

Impact of Images in Print Media

Image Impact in Print Media: A Study of How Pictures Influence News Consumers

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Abstract: This study examined the effect of images in print media. Prior analysis indicates in which pictures used in advertising and marketing can greatly have an effect on a new consumer's frame of mind in regards to a product, with big, vibrant image resolution better recognition and also being considered additional favorably. This particular review wanted to uncover in case pictures used in this news advertising received exactly the same amount of psychological impact on frame of mind. Outcomes of the learning disclosed in which satisfactory research prevails to aid the particular ideas in which picture with a caption use better impact on viewers' perceptions when compared with pictures with text. In addition, females' have an impact on degrees revealed additional radical changes although males were additional reliable. It had been also identified in which because of a insufficient electrical power it's not at all probable to be able to attract results with regards to the impact associated with inoculation combined with pictures and also their particular attitudinal, guidance, and also affective replies.

I. INTRODUCTION

Image Impact in Print Media:

A Study in How Pictures Influence News Consumers Since the time of the Civil War, images of conflict and death have both fascinated the

American public and been a cause of great concern for political leaders. Alexander Gardner's photos of casualties following the Battle of Gettysburg served to illuminate the costs of war in ways a news story alone never could. Images of combat operations, both positive and negative, can take on an iconic status with the American public. The triumphant flag raising at Iwo Jima is contrasted with George Strock's shocking photos, published by Life magazine in 1943, of three dead GIs on Buna Beach, New Guinea.

Powerful images of war can sway public opinion for or against combat operations. President Franklin Delano Roosevelt relaxed press censorship, after a two-year ban on casualty photos, and allowed the release of photos depicting dead soldiers in the hopes that it might galvanize public support for the war. But can a photo also turn the tide of public opinion against a conflict? In 1968, outside a Buddhist temple in Saigon, the capitol of the Republic of Vietnam, Brigadier General Nguyen Ngoc Loan, chief of the South Vietnamese National Police, shot a "Vietcong suspect." The moment was captured by AP photographer Eddie Adams, who won a Pulitzer Prize for Spot News Photography, and appeared in magazines and newspapers around the world. It was also shown the next evening to 20 million viewers watching ABC's Huntly- Brinkley Report (Perlmutter, 2005). John Chancellor of NBC news said, "The [Saigon] execution was added to people's feeling that this was just horrible. This is just terrible. Why are we involved in a thing like this? I think this added to the feeling that the war was the wrong war at the wrong place" (Perlmutter, 2005). Did the photographic icons of the Vietnam War: a Buddhist monk burning himself to death, a napalmed young girl running down a road, Vietnamese villagers massacred by U.S. troops at My Lai, turn the tide of public opinion against the Vietnam conflict? More recently, images of Somalis desecrating and dragging the bodies of U.S. soldiers through the streets in 1993 appalled the American public and are widely considered to have directly contributed to President Clinton's decision to pull out troops from the

area (Perlmutter, 2005). “A Time/CNN/Gallup poll found the people who had seen the pictures the day after they were aired were more likely to support an exit from Somalia” (Perlmutter, 2005, p. 119).

One possible solution to combat the powerful influence of photos is through government censorship. Throughout World War I and the beginning of World War II, the U.S. government asked journalists to submit to a “voluntary censorship code” and screened all war-related photos prior to release (Smith, 1999). Vietnam saw a reversal of this policy. War correspondents traveled freely through Vietnam, often by military transport, and their images were not censored by the U.S. government. The war planners, many of whom served in Vietnam, placed a number of restrictions on the press during Desert Storm, including limiting the media to only “pool” coverage, and left the press to use mostly images supplied by the Department of Defense (Perlmutter, 2005). Following the criticism of the press about the strict controls during Desert Storm, the military relaxed its censorship policies and during the 2003 Iraq War embedded more than 700 print and broadcast journalists as well as photographers with U.S. troops (Knickmeyer, 2003).

Although many people commonly accept the premise of news images’ ability to sway public opinion, very little research has been done to test this assumption. Does the use of images with text affect readers? This study examines the impact of images on involvement, emotion, and attitude, and then tests whether an inoculation approach might limit these effects. Nearly 300 subjects were pre-tested for attitude toward the U.S. military presence in Iraq, as well as involvement level toward three specific military issues. Subjects were placed in one of three viewing conditions (all conditions contained text and photographs relating to U.S. involvement in the war in Iraq): news photographs with captions, news photographs with full text, and full text alone. Two-thirds of the subjects were inoculated against the influence of photographs, and all subjects were post-tested to determine the overall impact of the news photographs.

Hypotheses

Many say media images became more graphic of the war in Iraq as the conflict changed from air war to urban combat (Robertson, 2004). Do graphic images have the ability to alter public support for U.S. combat operations? This investigation examines participants’ opinions toward military efforts in Iraq before and after being exposed to a war photograph with a caption, a photograph with full text, or full text alone in an attempt to determine the influence of graphic war photographs on public opinion.

