that casualties stories are framed. Many of these factors have been shown to moderate the impact of the *actual* number of casualties on public opinion; however, it is possible that the mechanism by which these factors exert influence is through influencing individuals' perception of the number of casualties rather than through moderation of the effect of actual casualties (or perhaps they moderate the effect of those perceptions on opinion). It is of interest, therefore, to examine how and if these proposed variables moderate the effect that the *perceptions* of troop casualties have on wartime public opinion.<sup>7</sup>

### Conclusion

The study of the casualties hypothesis has been pitted with controversy in the past 30 years. Overall, academics and policy makers agree that the mounting costs of war as quantified by the rising number of troop casualties is negatively related to public support for military interventions. Eichenberg (2005) reports that “decision makers have apparently acted on the basis of their understanding of how the American public would react to the loss of life” (p. 151). As this hypothesis has gained so much academic and “real-world” attention, it is important that our understanding of this process be specified to indicate that perceptions of the number of troops lost mediate the impact of the actual number of casualties on public opinion. This study

has shown both theoretically and empirically that individuals' perceptions of the number of troop casualties should take a more central role in the casualties hypothesis. Only through this clarification can we "best understand the furies of war and politics" (p. 4) that Walter Lippmann first began to explore over 80 years ago.

ENDNOTES

<sup>1</sup> By “casualties,” we mean deaths to soldiers engaged in the military intervention.

<sup>2</sup> The Pew Research Center for the People and the Press bears no responsibility for the analyses or interpretations of the data presented here.

<sup>3</sup> Response rates were calculated using the AAPOR formula  $RR_1$  for the minimum response rate (AAPOR 2008)

<sup>4</sup> Although we chose to present the results using the logged of national casualties, including the un-logged national casualties in analyses does not alter the results in any way.

<sup>5</sup> Given that unidentified heteroscedasticity can invalidate hypothesis tests when using a standard error estimator that assumes homoscedasticity (as we did in the models reported in Tables 1 and 2), we reran these analyses using a Huber-White heteroscedasticity-consistent estimator of the standard errors. Substantively, the results were unchanged. All statistically significant effects remained significant, and all nonsignificant effects were still nonsignificant.

<sup>6</sup> Three multinomial regressions were conducted, estimating the likelihood of accurate estimation versus over and under estimation, respectively, from the interaction of attention to news with the three measures of opinion about the war. The effect of attention to news did not differ by any opinion measure ( $\Delta\chi^2_{\text{Troop Withdrawal}(2)}=1.941, p = .379, \Delta\chi^2_{\text{War Going Well}(2)}=4.510, p = .105, \Delta\chi^2_{\text{Wrong Decision}(2)}=1.941, p = .379$ ).

<sup>7</sup> We did mine the data looking for interactions between perceived casualties and any of the other predictors in the models in Table 2, using a Bonferroni correction of 24 (8 predictors  $\times$  3 outcomes) to correct for multiple post-hoc tests. We found only one interaction worth noting: the tendency for underestimators relative to correct estimators to be less likely to report that invading Iraq was the wrong decision did not exist among Republicans. Among Republicans,

perceptions of the number of casualties was largely unrelated to perceptions of the wisdom of the invasion. This finding hints at the likelihood that differences between party members in their *interpretations* of perceived casualties, rather than simply their raw numbers, play an important role in influencing public opinion (c.f., Gaines et al., 2007). But we do not elaborate further on this given that we did not find a similar interaction on the other two opinion outcomes.

REFERENCES

- 3,000 and how many? (2007, January 3). *The Times Union*, p. A8.
- Althaus, S. L. (2002). American news consumption during times of national crisis. *Political Science and Politics*, 32(3), 517-521.
- American Association for Public Opinion Research. (2008). Standard definitions: Final dispositions of case codes and outcome rates for surveys. Accessed September 23, 2008 from [http://www.aapor.org/uploads/Standard\\_Definitions\\_07\\_08\\_Final.pdf](http://www.aapor.org/uploads/Standard_Definitions_07_08_Final.pdf)
- An Australian life lost in Iraq. (2005, February 2). *The Age*. p. 14.
- Benson, R. (2004). Bringing the sociology of media back in. *Political Communication* 21, 275-292.
- Berinsky, A. J. (2007). Assuming the costs of war: Events, elites, and American public support for military conflict." *Journal of Politics* 69, 975-997.
- Boettcher, W. A. & Cobb, M. D. (2006). Echoes of Vietnam? Casualty framing and public perceptions of success and failure in Iraq. *Journal of Conflict Resolution*, 50(6), 831-854.
- Bueno de Mesquita, B. & Siverson, R. M. (1995). War and the survival of political leaders: A comparative study of regime types and political accountability. *American Political Science Review*, 89, 841-855.
- Bueno de Mesquita, B., Siverson, R. M., & Woller, G. (1992). War and the fate of regimes: A comparative analysis. *American Political Science Review*, 86, 638-646.
- Burk, J. (1999). Public support for peacekeeping in Lebanon and Somalia: Assessing the casualties hypothesis. *Political Science Quarterly*, 114, 53-78.
- Converse, P. E. (1964). The nature of belief systems in mass publics. In *Ideology and*

