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A Visual Representation and the Prediction of Emotion

Abstract

Many scholars believe that news images affect public opinion about political and social issues. Previous research has shown that emotionally evocative visual news texts improve learning and memory for information as well as affect audience perspectives on relevant issues. However, the majority of these studies do not address in detail what combinations of characteristics create emotionally compelling images. Through content analysis of news photographs and both quantitative and qualitative measurement of viewer's response to those images, this study begins to define what visual characteristics contribute significantly to emotional impact. The results of the content analysis also contribute to our understanding of what types of photographs appear most frequently in the news. The results show that features generally characterized by communication researchers as improving memory and learning: extreme negativity and deviation from normal visual experience were not well represented among the sample of 400 photographs from the Associated Press Photo Archive. Although the majority of photographs (65%) did have negative themes, only 5% of the images showed any kind of violence. Ten percent displayed the outcome of a non-violent disaster. The large majority of pictures were also photographed using vertical camera axes and straight angles. A sample of images from the content analysis was used as stimuli in the viewer-response portion of the study. Measures of the content served as independent variables in two regression analyses. The dependent variables were viewers' level of either positive or negative affect. Significant predictors of negative affect included the presence of violence, the effects of violence, and the effects of disaster. Negative emotional displays by the subject(s) of the image, and unusual juxtapositions of people and/or objects also predicted negative affect. A separate regression analysis was conducted for positive affect. The presence of violence, unusual juxtapositions of objects, and negative emotional displays had significant, but negative, relationships with positive affect. Positive emotional displays and viewing the more central subjects in the image from the front significantly and directly predicted positive affect. Finally, the degree of closeness among subjects in the image also significantly predicted positive affect. Analysis of open-ended responses generally supports these results.

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VISUAL REPRESENTATION AND THE PREDICTION OF EMOTION

Susan A. Sherr

A DISSERTATION

in

Communication

Presented to the Faculties of the University of Pennsylvania in Partial Fulfillment
of the

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Supervisor of Dissertation



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ABSTRACT

VISUAL REPRESENTATION AND THE PREDICTION OF EMOTION

Susan A. Sherr

Dr. Paul Messaris

Many scholars believe that news images affect public opinion about political and social issues. Previous research has shown that emotionally evocative visual news texts improve learning and memory for information as well as affect audience perspectives on relevant issues. However, the majority of these studies do not address in detail what combinations of characteristics create emotionally compelling images. Through content analysis of news photographs and both quantitative and qualitative measurement of viewer's response to those images, this study begins to define what visual characteristics contribute significantly to emotional impact. The results of the content analysis also contribute to our understanding of what types of photographs appear most frequently in the news. The results show that features generally characterized by communication researchers as improving memory and learning: extreme negativity and deviation from normal visual experience were not well represented among the sample of 400 photographs from the Associated Press Photo Archive. Although the majority of photographs (65%) did have negative themes, only 5% of the images showed any kind of violence. Ten percent displayed the outcome of a non-violent disaster. The large majority of pictures were also photographed using vertical camera axes and straight angles. A sample of images from the

content analysis was used as stimuli in the viewer-response portion of the study. Measures of the content served as independent variables in two regression analyses. The dependent variables were viewers' level of either positive or negative affect. Significant predictors of negative affect included the presence of violence, the effects of violence, and the effects of disaster. Negative emotional displays by the subject(s) of the image, and unusual juxtapositions of people and/or objects also predicted negative affect. A separate regression analysis was conducted for positive affect. The presence of violence, unusual juxtapositions of objects, and negative emotional displays had significant, but negative, relationships with positive affect. Positive emotional displays and viewing the more central subjects in the image from the front significantly and directly predicted positive affect. Finally, the degree of closeness among subjects in the image also significantly predicted positive affect. Analysis of open-ended responses generally supports these results.

