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Images of Injury: Graphic News Visuals' Effects on Attitudes Toward the Use of Unmanned Drones

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Toward the Use of Unmanned Drones

Abstract: In this study, sanitized coverage of the United States' use of military drone strikes in foreign countries is pitted against more graphic news images in an experimental setting to determine effects on attitudes toward the use of U.S. military drones. Additionally, multiple news exposures are tested to determine whether individuals can become emotionally inured to war coverage, even when images are more graphic. Key results find those who viewed graphic news visuals did not show evidence of desensitization after repeated viewing, and expressed higher levels of concern regarding drone use, but not reduced support for U.S. drone policy.

Keywords: Graphic visuals, news, drones, desensitization

Introduction

As wartime photojournalism began with images of fallen soldiers on the battlefields of the American civil war (Huppauf, 1997), the question of how journalists should handle graphic visuals of the dead and dying in wartime is not new. Yet, it remains relatively unsettled, as few media institutions offer consistent guidelines for the use of graphic war visuals, meaning decisions regarding their use are often decided by news producers in a case-by-case manner (Keith, Schwalbe, & Silcock, 2006). A number of contextual factors have been shown to influence these decisions. Editors will often point to audience sensitivity as a reason for avoiding graphic images (Peterson & Spratt, 2005). News producers are also subject to government pressure, as the United States government has at times resisted the distribution of graphic war images through various means, including political pressure (Sweeney, 2001), direct censorship of certain classes of image (Bumiller, 2009), and by restricting access to the battlefield (Tumber & Palmer, 2004). In both cases, concerns regarding the presumed potential effect on the emotional states and political opinions of audiences have been influential.

This issue takes a new significance as drone warfare becomes an increasingly important part of U.S. military policy, with over 400 recorded drone strikes in Pakistan, Yemen, and Somalia in the past decade (Tracking America, 2014). The surveillance function of drones uniquely provides the means to view graphic evidence of their effects. Unlike traditional means of remote warfare, whose visuals have typically provided a detached, sanitized picture of war (Franklin, 2000), drones now record the aftermath of military strikes, including graphic images of death and injury for targets and civilians alike (Stahl, 2013). Such graphic footage of the results of drone strikes exists publically, circulating among a modest viewership online (Stahl, 2013; Tait, 2008). However, these images rarely make their way to mainstream U.S. news media,

since such sources typically forgo explicit visuals of targets in favor of more clinical visuals of command centers or drone pilots (Gregory, 2011; Stahl, 2013).

It is important to understand how the news media's decision to show or not to show graphic depictions of drone warfare could affect support for their continued use. Drones retain popular support in the United States, with recent polls showing a clear majority in favor of the use of drone strikes against terrorism-related targets (Pew Research Center, 2014). However, when asked to consider drones in the context of potential civilian casualties, support for the use of drones drops significantly (Kreps, 2014). As television news remains the primary means of learning about war for most individuals in the United States (Pew Research Center, 2011), the degree to which televised news sources keep the casualties of drone warfare salient through the use of graphic visuals could impact public support for the policy.

In this study, sanitized coverage of the United States' use of military drone strikes in foreign countries is pitted against more graphic news images in an experimental setting to determine effects on attitudes toward the use of U.S. military drones. Additionally, multiple news exposures are tested to determine whether individuals can become emotionally inured to war coverage, even when images are more graphic. In so doing, the current study examines whether sanitizing military attacks, particularly in the context of drone warfare, impacts attitudes among the viewing public.

Literature Review

The news media in the United States have drawn criticism for their perceived role in supporting military interests. Analyses of news coverage of war have identified a co-occurring tendency toward support for the U.S. military, favorable depictions emphasizing successes in conflict, and a suspension of the "watchdog" role of the press (Baum & Groeling, 2010). The

news media have been found to use a positive tone in war stories (Kang, 2005), to present anti-war demonstrators negatively (Luther & Miller, 2005), to heavily favor official sources (Fahmy, 2007), and to endorse official justifications for war (such as fighting terrorism, Fried, 2005).

This lack of critical coverage has been identified as a contributor to the "rally around the flag" phenomenon, the sustained bouts of public approval enjoyed by presidents following some wars, terrorist attacks, and major foreign policy events (Hetherington & Nelson, 2003). Prior analyses find news media exposure has a positive statistical effect on support for war, possibly due to this "rally"-type coverage. Morgan, Lewis, and Jhally (1992) found a marginally significant ($p = .08$) relationship between television news viewing and support for the first Gulf War. Oliver, Mares, and Cantor (1993) found news viewing to be a significant, positive predictor of support for and positive attitudes toward the first Gulf War. More recently, Hayes and Myers (2009) determined that amount of news viewing was negatively related to holding the opinion that troops should be withdrawn immediately from Iraq in the most recent conflict, although this relationship weakened later in the war as cumulative casualties rose.