- Discontent*, D. Apter, (Ed). Glencoe, IL: Free Press.
- Delli Carpini, M. X. & Keeter, S. (1996). *What Americans know about politics and why it matters*. New Haven: Yale University Press.
- Eichenberg, R. C. (2005). Victory has many friends: US public opinion and the use of military force, 1981-2005. *International Security*, 30(1), 140-177.
- Eichenberg, R. C., Stoll, R. J., & Lebo, M. (2006). War president: The approval ratings of George W. Bush. *Journal of Conflict Resolution*, 50, 783-808.
- Gaines, B. J., Kuklinski, J. H., Quirk, P. J., Petyon, B., & Verkuile, J. (2007). Same facts, different interpretations: Partisan motivation and opinion on Iraq. *The Journal of Politics*, 69(4), 957-974.
- Gartner, S. S. (2008a). The multiple effects of casualties on public support for war: An experimental approach. *American Political Science Review*, 102(1), 95-106.
- Gartner, S. S. (2008b). Secondary casualty information: Casualty uncertainty, female casualties, and wartime support. *Conflict Management and Peace Science*, 25(2), 98-111.
- Gartner, S. S. (2004). Making the international local: The terrorist attack on the USS Cole, local casualties, and media coverage. *Political Communication*, 21, 139-159.
- Gartner, S. S. & Myers, M. E. (1995). Body counts and “success” in the Vietnam and Korean wars. *Journal of Interdisciplinary History*, 25(3), 377-395.
- Gartner, S. S. & Segura, G. M. (1998). War, casualties and public opinion. *The Journal of Conflict Resolution*, 42(3), 278-300.
- Gartner, S. S., Segura, G. M., & Wilkening, M. W. (1997). All politics are local: Local losses and individual attitudes toward the Vietnam War. *Journal of Conflict Resolution*, 41(5), 669-694.

- Gelpi, C., Feaver, P. D., & Reifler, J. (2006). Success matters: Casualty sensitivity and the war in Iraq. *International Security*, 30(3), 7-46.
- Gillan, A. (2006, February 1). Iraq 2003-2006: The milestone they dreaded: The number of British soldiers killed in Iraq reached the landmark figure of 100 yesterday. *The Guardian*, p. 19.
- Herbst, S. (1999). Walter Lippmann's *Public Opinion* revisited. *The Harvard Journal of Press/Politics*, 4(2), 88-93.
- Jackman, R. (1993). Rationality and political participation. *American Journal of Political Science*, 37, 279-290.
- Karol, D. & Miguel, E. (2007). The electoral cost of war: Iraq casualties and the 2004 U.S. presidential election. *Journal of Politics*, 69(3), 633-648.
- Kinder, D. R. (1998). Opinion and action in the realm of politics. In D. T. Gilbert, S. T. Fisk, & G. Lindzey (Eds). *The handbook of social psychology*. New York: Oxford University Press.
- Klarevas, L. J., Gelpi, C. & Reifler, J. (2006). Casualties, polls, and the Iraq war. *International Security*, 31, 186-198.
- Kriner, D. L. (2006). Examining variance in presidential approval: The case of FDR in World War II. *Public Opinion Quarterly*, 70, 23-47.
- Kull, S., Ramsey, C., & Lewis, E. (2003-2004). Misperceptions, the media, and the Iraq War. *Political Science Quarterly*, 118, 569-598.
- Larson, E. V. (1996). *Casualties and consensus: The historic role of casualties in domestic support for U.S. military operations*. RAND Corporation.
- Lippmann, W. (1922). *Public opinion*. New York: Harcourt, Brace and Company.

- Little, R. J. A., & Rubin, D. B. (2002). *Statistical analysis with missing data* (2<sup>nd</sup> edition). Hoboken, NJ: Wiley.
- Long, J. S. (1997). *Regression models for categorical and limited dependent variables*. Thousand Oaks, CA: Sage Publications.
- Mueller, J. E. (1973). *War, presidents, and public opinion*. New York: Wiley.
- Mueller, J. E. (1994). *Policy and opinion in the Gulf War*. Chicago: University of Chicago Press.
- Nordholt, E. S. (1998). Imputation: Methods, simulation experiments and practical examples. *International Statistical Review*, 66(2), 157-180.
- Page, B. & Shapiro, R. (1992). *The rational public*. Chicago: University of Chicago Press.
- Powlick, P. J. & Katz, A. Z. (1998). Defining the American public opinion/foreign policy nexus. *Mershon International Studies Review*, 42(1), 29-61.
- Ray, J. L. (1995). *Democracy and international conflict: An evaluation of the democratic peace proposition*. Columbia: University of South Carolina Press.
- Reiter, D. & Stam, A. C. (1998). Democracy and battlefield military effectiveness. *Journal of Conflict Resolution*, 42, 259-277.
- Russett, B. (1990). *Controlling the sword: The democratic governance of national security*. Cambridge, MA: Harvard University Press.
- Schudson, M. (2002). The news media as political institutions. *Annual Review of Political Science*, 5, 249-269.
- Schumpeter, J. A. (1950). *Capitalism, socialism, and democracy* (3<sup>rd</sup> Ed.). New York: Harper and Row.
- Stam, A. (1996). *Win, lose or draw*. Ann Arbor: University of Michigan Press.
- Voeten, E. & Brewer, P. R. (2006). Public opinion, the War in Iraq, and presidential