Contents

List of Tables - vii

List of Figures - ix

I. Introduction - 1

II. Visual Communication: Rhetoric and Cognition – 6

III. An Anecdote about Icons - 50

IV. Media Effects on Public Opinion – 59

V. Theoretical Assumptions – 68

VI. Method – 74

VII. Content Analysis – 90

VIII. Open-ended Responses – 109

IX. Regression Analysis Results – 129

X. Discussion and Conclusions – 147

Appendix One, 167

Appendix Two, 170

Appendix Three, 171

Bibliography, 183

List of Tables

Table 1	Krippendorf's Alphas for All Variables	p.84
Table 2	Camera Axis	p.96
Table 3	Camera Angle	p.96
Table 4	Image Lighting	p.96
Table 5	Film Color	p.97
Table 6	First Subject Orientation	p.97
Table 7	Second Subject Orientation	p.97
Table 8	Third Subject Orientation	p.98
Table 9	Subject-Camera Distance	p.98
Table 10	Positive/Negative Theme	p.98
Table 11	Level of Aggression in Image	p.99
Table 12	Outcome of Violence	p.99
Table 13	Outcome of Non-Violent Disaster	p.99
Table 14	Positive Emotional Display	p.99
Table 15	Negative Emotional Display	p.99
Table 16	Unusual Physical Characteristics	p.99
Table 17	Abnormal or Unusual Behavior or Dress	p.100
Table 18	Unusual Juxtapositions	p.100
Table 19	Interactions	p.100
Table 20	Interpersonal Distance	p.100
Table 21	Factor Analysis	p.124

Table 22	OLS Regression	p.127
Table 23	GLS Regression	p.128
Table 24	Demographic Variables	p.134
Table 25	Negativity Variables	p.135
Table 26	Deviance Variables	p.136
Table 27	Intimacy Variables	p.138
Table 28	Final Regression on Negative Affect	p.140
Table 29	Final Regression on Positive Affect	p.141

List of Illustrations

Figure 1	Interaction Between Negativity and Level of Intimacy	p.90
Illustration 1		p. 171
Illustration 2		p. 172
Illustration 3		p. 173
Illustration 4		p. 174
Illustration 5		p. 175
Illustration 6		p. 176
Illustration 7		p. 177
Illustration 8		p. 178
Illustration 9		p.179
Illustration 10		p. 180
Illustration 11		p. 181
Illustration 12		p. 182

Chapter I **Introduction**

For decades, public opinion scholars have invoked Walter Lippman's (1922) concept of the "pictures in our heads" (1). They refer to Lippman's assertion that, since no one can experience first-hand all events occurring in the world, the only reality we know is the images we form in our own minds of what might be happening "out there." Lippman argued that those images are guided by what the media tell us. Since the Civil War, and most profoundly in this age of visually-oriented instant news coverage, the media not only help us create our images of the world, but literally provide us with the pictures that represent various events and issues. Lippman himself predicted the power of the then nascent moving image to accomplish for the viewer the "whole process of observing, describing, reporting, and then imagining" (92).

The belief that visual news communication has the power to profoundly affect public opinion frequently drives public policy. During the North Atlantic Treaty Organization's (NATO) war with Yugoslavia in 1999, one of the targets NATO forces attacked was a Serbian television station. The NATO forces argued that this was a military target because the station was broadcasting images of destruction aimed at igniting and sustaining hatred toward the NATO forces. Similarly, Yugoslavian officials prohibited foreign news organizations from photographing scenes or broadcasting images from areas of conflict. Officials on each side of the conflict clearly believed that images created by the opposition could turn public sentiment against them. The South African government

demonstrated its fear of visual communication by outlawing television broadcasts until 1976 (Nixon, 1994). Moreover, it was illegal for anyone to take or publish a photograph of Nelson Mandela during his imprisonment (Goldberg, 1991). Pro-Apartheid white South Africans anticipated that television might spur a public outcry against racism similar to the effect it had on American civil rights movement. They also feared the infiltration of liberal humanist values found in the broadcasts of other African and western nations. Those in power also are concerned about the potential for images to become mobilizing icons as a photograph of Mandela certainly would have.

The question of whether visual communication can drastically alter people's policy preferences is part of a broader inquiry into the power of the mass media to affect public opinion. The long-standing debate over the origins of public opinion and over the media's impact on opinion formation has produced some reasonable conclusions. Scholars and popular critics alike accept the media's role as agenda-setters, but fewer are convinced that the media dictate what people actually think about issues and political leaders. Results of many studies, both qualitative and quantitative, seem to lead to the conclusion that the media's impact depends upon a variety of factors. For example, people's own pre-dispositions and personal experience contribute to the media's ability to persuade. Also, the consistency of messages across media helps determine the degree to which the media affect opinion (Zaller, 1992). Finding cues about one's group membership in news coverage can guide individuals' decisions about where they stand on issues (Price, 1989). Furthermore, the obtrusiveness, or the degree

to which an issue has direct impact upon a person's life, will mediate individual responses to media coverage (McCombs, Eisenseidel and Weaver; 1991).