Impact on Attitude

An underlying concern for military public affairs practitioners is how graphic pictures from the war zone affect public attitude about U.S. involvement in combat operations. Can one poignant photograph turn a war supporter into a war protestor? Some think so, and this investigation is based on the premise that it is crucial to understand how an image might change an attitude. Currently, there is no hard evidence on the impact of photographs in news stories in an individual’s attitude. However, there is research within the advertising realm relating to the impact of photographs on attitude that can be drawn from.

Images have a powerful impact on a viewer’s attitude, and this impact cannot be created by text alone. In a news context, the presence of a photograph will significantly alter the consumer’s attitude toward the framed issue.

Houston, Childers, and Heckler (1987) noted that little research examined the effects of nonverbal message elements on consumer information processing. They also proposed that the nature of pictorial stimuli suggests that pictures can be used effectively to embed expectations within a message. If this is true, there are many implications for advertisers and news producers alike. For instance, Singh, Lessig, and Kim (2000) show that advertisers use pictures for several reasons, including getting attention. In newspapers, visuals have proven to be a crucial connection point, and Moses (2002) noted that graphics, photographs, and headlines get far more attention from readers than text does. In a marketing saturated environment, winning the consumer’s attention is half of the battle. Furthermore, the mere association of a product with a positively evaluated stimulus like an attractive picture, regardless of the picture content, may be sufficient to alter attitude toward the product “without any rational belief change preceding the effect” (Harris, 1983, p.112).

If it is understood how consumers react to pictures in the marketing context, insight can be gained into how photographs serve to influence news consumers. Advertisement practices appear to be predicated on the belief that vivid information is more persuasive than pallid information, with vividness typically viewed as a characteristic of the stimulus; hence; pictures are vivid and verbal statements are pallid (Kisielius & Sternthal, 1984). Persuasion is usually measured by asking

subjects to make attitudinal judgments about the message promotion. Within the advertising framework, one can study the impact of images in relation to influencing consumer attitude.

The research of pictures in advertising has focused on two broad categories: the effects of pictorial messages on memory and the impact of pictures on consumer attitudinal response (Houston et al., 1987). The attitudinal studies are significant because the manner in which an image influences a consumer's opinion toward an advertisement could realistically explain the way a photograph influences a news consumer's opinion about an article, or the issue discussed in the article. Petty and Cacioppo (1981) have defined attitude as "a general and enduring positive or negative feeling about some person, object, or issue" (Morris, Woo, Geason, & Kim, 2002). The visual component in advertisements may affect both the formation of product attribute beliefs and attitude toward the advertisement (Mitchell, 2001). If the images in an advertisement can directly affect a consumer's attitude, what is portrayed in those images is crucial. One explanation for those effects is the belief structure change hypothesis, which states that pictures' effect on attitudes occurs through their influence on product-related thoughts and beliefs (Singh et al., 2000).

The results of a Mitchell (2001) study indicate that the visual elements of advertisements may affect brand attitudes in at least two ways. First, consumers might make presumptions about the brand based on the visual information presented. These presumptions may "result in the formation or change of beliefs about the advertised brand" (Mitchell, 2001, p. 21). Second, if the visual element is positively or negatively evaluated, it might affect a brand attitude operating through attitude toward the advertisement. In essence, the valence of a photograph can significantly influence a consumer's attitude toward an advertisement.

In fact, having more pictures or a larger picture in an advertisement can influence consumers. A Rossiter and Percy (1978) study found that high pictorial emphasis in print advertising, that is, a large picture of the product relative to the space devoted to copy, generated significantly more favorable overall attitude ratings for a new, hypothetical product than those advertisements with low pictorial emphasis, that is, a small picture of the product with larger size copy. The imagery explanation of this picture-superiority effect relates to advertisements where the information presented in words is the same as the information presented in the pictures (Houston et al., 1987).

In a news story, the photograph serves to draw attention to a big story, further illustrate statements made in the story, and give the readers' more details about the information presented. Just as in advertisements, photographs in news stories can stimulate opinion change about brand attitude. In the case of military print news stories, the brand affected is support of war. Hence, this study posits:

H1: In military print news stories, a) photographs with captions and b) photographs with full text exert greater impact on readers' attitude towards U.S. military combat operations compared to full text without photographs.

Impact on Involvement Levels

Prior to the 2004 presidential elections and in the months following the election, many Americans ranked the War on Terror and the conflict in Iraq as important issues facing the country (Gallup, 2004). Since most Americans don't experience the war directly, what impact do photos play in increasing levels of involvement with this issue? Photographs in news stories bring readers directly to the front of the action, and offer a front-row seat for U.S. combat operations. Reading about a particular battle is informative, but viewing graphic images of war dead from that battle allows the news consumer to feel drawn in to the action.

Visual images demand a viewer's attention. Photos have the ability to convey drama and emotion and realism in a way that text alone cannot. Visual images can short circuit higher levels of cognition and reasoning, because they are more lifelike and easier for the brain to process.

Also, because the brain codes visual and nonvisual information separately, the additional memory coding can increase information recall.

Visuals can have a dramatic impact on a reader's involvement and feelings toward an event or issue. Newhagen and Reeves (1992) found the increased cognitive load caused by negative arousal raised by intense and vivid images on television actually caused viewers to forget the verbal and visual information presented prior to the image and heightened their memory for visual and factual information presented after the compelling images (Newhagen & Reeves, 1992).