In particular, the degree to which news media are unwilling to show graphic images of war has long been presumed to be an important factor influencing public opinion on war. Conventional wisdom has long held that exposure to the graphic consequences of combat could deter public support of the decision to go to war (Dauber, 2001; Norris, 1994). Most famously, many have attributed declines in support for the Vietnam War to graphic televised images of both civilian and military casualties, although later scholarship has argued that graphic visuals were not a significant portion of news coverage and were thus unlikely to have driven public opinion (Hallin, 1986; Patterson, 1984). News coverage of past wars typically presents a relatively sanitized account, generally avoiding depictions of blood and gore, of combat, and of

injury (e.g., Hallin, 1986; Paletz, 1994). U.S. news from the recent war in Iraq has been determined to follow a similar sanitized pattern in television news, newspapers, news magazines, and news websites (Aday, 2005; Griffin, 2004; Silcock, Schwalbe, & Keith, 2008). U.S. news sources are also more likely than their international counterparts to sanitize coverage of wars in which U.S. troops are involved (Aday, Livingston & Hebert, 2005; Fahmy & Kim, 2008).

Defined by the use of close-up images of injury, the explicit depiction of physical harm, the extent to which there is "physical alteration to the victim," and the inclusion of blood and gore (Potter & Smith, 2000, p. 302), graphicness in violent media has been identified as an important contextual factor for media violence, able to increase viewer attention, emotional reactions, and cognitive elaboration, resulting in more elaborate and more accessible mental models for violence (for a review, see Riddle, 2014). Studies manipulating the amount of graphic footage specifically within news stories have found evidence of effects on attention, emotion, and information processing. Lang, Newhagen, and Reeves (1996) showed that the inclusion of graphic visuals in television news stories impacts both the viewers' information processing—resulting in greater levels of attention and recall—and emotional responses—leading to greater arousal and more negative evaluations of the stories. Hutchinson and Bradley (2008) demonstrated a similar effect in a 2 x 2 experimental design that manipulated the valence (positive vs. negative) and intensity (graphic vs. sanitized) of news footage. Those in the graphic negative condition displayed the greatest levels of arousal and attention. This physiological response is theorized to impact interpretation of news stories, as those in this condition were more able to recall visual information and less able to recall audio information. Finding more limited results, McEntee (2012) exposed 55 participants to war news stories accompanied by either graphic or sanitized photographs, and measured the resulting changes in information

processing, affect, and attitudes toward media and toward civic participation. Only empathy was affected by the presence of graphic visuals, where those in the graphic condition expressed more empathy toward the subjects of the news story.

Exposure to graphic news stories has been demonstrated to affect public opinion, although this research has focused on testing the presence of graphic war visuals, rather than the degree of graphicness. Pfau and colleagues (2008) found those who saw graphic visuals of combat during a news broadcast reported feeling less proud of U.S. involvement in the Iraq War when compared with those who saw the same stories reported without visuals, although these results did not extend to other affective measures, such as sadness or fear. Additionally, they found that those in the visual condition experienced greater issue involvement and had more negative attitudes about the war. More recently, Gadarian (2014) found in both natural and laboratory experiments, exposure to graphic terrorism visuals (including footage of the collapse of the World Trade Center towers and of casualties of the London subway attacks) was associated with increased approval of President G.W. Bush, particularly among Democrats.

Part of the challenge in establishing the effect of graphicness through social science research is the difficulty in manipulating graphicness without fundamentally altering the context of the image. For instance, Pfau and colleagues (2006) discovered that subjects who saw both graphic photos of enemy deaths and sanitized photographs of U.S. soldiers' coffins accompanied by captions demonstrated a small increase in negative attitudes toward and a diminished support for continued U.S. military presence in Iraq when compared with the text-only condition and the photograph-with-full-text condition. Those exposed to the sanitized U.S. casualty photos experienced lower levels of support for US military action, less puzzlement, and greater pride than those who viewed the graphic pictures of enemy casualties, but in the design it was not

possible to separate the effect of graphicness from the effect of subject and context. Gartner (2011) extended these results, demonstrating in a series of experiments that brief exposure to conventional, easily understood images of military loss (such as flag-draped caskets) reduced support for war, whereas ambiguous images of loss (including graphic images, such as casualties on a battlefield) did not impact support for war. Here, the context of the visuals more so than their graphicness was shown to be a major factor in attitude formation.

It appears that only one prior study exists in which graphicness alone was manipulated and opinions toward public policy were measured. McKinley and Fahmy (2011) tested the effect of the degree of graphicness in casualty photos on attitudes regarding the Israeli/Palestinian conflict. Exposing a cohort of college students to three different sets of photographic images of the Israeli/Palestinian conflict ranked as low, moderate, or high in graphicness, the authors found that higher levels of graphicness resulted in higher levels of negative affect. The authors did not find that graphicness had an effect on beliefs about the severity of the conflict or support for U.S. intervention in the region, but did find that exposure to graphic imagery could reduce the effect of pre-existing negative attitudes toward Middle Easterners on perceptions of the conflict there.