Finally, the content of the news coverage itself, its visual nature, framing, appeal to emotions, etc., circumscribes the ability of the news to tell people what to think about issues or candidates.

Many accept that news images altered public opinion about the civil rights movement, the Vietnam War, the war in Somalia, the Gulf War, the environmental movement, and the anti- child labor movement. In these cases, anecdotal evidence at least seems to point in that direction. Yet, we lack a clear definition of how and why images might function this way and what characteristics of an image give it the power to persuade. This is of particular importance because images are not unequivocal representations of truth. They can be altered or staged to achieve their maximum persuasive potential.

Why is it that some images remain in the national imagination and others quickly disappear from memory? Emotional impact seems to be one answer. It is certainly not the only one but, an image that can freeze the attention of a viewer, cause the viewer to cry with joy or sadness or raise her level of anxiety should be memorable and, consequently, more persuasive. However, this does not tell us why some images are more profoundly evocative than others. Certainly structural factors contribute to the intensity of an image (e.g. lighting, color, camera angle, etc.). Yet the content of the image, its subjects and objects, must help determine an audience's level of emotional response.

In conducting my research, I have developed an instrument for analyzing news photographs that can help to predict their potential for creating emotional responses in news audiences. I used the instrument to code a sample of news images and then presented those images to subjects who provided self-reports of the emotions they experienced as a result of viewing the images. A regression analysis was conducted using the content analysis variables to predict subjects' level and type of emotional response. Those variables that were found to be significant predictors can now be used to affect which other images will significantly impact a viewer's emotional state.

Although several scholars have attempted to analyze both visual news texts and audience responses to them, the majority of studies focus on only one side of the communication process. Studies of visual communication itself generally involve qualitative analyses of texts or detailed quantitative content analyses, and although studies of those kinds provide useful insight into the content of texts, they can only speculate about reception. Conversely, experiments increase our understanding of how messages disseminated in optimum conditions affect audiences, but this more scientific approach tends to neglect a thorough examination of the texts producing those effects. Even if in-depth analyses of stimuli are conducted, they are rarely described at length in the reporting of results. The same difficulty can be found in studies that use focus group or in-depth interviewing techniques. In order to present the most complete analysis of the effects of a particular kind of text on audiences, it is vital to study both the messages and the responses of the audience. For this reason, I conducted

this study using a multi-methodological approach that measures both the content and audience response.

The section that follows is a review of a somewhat wide-range of literature. I believe this is important because, with the paucity of studies relevant to visual communication, it is valuable to borrow from the knowledge gained by different types of scholars working with a variety of methodologies. Art historians, cultural critics, political scientists, and behavioral psychologists among others, all have something to contribute to understanding audience response to visual communication. Therefore, I intend to draw on as much of this valuable, but often unassimilated, knowledge as possible. I will initially discuss the processes through which the brain interprets visual imagery. This information contributed significantly to the development of a coding scheme for news visuals because ideally the variables coded should reflect the viewer's reception process. The next sections will describe the integration of visually persuasive materials into political communication, activist rhetoric, and coverage of foreign affairs. As part of this discussion, I will present a brief history of photojournalism and point to specific instances where documentary photography contributed to social change. I will also spend some time reviewing the potential of visual communications to have unique effects on memory and information processing. The final section of the literature review will address public opinion theories that increase our understanding of the ability of visual communication to contribute to the process of opinion formation.

Chapter II

Visual Communication: Rhetoric and Cognition

Visual Perception

The first step in deciphering how and why human beings respond to visual images is to understand how the eyes and brain interpret visual stimuli. Gestalt psychologists posit a process of perception that produces meaning through the assimilation of disparate stimuli into coherent wholes. They argue that the integrated meaning derived from a series of sensory stimuli is different from the meaning of the individual parts (Barry, 1997). For example, the way a painting is interpreted is quite different from the meaning of the individual lines drawn on the canvas. The early gestalt psychologists, Wertheimer, Köhler, and Koffka, first developed the principles outlining how various stimuli received by the brain are combined into complete and meaningful “gestalts.” Barry explains that, in Gestalt psychology, “meaningfulness was to be found in the reaction among the elements and in the relationship which formed a unified whole, not in the separate parts themselves” (44).