By nature the visual medium demands receiver attention. The news photograph connects the reader to a story in a way that text alone cannot. Graber (1996) said “combining pictures with words makes the message more memorable” (p. 87). The overall content of pictures differ in the emotion, immediacy, and environment captured. These elements of a picture can produce dramatic information, which are not necessarily conveyed or included through textual information alone. Graber attributes this to the fact that the human brain absorbs larger amounts of information when messages are visual (1996).

Medium theory also explains this phenomenon. Chesebro (1984) argues each individual’s mind is conditioned to view and digest media modalities in different ways. He asserts that “specific media are linked to particular modes of understanding” (p. 119). Chesebro and Bertelsen (1996) compare several modes of communication with the type of understanding it generates:

Understandings are derived by substituting concrete references for the abstractions read; writer and reader are unlikely to share a commonly shared social context for interpreting language; knowledge is created/understood in an individual, unique, and private environment; knowledge takes the form of propositional claims (p. 168).

The television modality interacts differently than textual because it effects orientation and awareness – “an inverse relationship exists between television viewing and reasoning: as a symbolic code increasingly approximates real life, the need to make inferences and judgments declines” (p. 169). Since photos work in the visual medium, it is possible they share some of the same effects on the consumer as television. Although this impact was studied using the television medium, Prabu (1998) adds to the validity of extending motion imagery research results to expectations of still images by citing similarities between the two. Prabu states that the findings between the two are similar and that any differences may be attributed to encoding, retrieval and level of audio-visual redundancy.

With respect to photographic images, the aspect of human sensation is an important one. An operational assumption of media is that “attention is best gained by appealing to sensation and human interest” (Myerowitz, 1985, p. 13). This assumption directly relates to arousal and the evidence that humans like to “feel.” An image can capture human interest within a momentary glance and evoke sensation soon after. While words alone have the same ability, it takes more effort on the part of the receiver. It is a less instantaneous and perhaps less vivid, effect. Myerowitz (1985) argues that all media focus on dramatic or exciting events and spectacles to gain attention. Yet it is possible photographic images may win more attention than the printed word simply due to ease of use. Once that attention is gained, do the images create a stronger arousal or emotional response?

Graber (1996) demonstrates that arousal does increase receiver involvement. Processing and retention of photographic information is based on two types of scholarly explanations. The first is pictures create a sense of participation or witnessing of an event and arousing the viewer’s interest and attention to a greater extent. This emotional involvement leads the viewer to a perceived realism of the visual in addition to the amplifying the credibility of the image (Graber, 1996). The second explanation is that the combination of visual information and nonvisual information are encoded for messages separately the likeliness of retrieval of stored information is greater. This means because of the additional memory coding, if for some reason one form of the information is not available; the other may be (Graber, 1996). Images create a sense of drama because they hold a reader’s attention and create emotional involvement resulting in personal identification between the subjects of a story and the consumer. In order to create dramatic impact, print stories will often “try to draw in exciting visuals stored in the audience’s memory” (Graber, 1996, p.90). Thus, this study predicts that:

H2: In military print news stories, a) photographs with captions and b) photographs with full text exert great impact on readers’ elicited involvement levels about specific military issues compared to full text without photographs.

Impact on Affect

Most Americans, even those not alive at the time the picture was taken, can recall the infamous picture from Vietnam of a naked young girl, burned from napalm, running down a road screaming in agony. On the other hand, most Americans probably cannot remember the combat actions surrounding that photo, or any other detail that would have been explained in a full text article on the incident. The photo is remembered over the information because of the way it evokes emotion. Graphic photographs of military action, or the consequences of such action, tend to elicit affective responses from the general public.

Readers are more likely to feel emotionally involved in a news story when a photograph is present. News photographs obtain more emotional responses than textual information alone.

Emotions are generally viewed as mental states representing evaluative reactions to events, agents, or objects that vary in intensity (Ortony, Clore, & Collins, 1988). A simple photograph can serve as an object that elicits emotion. According to Paivio (1986), imagery is more likely to be evoked by and used with pictures than with words and affective reactions would usually occur more quickly to pictures than to words because pictures have a more direct access to affect-mediating images. These emotions serve as heuristics, and guide one's decisions with minimal information processing or thought (Dillard & Meijnders, 2002). Affect, therefore, plays an important part in determining how individuals view events. If an event is determined to be beneficial to an individual then it is likely to trigger a positive emotion, and when an event is considered to be harmful to an individual it is likely to trigger a negative emotion (Mesquita & Karasawa, 1999).

The impact of visuals on text isn't restricted to content bolstering alone. Innis (1964) posited the idea that different media have differing potential for control. Much of this control potential stems from accessibility of the particular medium. McLuhan (1964) added that media can even work as extensions of the human sense or processes, suggesting that different media affect the organization of human senses differently. In consideration of these viewpoints, the accessibility of newspaper images may lend to some form of societal control. Newspapers physically permeate the nation and are inexpensive, many cheaper than a soft drink or a pack of gum, some costing nothing at all. If the print medium is a working factor in the organization of human senses, how does it affect human senses? Since newspaper images are overwhelmingly accessible and impact human senses, it's possible that they have some control over emotion, which is inextricably linked with one's senses.