Taken together, these studies offer preliminary evidence that visuals of injury in coverage of war have the limited potential to influence viewers, producing negative emotional reactions and in some cases influencing opinions on public policy.

Desensitization

Exposure to violent media has been extensively linked to physiological, neurological, cognitive, affective, and behavioral outcomes (see Leone & Paradise, 2013 for a review). However, desensitization, defined as reduced physiological, cognitive, affective and behavioral reactions to real-world or mediated violence (Leone & Paradise, 2013), can occur from repeated

exposure to media violence, as even graphic images lose their emotional impact (Linz, Donnerstein & Penrod, 1988; Thomas, Horton, Lippincott & Drabman, 1977). Although most prior research has focused on the ability of fictional entertainment media violence to produce a desensitization effect, Scharrer (2008) found evidence for desensitization to violent events stemming from high levels of news exposure among individuals with low trait empathy.

Desensitization may play an important role in the public's opinion regarding war policy. While the use of graphic imagery in news has been shown to impact perceptions of news events after a single exposure (Gadarian, 2014; Hutchinson & Bradley, 2008; Lang et al., 1996; McKinley & Fahmy, 2011; Pfau et al, 2006; Pfau et al., 2008), desensitization to graphic images may negate these effects in a long-term setting. Past research has shown that regular viewers of graphic online war videos have reported signs of desensitization after repeated viewings (Tait, 2008). Fahmy and Johnson (2007) have shown that viewers of the Arabic news organization Al-Jazeera (which regularly includes graphic content) both expect and support the use of graphic images, speculating that frequent viewers may have become emotionally inured to the shock of violent imagery. In fact, one quarter of the surveyed viewers no longer consider the images of war related death and injury to be "graphic" at all (Fahmy & Johnson, 2007). The possibility of growing accustomed to even graphic images was suggested by McKinley and Fahmy (2011) as a possible explanation for a lack of main effects in their study, postulating that their college-aged research participants may have been desensitized by previous exposure to graphic images online.

Hypotheses, Research Questions, and Theoretical Linkages

In the study at hand, the role of exposure to graphic images in altering concern about and support for the United States' use of unmanned military drone strikes is examined, as is the potential of individuals to become desensitized to such news coverage after repeated exposure.

These variables are studied under two different repeated news exposure conditions, one utilizing graphic and the other sanitized visuals.

The prediction posed in the first hypothesis is based on prior research which, on balance, shows negative mood states and attitudes triggered by graphic news coverage of war and conflict (Lang et al., 1996; McKinley & Fahmy 2011; Pfau et al., 2006, 2008). In our study, we extend the topic to include unmanned air strikes rather than more traditional forms of warfare. H1: Exposure to graphic news coverage of U.S. military drone strikes will result in greater emotional sensitivity than exposure to sanitized news coverage.

Next, we extend the dependent variable beyond an affective state and toward attitudes of concern about the use of U.S. military drone strikes. This stems from the Pfau et al. (2008) investigation that found greater issue involvement among those exposed to graphic coverage of the Iraq War. Perhaps as a result of greater attention to and recall associated with graphic images (Hutchinson & Bradley, 2008; Lang et al., 1996), the graphicness of the news coverage may spur concern for the use of unmanned military drone strikes by the United States. H2: Exposure to graphic news coverage of U.S. military drone strikes will lead to a greater increase in concern for drone strikes compared to exposure to sanitized news coverage.

In spite of the critiques that U.S. news outlets' relative sanitization of war and conflict can unduly sway public opinion (e.g., McKinley & Fahmy, 2011), the evidence that graphic news footage can change attitudes toward war is equivocal. Pfau and colleagues (2006, 2008) have found evidence suggesting exposure to graphic visuals could lead to decreased support for war in both print and televised scenarios. However, McKinley and Fahmy (2011) found only limited evidence that graphicness may impact attitudes toward war in specialized conditions and Gartner's (2011) findings suggest perhaps only particular, unambiguous images of death such as

those of coffins impact support for war. Given the dearth of evidence, and its conflicting nature, we ask how the presence of graphic or sanitized footage may alter the degree or direction of support for the use of unmanned drones for military strike purposes.

RQ1: Will exposure to graphic news coverage of U.S. drone strikes lead to greater changes in levels of support for drone strikes compared to exposure to sanitized news coverage?

The third hypothesis presents a classic desensitization effect that we expect will be registered in both conditions, since both groups are exposed to televised news coverage of the war. Compared to their initial scores on emotional sensitivity to the news stories, we expect participants to become inured to the war images during repeated exposures. Decreased emotional sensitivity through repeated viewing of violence is a common indicator of desensitization in prior research (Fanti et al., 2009; Linz et al., 1988; Scharrer, 2008; Thomas et al., 1977) and is thus used here as the operationalization of desensitization.

H3: Repeated exposure to news coverage will result in decreased emotional sensitivity.