Four laws in gestalt theory suggest the way the brain makes sense of an image or scene (Lester, 1995). The law of similarity says that the brain will focus on the most basic and stable forms in the image. As a result, parts of an image constructed from basic shapes will receive direct attention. According to the law of proximity, the brain associates items that are close to each other within a scene. Meaning is therefore derived from the way objects interact in space. The law of

continuation asserts that the brain will compensate for the sudden discontinuation or change in direction of a line or line of objects, thereby accounting for the brain's ability to complete unfinished but recognizable shapes. According to the law of common fate, if there is one part of a whole moving in a different direction, tension is created. To illustrate this, Lester denotes the tension produced by an image depicting five hands pointing upwards and a fifth pointing down.

The law of proximity provides a foundation for a significant portion of the literature on visual persuasion (Mitchell and Olson, 1981; Messaris, 1997; Barry, 1997). Theorists in this area argue that the association of meaning among objects juxtaposed in an image can form persuasive arguments. In some of the earliest experiments in this area, Kuleshov found that when the same image of an actor was intercut with different objects, people thought they saw different emotions being expressed by the actor (Barry, 1997; Messaris, 1997). Messaris expresses concern that with these "associational juxtapositions," advertisers can make arguments they are prohibited from making verbally. For example, by juxtaposing a bottle of scotch with couple embracing, an ad image might imply that giving a beautiful woman alcohol will help to win her affection, a message that would subject an advertiser to criticism were it articulated in words. Scholars concerned with public opinion change should take particular interest in the way images create arguments that fall beneath the radar of rhetoricians focusing only on verbal text. A good deal of modern political communication is conveyed through images, and not through the spoken word.

Political advertisements provide numerous examples of image juxtaposition used as a persuasive technique. A Nixon ad run briefly during the 1968 campaign paired images of opponent Hubert Humphrey with photographs of the Vietnam war, violence outside the Democratic convention and Appalachian poverty with the hope that voters would associate these negative events with Humphrey (Jamieson, 1992b). In another example, many of Reagan's ads showed the candidate's image next to the American flag, a resounding symbol of the nation and of national pride. Here, the Reagan campaign wanted voters to transfer positive characteristics normally associated with the flag to the candidate running for election.

Other theories of perception also exist that either extend or contradict those of the gestalt psychologists. Recent research on perception can generally be divided into two areas (Barry, 1997). The first area extends gestalt theory and is exemplified by J.J. Gibson's view of perception. Gibson sees perception as a direct interpretation of the environment during which individual stimuli are formed into unified wholes. Gibson argues that it is the changes in light and shadows that allow vision rather than light and shadow themselves. We recognize objects because they remain constant and understand movement by seeing what does not move. Therefore, vision is the result of understanding change in the relationships among objects.

The other view uses a more computer-based model for understanding human perception. Theorists working within this more analytical paradigm see perception as the creation of meaning through the gathering and processing of

separate pieces of information. Here, vision is a series of steps through which objects are viewed with increasing complexity (Messaris, 1994; Barry, 1997). The foremost theorist in this area, David Marr suggests that vision begins with the formation of a primal sketch showing only the basic outline of the scene or object. In the second step, more details are filled in including surface texture and depth. This is followed by the completion of a three-dimensional mental model of the object. It is possible that formation of the primal sketch is what allows humans who do not have prior experience with pictorial forms to identify the objects in flat images without becoming confused (Messaris, 1994).

Political Communication and the Visual Image

The previous section outlined some of the reasons why images affect their viewers. Juxtaposition of objects, movement, and the stability of forms within an image contribute to determining how an image is processed. A more ambitious question is to ask what might give an image the power to persuade or to affect public opinion, and this is certainly an area in need of more research.