The mental imagery processing model (Staats & Lohr, 1979) states that both words and images can serve to elicit an emotional response (Scott & Batra, 2003). It is not simply the descriptive words of a news story that stir up a reader's sensations. Nabi (2003) notes that pictures have an unquestioned capacity to arouse emotions, and adds that such emotion may influence attitudes directly or indirectly by impacting message processing. News stories use images not only to clarify text, but also because they stimulate emotion in consumers. Strivers (1994) believed visual images appeal to human beings on an emotions level and posited the more vibrant, excited, or convincing an image is, the more likely it will affect an individual. In the marketing context, similar outcomes are noteworthy. In Morris et al.'s (2002) robust study of over 23,000 responses to 240 advertising messages, researchers found that affect dominates over cognition for predicting attitude and action, and that "emotional response is a powerful predictor of intention" (p. 14).

According to Mackie, Asuncion, and Rosselli, positive affect occurs when specific content from long-term memory is activated. In other words, "positive mood will be accompanied by a flux of predominately positive material in active memory" (1992, p. 251). Additionally, research suggests that affectively valenced material is allocated more emotional attention than non-affectively valenced material. Following this path, human beings tend to allocate more attention (and cognition) to material that is positively valenced. Mackie, Asuncion, and Rosselli (1992) suggested that less attention is given to negatively valenced material, leading to the suggestion that humans might focus on positively valenced material by suppressing negatively valenced material. Graber (1996) found emotionally valenced visuals have more impact for the receiver. Since images can create a sense of drama, they hold a viewer's attention and create emotional involvement resulting in personal identification between the subjects of the story and the viewer. "In fact, to create dramatic impact, print stories often try to draw on exciting visuals stored in the audience's memory," (Graber, 1996, p. 90).

The intellectual impact of imagery is less important than the emotional force of an image, since imagery affects a receiver emotionally before cognitively dissecting the image into intellectual components (Strivers, 1994). This influence is precisely what news producers are aiming at, since "the image is intended to make an impression, to have an emotion impact on its audience" (Strivers, 1994, p. 132). Unlike photographs portraying political leaders or scenic landscapes, images of military action evoke some type of feeling. Hence, this investigation posits:

H3: a) photographs with captions and b) photographs with full text elicit greater affect in readers compared to full text without photographs.

Military public affairs practitioners often deal with the effects of stirring images on public opinion. It is the spokesperson's job to explain, clarify, or apologize for graphic and sometimes disturbing photographs relating to military action. Often times, public affairs officers know that moving pictures exist and will be distributed to the public, yet there is little that can be done to mitigate the effects of such images. Yet, if the above allegations are true, and images indeed

influence attitude, involvement levels, and emotion, can anything be done to protect against this influence? It is inevitable, with the widespread use of embedded reporters and the ease of transmitting, that graphic images from the war zone will reach the American public. Effectively countering the impact of powerful images could enable political and military leaders to retain crucial public support in times of war.

A question of interest to academics and practitioners alike is whether it is possible to preempt the persuasive influence of the visual medium using inoculation. Inoculation research, based off the biological premise of inoculation that by inducing a small amount of an antagonistic agent into the subject the person will become stronger at fighting off more forceful attacks in the future, has proven capable of conferring resistance to persuasive appeals in a variety of settings.

McGuire established the framework for inoculation theory with his work in the early 1960s (McGuire, 1961a; McGuire, 1961b; McGuire, 1962; McGuire & Papageorgis, 1962; Papageorgis & McGuire 1961), and much of the theory is still intact more than 40 years later. Inoculation theory has proven to be effective in reducing persuasive appeals over a wide range of applications including: political campaigns (Pfau & Burgoon, 1988; Pfau, Kenski, Nitz, & Sorenson, 1990), smoking prevention (Pfau Van Bockern, & Kang, 1992), commercial advertising (Pfau, 1992), and public relations (Burgoon, Pfau, & Birk, 1995). This study extends the application of inoculation to a specific media channel, the news photograph. Communication and advertising research has demonstrated the powerful impact visuals have on attitudes, involvement, and emotion. What, if anything, can be done to protect individuals from the influence of a visual image? One answer may be to inoculate against the visual channel. As mentioned previously, inoculation has proven effective in many contexts. Inoculating against a specific channel would extend the theory beyond simply looking at messages, but also to the mode used to deliver the message.

At a basic level, inoculation theory is fairly simple and relies on two primary concepts: threat and refutational preemption. For an inoculation treatment to be effective in conferring resistance, it has to alert receivers that their attitudes are vulnerable to change. This awareness of perception of receiver vulnerability is what is known as threat (Pfau, 1997). The threat component consists of a forewarning that a present belief is likely to come under attack, and must be sufficient enough to challenge a receiver's attitudinal integrity. McGuire (1961, 1964) argues that when receivers are threatened, they will be motivated to bolster their attitudes about potential attacks.