The implicit logic of those concerned with sanitized war news is that graphic images could command and sustain greater attention (Dauber, 2001; Fahmy & Johnston, 2007; Norris, 1994). While viewing graphic imagery can increase attention and negative emotional reactions in viewers (Lang et al., 1996; McKinley & Fahmy 2011; Pfau et al., 2006, 2008; Riddle, in press), even these graphic images could potentially result in desensitization with repeated exposure (Linz et al., 1988; Thomas et al., 1977). In the next research question, we ask whether the desensitization process will occur uniformly across our sample, or whether the presence of graphic imagery will attenuate the desensitization process.

RQ2: Will emotional sensitivity decline at different rates in the graphic and sanitized conditions?

Generally, there is a positive relationship between long-term exposure to news coverage of war and support for war (Hayes & Myers, 2009; Morgan et al., 1992; Oliver et al., 1993). Yet a number of studies have suggested that short-term exposure to images of war in a news context, particularly graphic images, has the limited potential to reduce support (Gartner, 2011; McKinley & Fahmy, 2011; Pfau et al., 2006, 2008). If viewers become desensitized to the news coverage, we might expect that any initial change in concern or support will fade as they become inured to the emotional impact of the news footage. However, if the presence of graphic footage serves to prevent the onset of desensitization, then we would expect levels of concern to fall at a slower rate, or remain stable with repeated exposure. To the best of our knowledge, no prior research has tested what happens when exposure to such coverage occurs repeatedly. Thus, we pose our final research questions.

RQ3a: Will repeated exposures to news coverage of U.S. military drone strikes result in a return to baseline levels of concern for the use of such drone strikes?

RQ3b: Will repeated exposures to news coverage of U.S. military drone strikes result in a return to baseline levels of support for the use of such strikes?

RQ4a: Will the rate of change in concern for U.S. military drone strikes differ between the graphic and sanitized conditions?

RQ4b: Will the rate of change in support about U.S. military drone strikes differ between the graphic and sanitized conditions?

Methods

This study adopted a 3 (within subjects: time 1, time 2, time 3) x 3 (between subjects: sanitized, graphic, and control) repeated measures experimental design in an online format. Participants for this study were asked to first complete a brief survey about themselves and about

current events, and then were requested to return to the site three times over a period of ten days to view video clips taken from television news broadcasts and respond to post-exposure questionnaires.

Sample

The participants were recruited via Amazon's Mechanical Turk (MTurk) service. MTurk is an online platform where volunteers are paid a small fee to perform simple tasks, such as completing a survey. While the population of MTurk workers tends to overrepresent females and liberals compared to nationally representative samples (Berinsky, Huber, & Lenz, 2012), samples drawn from the service typically equal or surpass student-convenience samples in generalizability (Buhrmester, Kwang, & Gosling, 2011). Moreover, nonrepresentative samples have been shown to be acceptable when investigating multivariate relationships (Basil, Brown & Bocarnea, 2002). In the current study, our sample was 58.1% male, 86% white, with a mean age of 36.2 years ($SD = 11.1$) and a median annual income bracket of \$40,000-\$49,999 and a mean of 3.12 ($SD = 1.53$) on a scale of 1 = very liberal to 7 = very conservative. Thus, the current sample appears to have avoided the gender and, for the most part, the political ideology bias detected in prior MTurk samples (Berinsky et al., 2012). After the removal of subjects who did not successfully complete all stages of the study, the final sample consisted of 136 participants, with random assignment resulting in 42 subjects in the graphic condition, 49 in sanitized, and 45 in control. The difference in the size of the groups is explained by differential mortality (i.e., the groups experienced different rates of attrition). The attrition rate was higher than expected. However, a sensitivity analysis conducted using *G*Power* indicates that, given our design parameters and the recommended power level of .8, our *n* of 136 was sufficient to detect effects

at the level of $f = .26$ or greater. Thus, our design can adequately detect moderate to large effects, although a failure to detect small effects may be attributable to a lack of statistical power.

Experimental Materials

To create the video materials for this experiment, three excerpts of news broadcasts by CNN, CBS, and PBS that included a single news item on U.S. military drone strikes were selected. Each excerpt, running approximately three minutes in length, began with a news anchor introducing the topic, followed by a news package of combined narration and b-roll footage. To create the graphic condition, portions of the original b-roll were removed and substituted with thematically similar graphic war footage, taken from broadcasts by Al Jazeera and PBS Frontline. This included footage of victims of drone and missile strikes, featuring evidence of physical injuries, the presence of blood, and images of dead bodies. To create the sanitized condition, any original b-roll that was judged to be possibly graphic was removed and substituted with thematically similar footage (e.g. footage of buildings destroyed by airstrikes) taken from similar national news broadcasts. With the exception of the altered b-roll, the remainder of the video in the graphic and sanitized conditions was identical.