What work has been done concerning the impact of visual communication on public opinion generally focuses on political campaign communication. Scholars have examined the visual aspects of political ads, campaign coverage, campaign films and political debates. Moriarty and Garramone (1986), Moriarty and Popovich (1991), and Waldman and Devitt (1998) analyzed whether print news sources exhibit bias in their selection of photographs. All found differences in type and degree of visual coverage of candidates, but little evidence for an overriding ideological bias. Waldman and Devitt argue instead for the presence

of a “strategy bias.” In other words, the candidate ahead in the polls is pictured more favorably regardless of party affiliation, a trend with different, but equally serious implications for public opinion.

In her analysis of Ronald Reagan’s campaign film “A New Beginning,” Morreale (1991) studied the use of visual clichés and their contribution to the positive image of Reagan and the nation conveyed in the film. Working in a shorter genre, numerous scholars have conducted both qualitative and quantitative analyses of the images in campaign advertisements (Joslyn, 1980; Jamieson, 1992a; 1992b, Kern, 1989; Thorson, Christ and Kaywood, 1991a; Thorson, Christ and Kaywood b; Griffin and Kagan, 1996; Sherr, 1999).

The first Kennedy-Nixon debate of 1960 is a frequently mentioned example of visual campaign communication influencing the results of an election. According to a poll conducted the day after the debate, those who had watched the event on television thought Kennedy emerged as the winner. However, people listening to the debate on the radio preferred Nixon (Broadcasting, 1960). This result is widely attributed to Kennedy’s superior physical appearance compared with the sweaty, sickly Nixon. Scholars have called into question the validity of the polling process as well as the size of the sample (Kraus, 1996). Nonetheless, many view the debate as an early indication that in modern politics visual appearance triumphs over communicative competence.

Other research explores visual bias in television campaign coverage of candidates (Kepplinger, 1982) and in the facial expressions of the news broadcasters (Friedman, Mertz and DiMatteo, 1980) as well as changes in the

spatial configuration of the president's image in newsmagazines over time (Mullen, 1997). Much of this research focuses on the effects of vertical camera angle (or the relation of the camera to its subject) on responses to the political figure in the image. The angle used to photograph or film the subject creates certain impressions of a candidate or leader (Tiemens, 1970; Mandell and Shaw, 1973; McCain, Chilberg, and Wakshlag, 1977; and Messaris, 1997). A low camera angle creates the perception of power while a high camera angle conveys the impression that the viewer is looking down on the subject, making him or her appear less powerful. A straight-on shot portrays the political figure as someone who identifies with average people or is easily approachable.

Several of these studies (Kepplinger, 1982; Moriarty and Garramone, 1986; Moriarty and Popovich, 1991; and Waldman and Devitt, 1998) included measures of interaction with or audience response to the political leaders within the photographs. The content analyses employed in these studies measured whether the subjects were engaged in either positive or negative interactions with the crowd or their colleagues or were depicted in isolation. This is important because viewers can use the context provided by the responses of others to help evaluate the candidate or leader. However, I will argue that this is only one way in which interaction cues can function. More generally, the emotional valence of a situation should be much easier to comprehend when viewing two or more objects interacting than when viewing an isolated subject. This may result in a greater sense of identification with the subjects and a more intense emotional response to an image. The more complete the context provided by interactions

occurring within the image, the easier it should be for the viewer to read the image. This increased ease of interpretation may enhance the persuasive potential of the image itself.

Graber (1985, 1987) also incorporates a measure of interaction into her “gestalt coding” scheme. Gestalt coding identifies “cues and clichés normally used by average viewers in categorizing, judging, and inferring meaning from televised news in various judgmental areas” (27). According to Graber, deriving the gestalt or general theme of the news program is of primary importance because, in general, people do not remember specific details of newscasts. However, they may receive a general impression of the events being depicted.

As part of this gestalt, Graber suggests coding for the types of interactions being depicted. Since this notion is based on “gestalt theory,” it makes sense to pay attention to the way items are being juxtaposed with each other. Graber’s specific definition of interaction includes audience reactions, the setting of a political event, the types of questions being posed to a political figure, and the mood created by a particular situation. These are all useful criteria for judging interaction, but the concept is limited to a situation involving a candidate or politician. The notion of interaction can and should be expanded and nuanced to include more issue or event oriented news coverage. In order to expand this concept, the use of more generalizable criteria for assessing interaction may be necessary. Even though this might result in less specificity, if type of interactions taking place in an image do play an important role in the way the viewers respond to it, then even more general information would have explanatory value.