accountability. *Journal of Conflict Resolution*, 50, 809-830.

Wyer, R. S. and V. C. Ottai. 1993. Political information processing. In S. Iyengar & W. J.

McGuire (Eds.), *Explorations in political psychology* (pp. 264-294). Durham, NC: Duke University Press.

Zillman, D. & Bryant, J. (1985). *Selective exposure to communication*. Hillsdale, N.J.: Lawrence Erlbaum and Associates.

Table 1.

Accuracy in beliefs about U.S. casualties suffered as a function of demographics, political identification and ideology, actual casualties, and attention to news

	Directional Inaccuracy					
	General Accuracy <sup>1</sup>		Underestimation <sup>2</sup>		Overestimation <sup>2</sup>	
	<i>b</i>	<i>s.e.</i>	<i>b</i>	<i>s.e.</i>	<i>b</i>	<i>s.e.</i>
Attention to news about Iraq	0.160***	0.040	-0.161***	0.048	-0.157**	0.050
Ideology (Liberalness)	-0.047	0.038	0.033	0.046	0.065	0.048
Democrat <sup>3</sup>	0.262*	0.122	-0.335*	0.149	-0.169	0.152
Republican <sup>3</sup>	0.271*	0.127	-0.153	0.153	-0.409*	0.160
Male	0.571***	0.066	-0.648***	0.082	-0.526***	0.086
Age	0.017***	0.002	-0.021***	0.002	-0.013***	0.003
Education	0.151***	0.021	-0.148***	0.025	-0.159***	0.027
White	0.426***	0.095	-0.350**	0.115	-0.501***	0.116
National Casualties, Logged	-0.576***	0.146	1.559***	0.185	-0.596***	0.186
Nagelkerke $R^2$	0.207***		0.115***			

+  $p < .10$ \*  $p < .05$ \*\*  $p < .01$ \*\*\*  $p < .001$ <sup>1</sup> Logistic regression coefficients<sup>2</sup> Multinomial logistic regression coefficients with accurate estimation as the reference outcome<sup>3</sup> Democrat and Republican are dummy variables with Independents as the reference group

Table 2.

Opinion about the war as a function of demographics, attention to news about the war, and accuracy in the estimation of national casualties at the time of the interview

	How well the war is going <sup>1</sup>		Wrong decision to invade <sup>2</sup>		Withdraw troops <sup>2</sup>	
	<i>b</i>	<i>s.e.</i>	<i>b</i>	<i>s.e.</i>	<i>b</i>	<i>s.e.</i>
Attention to news about Iraq	-0.040	0.037	0.109*	0.049	-0.072	0.044
Ideology (Liberalness)	-0.457***	0.035	0.463***	0.047	0.296***	0.042
Democrat <sup>4</sup>	-0.535***	0.113	0.896***	0.134	0.427**	0.130
Republican <sup>4</sup>	1.035***	0.118	-1.515***	0.142	-0.943***	0.136
Male	-0.049	0.060	-0.154+	0.081	-0.554***	0.072
Age	-0.009***	0.002	0.022***	0.002	0.004*	0.002
Education	-0.099***	0.019	0.049+	0.026	-0.209***	0.023
White	0.241**	0.087	-0.683***	0.122	-0.693***	0.108
National Casualties, Logged	-1.328***	0.134	0.273	0.180	0.234	0.160
Underestimator <sup>3</sup>	0.199**	0.076	-0.244*	0.103	0.077	0.091
Overestimator <sup>3</sup>	-0.025	0.080	-0.180+	0.107	0.267**	0.096
Nagelkerke $R^2$	0.284***		0.488***		0.303***	

+  $p < .10$ \*  $p < .05$ \*\*  $p < .01$ \*\*\*  $p < .001$ <sup>1</sup>Proportional odds ordinal regression coefficients<sup>2</sup>Logistic regression coefficients<sup>3</sup>Under and overestimator are dummy variables with accurate estimators as the reference group<sup>4</sup>Democrat and Republican are dummy variables with Independents as the reference groupWithdraw troops:  $\chi^2(2) = 7.789, p = 0.020$ . Wrong decision:  $\chi^2(2) = 6.737, p = 0.034$ . How well war is going:  $\chi^2(2) = 43.609, p < .001$ .