After indicating their informed consent, thirty participants were recruited via MTurk for a pre-test to verify that the graphic and sanitized conditions differed significantly in their content. Each participant was randomly assigned to either the graphic or sanitized version of each of the three videos. Participants indicated on a five-point scale their level of agreement that the images in each videos were graphic, showed close-up depictions of injury or death, contained explicit depictions of injury or death, showed depictions of injury or death resulting in physical alteration to the body, or depicted blood and gore. The five measures were summed to create a graphicness index for each video, and a series of independent sample t-tests indicated that each graphic video

scored significantly higher than its sanitized counterpart (Video One: t (27) = 10.11, $p < .001$, Video Two: t (26) = 6.37, $p < .001$, Video Three: t (28) = 3.86, $p < .01$).

Procedure

       A separate set of MTurk participants completed a pre-test questionnaire, used to establish baseline measurements regarding their concern about and support of the use of U.S. military drone strikes. It also measured demographic variables and the individual difference variables used as covariates in the study (defined in the next section). One day after the pre-test, participants were notified via email to return to MTurk within three days to complete the next phase of the study. At this point, participants were randomly assigned into the graphic, sanitized, and control conditions in which they would remain for the duration of the study. During this phase, participants watched and responded to the prescribed video content for each condition. This process was repeated two more times, resulting in a total of four visits (one pre-test and three news exposures) to the site over a ten-day period for the purpose of completing the study.

       Each exposure session consisted of a series of segments in which participants would view a short news video. Post-test questionnaires were completed immediately after viewing to assess level of emotional sensitivity, support, and concern (again, defined below) regarding the topic of the video. During each session, to disguise the study's purpose, participants in all conditions viewed and responded to two distractor news items, in which the news video and corresponding questionnaire items focused on a non-violent subject unrelated to the study (e.g. climate change). Those in the graphic and sanitized conditions would additionally view a third news item and respond to an additional set of questionnaire items pertaining to U.S. military drone strikes. In place of this manipulation segment, participants in the control condition were simply asked to respond to questions measuring the level of support for and concern regarding U.S. military

drone strikes, without having seen a news item of any sort on the topic. During each session, the distractor and manipulation segments were presented in a random order for each participant. Additionally, the manipulation videos were randomized across time, giving each video an equal chance of appearing during each session.

Measures

Concern for the use of U.S. military drone strikes was measured using the mean score of a set of five items adapted from Pfau and colleagues (2008), wherein participants were presented with semantic differential adjective pairs with five response options. The items were: unimportant (1) or important (5), a matter of no concern (1) or of great concern (5), means nothing (1) or means a great deal (5), insignificant (1) or significant (5), and irrelevant (1) or relevant (5); Cronbach's alpha was assessed at the pre-test, $\alpha = .936$. Six additional items adapted from Pfau et al. (2008) measured participants' *support* for the use of U.S. military drone strikes by averaging the responses to semantic differential pairs with five response options: whether continued U.S. military presence in Iraq is wrong (1) right (5), negative (1) positive (5), unacceptable (1) acceptable (5), unfavorable (1) favorable (5), foolish (1) wise (5), and bad (1) good (5). Cronbach's alpha at the pre-test was $\alpha = .977$. Higher scores for these measures indicate higher concern about and support for the war, respectively.

Following exposure to each news clip, a set of items adapted from Scharrer (2008) was used to measure *emotional sensitivity* by asking participants to self-report their emotional reactions to the news story. In four separate items, participants were asked on a five-point scale how distressing, shocking, violent, and disturbing they found each news story to be, with higher scores indicating greater amounts of each emotion. Results were averaged to form a composite measure of emotional sensitivity. Cronbach's α at Time 1 = .864.

Covariates. Empathy was measured as a key individual difference variable, given its role in relevant prior studies (Aust & Zillmann, 1996; Scharrer, 2008). The eight-item Mehrabian and Epstein (1972) emotional empathy scale was used to measure trait empathy at the pre-test (M = 28.82, SD = 4.40. Cronbach's α = .744). The scale includes such items as: "It makes me sad to see a lonely stranger in a group," and "Seeing people cry upsets me." Subjects were also asked at the pre-test to identify how politically conservative or liberal they consider themselves to be (1 - very liberal, 7 - very conservative), based on the established role of political ideology in shaping views on war (Gadarian, 2014; Gartner, 2011). Our sample skewed slightly liberal (M = 3.12, SD = 1.53). Finally, to capture the potential for overall amount of news exposure rather than only the manipulated exposures in the study to have an influence (Scharrer, 2008), several pre-test items measured participants' day-to-day media use by asking how many days per week and minutes per day they typically spend reading a newspaper, reading online news, and watching television news programs. The answers were multiplied to give a measure of average weekly media use for each form of news. Online news was the most frequently used source, with an average of 212.9 minutes per week (SD = 248.2). Television news was the next most frequently used at 166.1 minutes per week (SD = 429.14). This measure was highly skewed, so for analysis we reduced this to a dichotomous variable, with those watching less than an hour a week being classified as lighter viewers (49.3%), and those watching an hour or more as heavier viewers (50.7%). Newspaper reading was shown to be relatively uncommon, with almost two-thirds (64.7%) of the sample indicating they did not typically read print news. Given this low rate of use, newspaper viewing was not included in any analyses.