Memory and Emotion

Visual and verbal information are processed differently in the brain. This may be the reason for the frequent finding that people are better able to remember visual stimuli than verbal, and this could provide a reason why images may have more of an impact on public opinion than purely verbal information. However, whether people's tendency to remember visual texts is useful for recalling news or instead serves as a distraction from recalling more substantive information is controversial.

While Iyengar (1991) contends that television's visual images do distract viewers from learning more substantive issue information, Graber (1996) argues that visual images actually aid television news viewers in learning. According to Graber, people extract information more easily from audio-visual channels than from only verbal content, and visuals increase memory retention and involvement in the message. Approximately two-thirds of audio-visual information in television newscasts either "amplifies" the verbal information or contributes unique information to the broadcast (91). The types of visuals most frequently recalled are those depicting human beings (Graber, 1990). Some scholars concur that visual and verbal redundancy aids retention (Jamieson, 1992a; Neuman, Just, and Crigler, 1992). Others (Just et. al., 1992) say that people can be attentive to and learn from any information channel, but rarely do they do so from reinforcing channels. They also state that sufficiently meaningful visual content can be informative to voters even in the absence of verbal or written language. Yet, according to Just et. al., (1992), people either ignore information altogether or

alter the evaluative frame of both visual and verbal information to be consistent with their own knowledge or experience. Contrary to their prediction, Edwardson, Grooms, and Proudlove (1981) demonstrated that viewers had better recall for audio portions of television news stories accompanied by interesting video than for those with only talking heads. This evidence contradicts the oft-cited belief that visual content serves only to distract viewers from the information being provided in a news broadcast.

Regardless of whether it actually increases memory, people appear to have a greater appreciation for news that contains visual elements. Graber (1996) agrees with Neuman, Just, and Crigler (1992) that it is the combination of audio and visual tracks that is most successful at conveying information and creating affective responses in an audience. They also found that television contains more images than newspapers and magazines, and that people both recognized the high levels of visuality in television and believed that pictures increased their understanding of news stories. Young people prefer newspapers that have small photographs to those that do not (Wanta and Gao, 1995). In commercial advertising, ads featuring only visual information are more familiar to audiences than those with exclusively verbal text (Hirschman, 1986).

Researchers studying the vividness effect (Mitchell and Olson, 1981; Taylor and Thomson, 1982; Shedler and Maris, 1986; and McGill and Anand, 1989) hypothesize that because it is by definition more vivid, information conveyed visually should have a greater impact on judgments and recall than non-visual information. They suggest that visual information is more likely to result in

visualization by the receiver of the information, and information that causes people to generate mental images will be more available for recall and judgment making. For example, Babin and Burns (1997) conducted an experiment exploring the effects of visualization to determine whether images in advertisements affected attitude and whether there were differences in processing of ads with concrete images, non-concrete images or instructions to imagine with no accompanying image. They did find that concrete images resulted in the formation of more elaborate mental imagery. This correspondingly resulted in more positive attitudes toward the ad and brand. In general, however, research into the vividness effect has shown limited results. There is some evidence that when attention is manipulated as well as the content of the message, there is greater potential for vividness to have some impact (Taylor and Thomson, 1982). Manipulating subjects' level of elaboration about the message was also shown to increase the vividness effect (McGill and Anand, 1989).

The level of emotional response that results from viewing an image is another factor that is likely to affect memory (Bradley, Greenwald, Petry and Lang, 1992). According to Lang (2000), the presence of emotion-eliciting content in a message helps determine the way it is processed. Emotional stimuli seem to engage the involuntary attention system. This is most likely to our evolutionary advantage since emotion-laden information often relates to aspects of survival such as self-defense or procreation. The immediate and heightened attention facilitates processing.

Consequently, those images that create a greater emotional response may be more memorable to viewers and have a greater impact on public opinion formation than less emotionally evocative stimuli. Brosius (1993) conducted an investigation of the effects of emotional visuals on learning from television news. He considered not only whether emotional visuals affected overall recall about a news story, but specifically quantified how emotional visuals influenced recall of specific portions of the story. This study found that that emotional visual images resulted in more errors in recall. However, these errors occurred because viewers focused disproportionately on parts of the story illustrated by emotional visuals. When the number of emotional pictures was decreased, subjects made significantly fewer errors in recall. Although this study demonstrates a negative overall impact of visuals on recall of information within the news broadcast, it certainly shows that information accompanied by emotional images is far more likely to be remembered than other types of information. Although Brosius disparages the use of news visuals, his study demonstrates the clear potential for emotionally evocative news images to disproportionately affect learning and public opinion.