Refutational preemption is simply a counterargument to a possible persuasive attack. Armed with foreknowledge of a potential vulnerability and arguments to counter the attack, inoculation theory posits an individual will begin to generate counterarguments to bolster their belief to a greater extent than either a supportive defense only or no prior defense at all (McGuire, 1964). McGuire also showed that a time component is necessary for individuals to begin properly generating counterarguments (McGuire, 1961a). Pfau et al. (1997) states that McGuire's emphasis was on inoculation as an active cognitive process and that research on communication forms with cognitive messages suggests the superiority of the print form over video (Pfau, Holbert, Zubric, Pasha & Lin 2000). Until 2000, modality, or form of the message, in resistance research was "treated as a 'neutral' conduit of message content" (Pfau, 1990, p.195). However, a recent study in inoculation concerning the modality of the message (Pfau, Holbert, Zubric, Pasha & Lin, 2000) displayed a difference in how various forms of communication prompted resistance, specifically that video elicited a much greater counterarguing output. Emotion in the inoculation process is important, as is the possibility that one can inoculate against emotion-laden arguments (Nabi, 2003). Is it possible dissimilar modes of persuasive appeals differ in how they react to inoculation?

Thus, in the context of inoculating against visual attacks within news stories, this study

H4: Compared to those who receive no pretreatment, readers' of military print news stories who are inoculated prior to exposure to the story are less affected: They demonstrate a) less attitudinal influence, b) less elicited involvement, and c) less elicited affect.

II. METHODS

Topic Selection

The investigation featured three high-imagery events related to the war in Iraq; repatriation of remains, Abu Ghraib prison scandal, and the battle for Fallujah. A story was selected from either the Washington Post or Newsweek and had to include an image.

Participants

Participants were recruited from introductory communication classes at a midwestern university. A total of (N = 272) research participants completed both phases of the study (a retention rate from Phase 1 of 91.8 %). Participant involvement with the issue (e.g. low, medium, and high) was used to randomly place participants in one of three event categories and into either an inoculation treatment or control group.

Design and Independent Variables

The study featured a 3 x 3 Multivariate Analysis of Covariance (MANCOVA) to examine hypotheses 1-3, and a 2 x 2 MANCOVA to examine hypothesis 4. Independent variables were news condition, which was operationalized as a picture with a caption, a story without a picture, and a picture and story; and experimental condition, which was operationalized as a preemptive inoculation treatment and control (no inoculation treatment). The effectiveness of inoculation was assessed by comparing attitudes, elicited involvement, and elicited attack of inoculated and control participants. Reliability of all scales was gauged using Cronbach's coefficient alpha.

Receiver prior attitude and initial issue involvement were employed as covariants. Attitude toward the U.S. military presence in Iraq was assessed using six bipolar adjective pairs employed in recent inoculation research (Burgoon, Cohen, Miller & Montgomery, 1978). Adjective pairs included negative/positive, bad/good, unacceptable/acceptable, foolish/wise, wrong/right, and unfavorable/favorable. The reliability coefficient for prior attitude was $\alpha = .97$. Issue involvement was operationalized as the importance or salience of one of three issues about the U.S. military presence in Iraq and was assessed using a version of the Personal Involvement Inventory (PII) (Zaichkowsky, 1985). Six items of the PII were employed in this study including: unimportant/important, of no concern/of much concern; means nothing/means a lot; doesn't matter/matters to me; insignificant/significant; and irrelevant/relevant. Reliability for the issue involvement scale was $\alpha = .96$.

Experimental Materials

The study sought to compare the effects of three versions of the same news story about these issues. The versions were: picture with caption, story only, and picture with story. The issues concerned the repatriation of remains from the Iraq war, the Abu Ghraib prison scandal, and the battle for Fallujah. Word counts were created to be of comparable length to reduce bias. Word counts of the three news stories were: repatriation of remains – 591 words, Abu Ghraib prison scandal – 595 words, and the battle of Fallujah – 597 words. The dummy message also focused on the effects of visual imagery, rather it arbitrarily addresses a U.S. state's intention to be named a historic landmark and prohibit large, chain retail businesses from expanding their business.

The inoculation message was a generic preemption against the influence of visual images in forming personal opinion. The inoculation message had a word count of 346 words. A dummy message was also created. The dummy message used a 345 word count, close to that of the inoculation message, but it did not focus on the effects of visual imagery, rather it arbitrarily addresses a U.S. state's intention to be named a historic landmark and prohibit large, chain retail businesses from expanding their business.

Because inoculation theory posits that threat is a motivating catalyst in resistance, the first paragraph of the inoculation message was designed to elicit threat. Threat was operationalized as a warning of an impending news story featuring potentially influential

Impact of News Images 18 Pictures. The remainder of the inoculation message raised arguments that warned of the impact of visual imagery on their position.

Procedure

The study was conducted in two phases. Phase 1 and 2 experimental booklets were prepared for participants. During Phase 1, demographic information was collected on research participants to include, name, gender, age, and year in school. Additionally, an exposure and attention measure of newspaper and TV news use was collected.