Results

A series of ANCOVA tests were used to explore H1, H2, and RQ1, which dealt with the initial exposure to graphic and sanitized news coverage at Time 1 (See Table 1). For both the concern and support variables (H2 and RQ1), the measures taken during the pre-test (prior to any news exposures) were used as a baseline for each participant. These baseline scores were subtracted from the participant's score at Time 1 to create measures of change in concern and support used as the dependent variables in the analysis. For the emotional sensitivity variable (H1), scores were from Time 1, following the first exposure, as the operationalization of the variable requires an exposure immediately prior to the reporting of the participants' emotional response. For each ANCOVA, political orientation, empathy, television news viewing, and online news use were entered as covariates. Finally, to test whether the experimental conditions experienced a change greater than that experienced by the control condition, simple contrasts were specified using the control group as the reference in relevant analyses.

H1 predicted that exposure to graphic news coverage of U.S. military drone strikes would result in greater emotional sensitivity than exposure to sanitized news coverage. As the control group did not view a news story of drone use which they could respond to, only the sanitized and graphic conditions were compared. The ANCOVA result indicated that when controlling for political ideology, news viewing, and empathy, there was no significant difference between the graphic ($M = 3.32$, $SD = .81$) and sanitized ($M = 3.52$, $SD = .99$) conditions, $F(1,85) = 1.37$, $p = .25$ (see Table 1). Thus, H1 was rejected as the self-reported emotional sensitivity to the news coverage of U.S. drone strikes did not differ between the two groups after a single exposure.

H2 predicted that exposure to graphic news coverage of U.S. military drone strikes would lead to a greater increase in concern for the use of drone strikes by the U.S. military compared to exposure to sanitized news coverage. The omnibus test showed that the overall effect of

condition approached significance in changes from baseline after the first news exposure, $F(2,133) = 1.98$, $p = .061$. At Time 1, the graphic condition had shown an increase in concern of $M = .43$ ($SD = .64$), the sanitized condition increased by $M = .21$ ($SD = .85$), and the control condition increased by $M = .07$ ($SD = .60$) from baseline. The simple contrasts indicated that the graphic condition differed significantly from control ($p < .05$), but the sanitized condition did not, lending partial support to H2 (see Table 1).

RQ1 asked whether exposure to graphic news coverage of U.S. military drone strikes would lead to a greater change in levels of support for the use of military drone strikes by the U.S. compared to exposure to sanitized news coverage. The omnibus test ($F(2,129) = .917$, $p = .40$) and the specified contrasts both indicated that no significant differences emerged among the graphic ($M = -.23$, $SD = .76$), sanitized ($M = -.28$, $SD = .95$), or control ($M = -.09$, $SD = .84$) conditions (see Table 1). Therefore, immediately following the first news exposure, no significant changes occurred from baseline between sanitized and graphic U.S. military drone strike footage for the dependent variable of support for the use of such drones.

Two way mixed model ANCOVAs was used to test H3, RQ2, RQ3 and RQ4, which dealt with the effects of repeated exposure to news videos at all three time periods (See Table 2). First, H1, which predicted that repeated exposure to news coverage would result in decreased emotional sensitivity, and RQ2, which asked if this rate would differ between the graphic and sanitized conditions, were examined. These tests did not utilize the control condition, as only those in the graphic and sanitized conditions were exposed to the news items being tested. The test of within-subjects effects indicated that there was no main effect for time, $F(2,170) = .20$, $p = .82$, nor was there an interaction effect between time and condition, $F(2,170) = 1.16$, $p = .32$,

indicating that emotional sensitivity did not vary significantly over time, and that condition did not impact this lack of change.

RQs 3 and 4 investigated the effect of repeated news exposures on support and concern for the use of military drone strikes by the U.S., respectively, asking if this would result in a return to baseline levels, and whether the rate of change would differ between the graphic and sanitized conditions. As above, scores were computed to assess the level of change from the initial baseline in both measures at Time 2 and Time 3, respectively. Mixed model repeated measures ANCOVA tests were used to explore these questions. However, since RQ3b and RQ4b was contingent on detecting an initial change in support after the initial news exposure, and RQ2 indicated this change did not occur, RQ3b and RQ4b were disregarded. As H2 did indicate such a difference in levels of concern, we proceeded with the analysis of RQ3a and RQ4a. The ANCOVA results for the measure of concern for the U.S. military use of drone strikes indicated there was a between-subjects effect for condition across all time periods that approached significance, $F(2, 129) = 2.90$, $p = .06$, with specified contrasts indicating a significant difference between the graphic ($M = .35$, $SE = .09$) and control ($M = .04$, $SE = .09$) conditions ($p < .05$). Thus, those in the graphic condition experienced a larger increase in concern about the use of U.S. military drone strikes in war compared to those in the control condition, but the sanitized condition ($M = .18$, $SE = .09$) did not differ significantly from control. There was no significant main effect for time, nor was there a significant interaction effect between time and condition, indicating that the initial change in concern between the pre-test and the first exposure for those in these two conditions held constant through the remaining two news exposures (see Table 2).