Part of the key to information processing of emotional content may be an interaction between the valence of the message and the mode used for message delivery. Lang and Friestad (1993) found that negative messages lead to a more significant encoding of visual information than positive messages. Conversely, positive information resulted in more verbal processing. There is evidence to suggest that both positive information and verbal information receive more left-

brain processing while both negative and visual information receive more right-brain processing. This congruence of processing centers provides an explanation for the linking of visual messages with negative information and verbal messages with positive information. It also may explain why public opinion about international crises often remains stagnant until the media begin disseminating dramatic visual news coverage. The information provided about these crises is often extremely negative with its focus on famine, war, and disaster. Therefore, the visual information is more likely to be remembered than the verbal reporting that may have preceded it. Viewers of negative or attack political advertisements also consistently recall visual information more rapidly than those who view positive or comparative ads (Newhagen and Reeves, 1991; Lang, 1991).

Aust and Zillman (1996) measured the effect of emotional victim testimony in television news on viewers' perceptions of social issues. They found that the use of close-ups and reactions shots showing victims displaying intense emotions affected audience responses. When the news segment exemplified a social problem with a victim and when the victim was visibly distressed, people perceived the problem as being more severe and more likely to present a threat to them personally. Subjects also reported more negative affect when viewing news reports with emotional victim exemplification.

There is controversy among emotion researchers about whether people respond to stimuli by experiencing discrete emotions (Nabi, 1998; Ekman, 1999) or by reaching points along two dimensions: valence and arousal (Lang, Kuljinder and Qingwen, 1995; Cacciopo and Gardner, 1999). Those who conceptualize

emotions as discrete believe that individual emotions (happiness, sadness, disgust, etc.) either evolved or were learned to enable people to accomplish universal life tasks. In this structure, each discrete emotion has its own physiological activities, antecedent events and responses.

Those advocating the latter position argue that emotion has two prevalent underlying dimensions: valence and arousal. Valence represents a range of responses from pleasant to unpleasant, and arousal represents the degree to which someone is energized or calm (Lang, Kuljinder and Qingwen, 1995). Davidson (2000) finds evidence for the existence of both discrete emotions and dimensional emotional experience. According to Davidson, both fear and disgust (two discrete, negative emotions) appear to activate the same anatomical area of the brain. However, activation of the amygdala appears to occur with the experience of fear whereas with disgust, the insular cortex appears to be more specifically activated. This presents the possibility that one area of the brain may be active for all negative emotions, yet for specific negative emotions, the tasks of processing are delegated to separate areas of the brain.

Cacciopo and Gardner (1999) propose a system in which negative and positive affective response emerges from separate evaluative channels that integrate in order to produce emotional response. According to Cacciopo and Gardner, the negative and positive channels are associated with different hard-wired responses. Even when an individual is experiencing no external input, there is a low-level positive output that the authors call "positivity offset." They argue that this makes people more likely to explore their environment. However, people

respond more quickly to negative stimuli, creating a “negativity bias.” This serves as protection against danger. Evidence of these differing responses resulted in the hypothesis that the two channels were separate, but integrate to produce emotion. They add that these integrated channels also interact with level of activity (arousal) in producing responses to stimuli.

A study conducted by Lang, Kuljinder and Qingwen (1995) was based on similar theories about the way human beings process negative and positive information. They posit that negative messages require less processing because we evolved to respond quickly to negative stimuli. However, they also argue that arousal increases processing capacity. The authors found that positive messages are more memorable than negative messages when controlling for arousal. Since negative messages are often arousing, the results of this study suggest that the level of excitation produced by negative imagery may explain the increased level of memory for negative visual information found by numerous researchers.

Although I will take sides the debate between discrete emotions and the valence/arousal construct, I will argue that people define their responses using familiar terminology that describes discrete emotions. Furthermore, it is far easier for coders to define a discrete emotion being experienced by a subject in an image than to evaluate where the subject falls on valence and arousal dimensions.