Phase 1 was conducted over a period of 5 days. Participants were randomly assigned to one of three events including; repatriation of remains, the Abu Ghraib prison scandal, and the battle for Fallujah. Participants were then assigned to the non-visual (text only), visual, or both visual and textual condition. Subjects were assigned randomly with the exception that care was taken to ensure conditions were relatively balanced in regards to initial involvement, additionally, treatment cells were assigned more subjects than control cells. Random assignment was based on a 2 to 1 ratio with two participants selected to the inoculation category for every one person subject to the control category. Phase 1 booklets contained an inoculation message warning against the impact of visual imagery on their opinions. It also contained a questionnaire that assessed the number of days participants spent watching TV news, the number of days spent reading world and current events in the newspaper, the amount of attention participants give to national and world news stories, and the amount of attention given to pictures that accompany a newspaper or magazine news story.

Dependent Measures

Research participant attitude concerning the inoculation message was assessed using six bipolar adjective pairs developed for use in resistance research by Burgoon and colleagues (1978). Adjective opposite pairs were: unacceptable/acceptable, foolish/wise, unfavorable/favorable, negative/positive, bad/good, and wrong/right. Alpha reliability of the attitude scale was $a = .98$.

Threat elicited by the inoculation treatment was measured using six bipolar adjective pairs employed in all recent inoculation studies. It was assessed in Phase 1, following administration of the inoculation treatment. A six-point scale consisting of bipolar adjective pairs was used to evaluate perceived threat against the person's thoughts regarding the possibility of persuasive counterarguments influencing their position on the presence of the U.S. military in Iraq (perceived threat). Adjective pairings consisted of; not dangerous/dangerous, non-threatening/threatening, calm/anxious, not scare/scary, not harmful/harmful, and not risky/risky. Next, a thought-listing technique (Brock, 1967; Greenwald, 1968) was used to establish potential arguments against their position regarding the U.S. military presence in Iraq and subsequent responses to these potential arguments. After completing their list, subjects were asked to rate their arguments on a 1 (weak) to 7 (strong)-point scale, and then rate their thoughts and feelings on the responses to these arguments from 1 (weak) to 7 (strong). Another six-point bipolar adjective scale was used to measure the research participants' general attitude toward the U.S. military presence in Iraq as cited earlier. Multiple item indicators were used to include; unacceptable/acceptable, foolish/wise, unfavorable/favorable, negative/positive, bad/good, and wrong/right. Lastly, the importance of viewing casualties from the battle for Fallujah was studied again using a six-point bipolar adjective scale (Zaichkowsky, 1985). The scale included; unimportant/important, or no concern/of much concern, means nothing/means a lot, doesn't matter/matters to me, insignificant/significant, and irrelevant/relevant.

During Phase 2, participants were asked to complete an open-ended measure on which they identified possible arguments contrary to their own position and then listed potential responses to those arguments in the spaces provided. The procedure is based on the thought-listing technique that was pioneered by Brock (1967) and Greenwald (1968). However, past use of this technique alone has proven to be inadequate in inoculation research (Pfau et al., 1997). Eagly and Chaiken (1993) have argued that thought-listing does not reflect the amount of cognitive effort expended. In addition, thought listing, by itself, fails to acknowledge the prospect that respondents may view their own thoughts as varying in power and intensity, both in cognitive and affective terms. Therefore, after generating their list of arguments contrary to their position and responses to those arguments, respondents rated perceived strength of arguments contrary to their position and strength of responses using a 1 to 7-point scale.

Multiple item indicators were used to evaluate emotion. The emotion scale was based on the previous work of Dillard and colleagues (Dillard, Plotnick, Godbold, Freimuth & Edgar, 1996; Smith & Dillard, 1997). Featured emotions included anger (angry, irritated, and annoyed) $a = .88$, surprise (surprise, astonished, and amazed) $a = .84$, puzzled (puzzled, bewildered and confused) $a = .85$, sad (sad, dreary and dismal) $a = .75$, fear (fearful, afraid, and scared) $a = .92$, and pride (dignity, honor, and gratification) $a = .80$. The category of pride is added to this scale for the purpose of this particular study. Zaichkowsky's PII (1985) was used to assess participants' attitudes toward the U.S. military presence in Iraq. See above for specific inventory items.

III. RESULTS

This investigation sought to determine the impact of news story form on involvement, emotions and attitudes toward the U.S. military presence in Iraq. Specifically, the study assumed that, compared to print news text, news photos of combat-related activities may exert significant influence on public opinion. The investigation then tested the potential of inoculation messages to preempt the influence of print news photos.

Hypotheses 1-3 examined the relative impact of three print news forms--pictures with captions, pictures with full text, and text only--on subjects' attitudes toward the U.S. military operations in Iraq, their involvement levels toward specific military issues and the extent to which news stories elicited affect in readers. In particular, the hypotheses predicted that, in comparison with text alone, news photos with captions and photos accompanying text would increase involvement levels, elicit greater emotional responses, and undermine attitudes about U.S. presence in Iraq.