Discussion

This study sought to complement the long-standing and important discussions on the value and impact of graphic images in war news footage (Dauber, 2001; Fahmy & Johnson, 2007; McKinley & Fahmy, 2011; Norris, 1994) by providing empirical evidence of the effect that type of footage can have on concern and support for war policy. Indeed, we attempted to update that literature by exploring the coverage of and attitudes about the use of unmanned drone air strikes by the U.S. military, a practice that has fueled considerable debate while still receiving general acceptance in U.S. public opinion (Pew Research Center, 2014). Additionally, in a unique addition to the experimental evidence on the topic, we also looked to assess the potential role of desensitization in that process through the use of multiple exposures, to explore whether cumulative exposures to these violent episodes result in a reduced affective and cognitive impact (Leone & Paradise, 2013).

Our analysis indicates that graphic footage does impact news viewers' concern for the issue of U.S. military drone use. This is consistent with the limited findings available in prior research using this particular aspect of public opinion, which measures a stated concern, acknowledgment of significance, importance, meaning and relevance of the topic of war (Pfau et al., 2008), or in this case, drone use in warfare, in particular. However, we did not find a corresponding change in viewers' evaluation of the use of military drones strikes in terms of their level of support for such use. While some previous experiments have found graphic visuals to alter public opinion of war across entire samples (Pfau et al., 2006; Pfau et al., 2008), results in prior research are typically limited or appear only in certain sub-groups (Gadarian, 2014; Gartner, 2011; McKinley & Fahmy, 2011). Thus, our study joins those that find only limited, if any, impact of graphic visuals of military strikes on support for such military involvement, when controlling for such relevant variables as degree of empathy (Aust & Zillmann, 1996; Scharrer,

2008), political orientation (Gadarian, 2014; Gartner, 2011), and overall news exposure (Hayes & Myers, 2009; Morgan et al., 1992; Oliver et al., 1993).

We had theorized that an increase in concern might be driven by increased negative emotional reactions (Riddle, 2014). However, our data do not support this, as our measures of emotional sensitivity indicated no statistical difference between the graphic and sanitized news viewing conditions. This finding is surprising, given that it contradicts previously observed patterns within news settings (Hutchinson & Bradley, 2008; McKinley & Fahmy, 2011) and broader tests of exposure to graphic violence (Riddle, in press). The failure in our study of the graphic visual condition to produce greater emotional sensitivity may have been a result of the manipulation itself. In addition to the absence or presence of graphic visuals, the degree of graphicness displayed could potentially affect audiences (McKinley & Fahmy, 2011). In our study, the differences between the graphic and sanitized conditions, although verified in the manipulation check, may not have been stark enough to induce a change in emotion. Likewise, it may be the fault of the self-reported nature of the measure of emotional sensitivity where participants indicated the degree to which they found the news story to be violent, distressing, disturbing, and shocking. Those within the sanitized frame may have utilized other news broadcasts as a comparison point in reporting on emotional response to the news stories, to which even sanitized coverage of news is more unsettling. Those in the graphic condition, upon seeing evidence of blood and injury, may have compared the news footage to other sources of graphic online imagery, which could be considerably more graphic than our manipulation (McKinley & Fahmy, 2011; Tait, 2008; Stahl, 2013).

Previous research has shown long-term relationships between news viewing and support for war (Hayes & Myers, 2009; Morgan et al., 1992; Oliver et al., 1993). Research showing that

short-term exposure to graphic news could reverse this pattern, resulting in declining support or increased perceived importance (Gadarian, 2014; Hutchinson & Bradley, 2008; Lang et al., 1996; McKinley & Fahmy, 2011; Pfau et al, 2006; Pfau et al., 2008) has only been conducted in single-exposure settings. Adding to this literature, our study examined how desensitization over multiple exposures could impact public perceptions on the use of drones for military strikes.

Due to similar patterns stemming from both fictional entertainment violence (Leone & Paradise, 2013; Linz et al., 1988; Thomas et al., 1977) and violent events covered in the news (Scharrer, 2008), we predicted that our sample would show evidence of desensitization to repeated coverage of the news of U.S. military drone strikes. Surprisingly, no significant drop in emotional sensitivity was observed in either the sanitized or graphic conditions. Likewise, we found no effect on the levels of support for the use of drone strikes by the U.S. military over time, and concern remained higher in the graphic condition throughout all time periods. These results offer tentative support for a consistent, enduring power of war visuals, as our sample apparently did not become increasingly inured to their effect during this experiment. While a lack of a decline in sensitivity may suggest that our sample was already inured to these kinds of images, as McKinley and Fahmy (2011) have suggested, our mean sensitivity scores registered consistently on the upper half of the scale, leading us to reject this as a likely scenario.