Hypotheses 1-3 posited that, compared to text alone, print news story photos exert greater impact on readers' attitudes towards U.S. military presence in wartime, enhance involvement levels, and elicit far greater emotional response to stories. These predictions were all partially supported. The pattern of means displayed in Table 1 clearly reveals how people responded to the news story forms. News stories with pictures with captions were clearly different than either news stories with text alone or news stories with full text. Scheffe post-hoc tests were computed in order to assess the influence of news photos with captions. The results indicated that print news photos with captions undermined participant support for U.S. military presence in Iraq compared to news text alone, $t_{61}=5.70$, $p<.01$, and to photos plus full text, $t_{62}=4.80$, $p<.01$. Scheffe post-hoc tests were also computed in order to assess the influence of source credibility of news photos and news photos with accompanying text. The results indicate that print news photos with captions have a greater influence on source credibility than news photos with accompanying text, $t_{61}=2.31$, $p<.05$ and the text only condition, $t_{60}=2.65$, $p<.01$.

The underlying reasons for this outcome are clearer given the results of news photos on participant involvement and emotion. Compared to news stories accompanied by full text, news stories with photos elicited greater involvement, $t_{62}=2.88$, $p<.01$, more surprise, $t_{61}=2.95$, and greater puzzlement, $t_{62}=4.41$, $p<.01$. Also, news stories with photos produced: more anger than either text alone, $t_{61}=3.25$, $p<.01$, or photos with full text, $t_{62}=4.56$, $p<.01$; greater sadness than either text alone, $t_{62}=3.60$, $p<.01$, or photos with full text, $t_{62}=4.87$, $p<.01$; more fear than either

Impact of News Images 24 text alone, $t_{61}=2.44$, $p<.05$, or photos with full text, $t_{62}=5.39$, $p<.01$; but less pride than news text alone.

In short, news stories with photos exerted unique effects, both in comparison to news text alone and photos accompanied by full text. Thus, part of Hypotheses 1-3 is clearly supported by the pattern of results: compared to news text alone, exposure to news photos reduces support for U.S. military presence in Iraq, in large part because it wratches up reader involvement levels and stirs their emotions. However, contrary to prediction, photos with full text do not have this effect on readers. These results are conservative given the limited power of all statistical tests.

In addition to these findings, the pattern of results revealed a main effect for topic or issue. This was not predicted and, hence, of limited interest to this investigation. However, as Table 2 illustrates, the repatriation and the talking of Fulljiah news stories functioned about the same across dependent variables. However, both differed in effects from the prison scandal story. This would be a concern for this investigation if not for the fact that the pattern of differences were uniform across all conditions.

The results clearly indicate that news photos can undermine support for war. The next question is whether anything can be done about it, especially since news stories in wartime often break prior to the release of photos. This investigation tested the potential of inoculation as a strategy to preempt the influence of print news photos and Hypothesis 4 predicted that it would dampen the subsequent effects of news photos across the dependent variables: final attitude toward U.S. military presence in Iraq, elicited involvement levels, and elicited emotional responses (surprise, puzzlement, anger, sadness, fear, and pride).

Although there were no predictions featuring gender, because of the previous results, which revealed powerful effects for the covariate of gender across dependent variables, it was incorporated into the design employed to assess Hypothesis 4.

To assess this prediction, a 2 x 2 MANCOVA was computed assessing the impact of the independent variables of experimental condition (control and inoculation) and reader gender (male and female) on a number of dependent variables: final attitude toward U.S. presence in Iraq, elicited involvement, threat, immediate and subsequent counterarguing output, and elicited emotional response (surprise, puzzlement, anger, sadness, fear, and pride). Participants' initial attitude was treated as a covariate.

IV. DISCUSSION

This study had a two-fold purpose. Not only was it designed to determine the impact of photographs on pre-existing news stories, but also to determine whether inoculation has any ability to reduce the amount of persuasion such photos may exert on individuals' affect, involvement, and attitude. Previous research (Pavio, 1986) showed that visual imagery does affect attitudes in a very different way than textual messages. Mitchell (2001) claimed that the positive or negative valence of a photograph can affect a consumer's attitude toward a product. However, the current study is the first to review how this phenomenon might exist when applied to wartime newspaper coverage. Wartime photography has presented some of the most enduring images from the nation's history. Photographs taken by embedded journalists in the Civil War, photographs of the dead and dying from the D-Day invasion in World War II, and photographs from the Vietnam War not only document this country's history, but played a powerful role in shaping public opinion about the conflicts.

The conflict in Iraq is embroiled in a public opinion war that is incredibly significant and surely a vital aspect of the overall mission plan. Maintaining a positive public opinion is undoubtedly a major concern of the current administration, however, the deaths of military service members, civilian casualties from U.S. military attacks, and the Abu Ghraib prison scandal are all incidents which are likely to have affected public opinion about the war.

In each of the above cases, textual stories of these issues were in print before actual photos were released to the public. The stories appeared to obtain a much more prominent role in news coverage following the release of photographs depicting these events. Understanding the extent of the impact of these photos is a primary intention of this study. If military public affairs practitioners were aware of this trend, they would have the opportunity to be proactive in circumventing this erosion of public support when it is known these types of photographs are going to be released. Furthermore, they could plan long-term strategies based on the knowledge of this effect.