A limitation of our study is the relatively small sample size. A higher than expected attrition rate reduced the total number of usable cases in our analysis. This prevented us from analyzing potential differences between subgroups identified in previous studies (Gadarian, 2014; Gartner, 2011; Scharrer, 2008), as a power analysis conducted using *G*Power* indicated that, to achieve the recommended power level of .8 in a design further subdivided into 6 groups, a total *n* of 221 would have been needed to detect even moderate effects. The nature of the

sample is also limited to those performing tasks through Amazon's Mechanical Turk service, although the demographics obtained from our sample were appropriate for the topic of news coverage of war, and our sample did not appear to suffer from the usual gender and political ideology biases associated with MTurk (Berinsky et al., 2012). Of course, random assignment to groups assured distribution of demographic and other variables. Moreover, in a public opinion context in which United States citizens indicate an overall acceptance of the practice of using drone strikes in military actions (Pew Research Center, 2014) but show declining support when civilian casualties caused by such strikes are made salient (Kreps, 2014), the failure in the current study to manipulate whether those injured were military or civilians is an important shortcoming, as well. Finally, any study such as this which explores a topic currently in the news may suffer from the possibility that current events were influencing participants' results.

It has been argued that the images of war dead are necessary to convey the reality of war to news viewers (Norris, 1994). This critique is particularly relevant for drones, given their underutilized potential for delivering this type of powerful image (Stahl, 2013). Our results add to the evidence that the viewing public may react differently to war when confronted with graphic evidence of its consequences. Moreover, the study has shown that these images may retain their power upon repeated exposure, and not necessarily lead to desensitization. However, the lack of an observed shift in evaluations of drone policy—i.e., the lack of significant results for the support variable—serves to complicate the assumption of a direct relationship between the consumption of war images and a subsequent decline in support for state violence (Norris, 1994). The inclusion of graphic images is, of course, only one of a host of contextual factors in the construction of news content, the majority of which has been shown to support established U.S. policy (Baum & Groeling, 2010; Fahmy, 2007; Kang, 2005). In such a climate, it is perhaps

unsurprising that our presentation of graphic consequences of drone warfare was met with increased concern but not changing support.

Future research should seek to identify and empirically test how graphic visuals work in concert with other aspects of media construction and consumption to shape public opinion. Finer manipulations of the contextual factors of graphic violence, including the identity of victims, the absence or presence of blood, the degree of graphicness and the duration of images, will yield a greater understanding of these effects of visuals in news coverage. Additionally, the broader media context must be considered. Images of warfare appear frequently outside of news broadcasts, in films, in entertainment television, and in video games (Stahl, 2010). Understanding the role of graphic visuals in these contexts is an equally important piece in understanding the formation of public opinions regarding war.

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Table 1

Means (*SD*) and *ANCOVA* Results for Emotional Sensitivity to Drone News Videos, Change in Concern

for Use of U.S. Military Drone Strikes, and Change in Support for Use of U.S. Military Drone Strikes.

	Condition			
	Graphic	Sanitized	Control	*F*-test (df)
	(*n* = 42)	(*n* = 49)	(*n* = 45)	*p* value
Emotional Sensitivity	3.35 (.81)	3.50 (.99)	-	1.37 (1,85)
				ns
Change in Concern	.43 (.64)	.21 (.85)	.07 (.60)	2.86 (2,129)[1]
				0.06
Change in Support	-.23 (.76)	-.28 (.95)	-.09 (.80)	.92 (2,129)
				ns

[1] Significant contrasts between Graphic and Control, *p* <.05

Table 2

Means (*SD*) and Two-Way Mixed *ANCOVA* results for Emotional Sensitivity to Drone News Videos, Change in Concern for use of U.S. military drone strikes, and Change in Support for use of U.S. military drone strikes.

	Graphic (*n* = 42)			Sanitized (*n* = 49)			Control (*n* = 45)			*F*-test (df) *p* value		
	T1	T2	T3	T1	T2	T3	T1	T2	T3	Time	Condition	Interaction
Emotional Sensitivity	3.35 (.81)	3.17 (.90)	3.19 (.97)	3.49 (.99)	3.49 (1.03)	3.26 (1.06)	-	-	-	.20 (2,170) ns	2.46 (2,170) ns	1.15 (2,170) ns
Change in Concern	.43 (.64)	.29 (.72)	.34 (.62)	.21 (.85)	.19 (.80)	.08 (.84)	.07 (.60)	.02 (.62)	.06 (.64)	.94 (2,258) ns	2.90[1] (2,258) 0.06	.52 (2,258) ns
Change in Support	-.23 (.76)	-.31 (.72)	-.20 (381	-.28 (.95)	-.15 (.83)	-.14 (.99)	-.09 (.80)	-.16 (.59)	-.18 (.60)	.58 (2,258) ns	.33 (2,258) ns	1.15 (2,258) ns

[1] Significant contrasts between Graphic and Control, *p* <.05