Much of the information that leads us to believe photographs impact public opinion is circumstantial and anecdotal. What little empirical research exists stems from the marketing realm, which supports prevailing thought that photographs exert a greater impact than text on attitudes (Houston et al., 1987), involvement (Newhagen & Reeves, 1992), and affect (Dillard & Meijnders, 2002). This study seeks to extend this body of knowledge to print media in a way not quantitatively tested previously.

The first three hypotheses stated the expectation that: a) photographs with captions and b) photographs with full text would exert greater impact on readers' (H1) attitudes, (H2) involvement, and (H3) affect as compared to text only. These hypotheses were only partially supported.

Testing of the hypotheses found that the photographs-only category displayed significantly more attitudinal, involvement, and emotional impact than either the text-only or pictures-with-text categories. A possible explanation for why the text and photograph combined did not exert the predicted superiority over the text-only category could be that they exert persuasion in different ways. Visual images are inherently emotional in nature while text tends to be cognitive in nature, using arguments and details to more fully explain the full issue. In the photograph-with-text category, the text may serve to dilute the powerful, instantaneous emotion generated by the photograph and provide a more balanced understanding of the issue instead of eliciting a purely emotional response. It would be interesting to discover in future research whether the photograph-only condition or the photograph-with-text condition would have the longer-lasting effect on recall of the issue.

Knowing the extent to which images affect opinions is important, but the question that follows naturally, "What can we do about it?" is equally valuable. Negatively valenced photographs such as the three selected for this study certainly would cause military public affairs practitioners to initiate crisis response procedures. However, most procedures involve "after-the-fact" image restoration. Inoculation provides a potentially effective proactive approach to the release of negatively valenced photographs.

This is the first time inoculation has been studied in relation to photographs of war. Inoculation theory has, however, proven to be effective in reducing persuasive appeals over a wide range of applications including: political campaigns (Pfau & Burgoon, 1988; Pfau, Kenski, Nitz, & Sorenson, 1990), smoking prevention (Pfau Van Bockern, & Kang, 1992), commercial advertising (Pfau, 1992), public relations (Burgoon, Pfau, & Birk, 1995) as well as others and, therefore, offers a potentially effective application strategy in this context as well.

A somewhat intriguing result is that the inoculation message failed to confer resistance to males, but worked for females. Women in the control group exhibited a more significant impact from the photograph than those inoculated against. Women's attitudes toward the war in Iraq were initially much more strongly against the war than men's attitudes, and the photographs exerted a greater impact on the women's attitudes than men. The study wasn't designed to reveal the intricacies of gender differences though, so further research to examine this finding would be useful. It should be emphasized however, that this ineffectiveness of inoculation to function on males in this study is likely to be due to the military nature of the study.

This study proves valuable to providing information regarding the impact of photographs of the Iraq war on attitude, involvement, and affect, in addition to the effectiveness of inoculation regarding images of the war. However, some limitations must be considered in the analysis of the research. Lack of power, lack of previous research, and sampling method pose certain limitations for the study.

Lack of power in the control group limited the assertions made in hypothesis four, which stated those who were inoculated would demonstrate less attitudinal influence, less elicited involvement and less elicited affect. Although sufficient to make certain assertions, the small number of participants in the control group limits the strength of the inoculation conclusions drawn from the data. Also, it was not necessary to inoculate against photos and have the condition of text only in the experimental group. The text-only condition was deleted during the running of analysis.

When reviewing literature for the four hypotheses, it became apparent an absence exists in the realm of research on images and their impact on attitude, involvement, and affect. The vast majority of the present research has been conducted in the fields of advertising and marketing and with television images. While it is exciting to forge into new territory, the noticeable void in research within the communication context made gathering background information difficult and

in some areas, impossible. This study will greatly benefit future endeavors in conducting research on print news images' impact by providing a much-needed perspective and baseline.

This study was conducted as part of a capstone class project for an eight-week Department of Defense class in Communication Theory. This compacted the research schedule severely limiting the planning and implementation time frames which could be allocated for this study. Within this condensed time frame, it was more difficult to eliminate the limitations that encompassed the study implementation. Without the constraints of time and resources, it is likely many of the limitations could have been removed, yielding more complete study results.

V. CONCLUSION

The results of the study showed that photographs do indeed have a tremendous impact on affecting people's emotions, involvement, and attitude. This gives the print media, who use photographs to great advantage, a powerful tool in shaping public opinion. These photographs are often in conflict with the desire of the military to maintain strong public support for the war effort. This study not only provides the military public affairs practitioners a more thorough understanding of the impact of photographs in a military news context, but provides a possible tool for use in resisting the persuasive impact of photographs valenced contrary to support of military objectives. While the study selected military news stories and photographs, research used to formulate the hypotheses were general in nature or reflected corporate marketing research, thus the results would undoubtedly generalize to a much broader spectrum of public affairs crisis communication contexts. There is no reason to believe that this study would only apply to news and photographs pertaining to a military topic.

While not all aspects of the study can be tested fully at this time, this research still provides new insight into how photographs impact affect, attitude, and involvement in a news setting. This study should have great applicability for public affairs practitioners as well as provide insight for future inoculation and image affect research.

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