Although Lang et. al. (1993) and others have found the Self Assessment Mannequin (SAM) system, which uses a human figure symbolically experiencing increasing levels of arousal and hedonic valence as a way for subjects to indicate their own state of arousal, to be quite effective, I will nonetheless use adjectives

describing specific emotions to measure both the content of the images in question and the emotional response to that content.

This lengthy discussion of the mechanisms and functions of emotion begs the question: What makes visual stimuli emotionally stimulating? As Zillman, Gibson and Sargent argue (1999), “despite the plausibility that the causal attribution of effects to ubiquitous displays of ‘compelling’ images may have historical contexts, acceptable proof of such image effects is wanting. Moreover, it has remained rather unclear what it is that makes an image compelling. Compellingness is usually granted in retrospect (i.e. after an image is thought to have generated a dramatic effect). The concept thus tends to be circularly applied rather than rely on and implicate particular image properties” (203). The purpose of this study is to begin to name some of those illusive properties.

Lang, hman, and Vaitl (1988) created a set of images called the International Affective Picture System (LAPS) to use as stimuli in studies investigating the effects of emotional arousal. The researchers showed numerous photographs to various people ranging from the innocuous to the extremely violent and pornographic. Ratings of arousal and valence were aggregated for the subjects creating a standardized set of images with known effects. This work does not obviate the need for this study, however, because the LAPS research does not delineate what combination of content variables combine to create greater or lesser emotional responses. In addition, many of the photographs in this set are so extreme that they would never be shown in a mainstream news outlet. In fact, photographs were chosen for their ability to arouse emotion and

not for their representativeness. Therefore, a thorough analysis of the content of news photographs and their effects is still needed.

The Visual Rhetoric of Mobilization

Considering all the factors I have discussed above, the use of evocative, vivid, iconography employing familiar visual themes should be an effective way of delivering rhetoric intended to mobilize people for political action. When interpreting visual images, people do not need to spend a great deal of time sifting through information in order to receive the persuasive message. If a visual argument is disseminated widely and employs well-known cultural icons, the desired message can be delivered quite quickly. Such an image is also likely to be more memorable, particularly if it has negative content. It is for this reason that politicians depend to such a large degree on 30-second political spots rather than expecting voters to attend speeches and carefully consume newspaper articles about national issues. It is also why animal rights activists present photographs of tortured animals, anti-abortion activists hold banners displaying aborted fetuses, and television commercials present images of starving children when asking for donations to feed residents of impoverished countries. Not only do these types of images make their arguments quickly, but they stand as their own evidence. Even the most persuasive speaker must articulate a compelling argument to convince people that her cause or issue is worthy of support. However, with visual images, the evidence is, to some extent, inherent in the form.

Images of international crises are among the most widely assumed to have impacted public opinion. Kleinman and Kleinman (1996) discuss both the

negative and positive aspects of mass produced images of suffering. While these images have the potential to mobilize aid for those in need, the preponderance of these images also may result in desensitization or a sense of helplessness.

Kleinman and Kleinman also argue that the media have commercialized images of suffering and victimization and made them a form of “infotainment” (1). The authors use Kevin Carter’s Pulitzer Prize winning photograph of a dying Sudanese girl as a case study to examine the moral ambiguity surrounding the creation of these types of images. Carter photographed a very young child in the Sudan struggling to get to a feeding center. Her weakness caused her to stop moving, and, as she ceased her motion, a vulture landed nearby. Carter waited to see if the vulture would spread its wings, and when it did not, he took the picture, chased the bird away and observed the child as she continued to struggle toward the center. He did not assist her in any way. A few months after receiving the Pulitzer Prize for the photograph, Carter committed suicide. Although the demonstration of human suffering can lead to increased relief efforts, viewing people through a camera lens may also, if only temporarily, inhibit human empathic responses.

In her book, *Compassion Fatigue*, Susan Moeller (1999) addresses the media’s tendency to use images of disaster and suffering to create the perception of crisis, often where problems are long lasting and endemic. When these “crisis points” occur, the media audience is barraged with pictures of suffering, but these images “are wedged between the advertisements for hemorrhoid remedies and headache medicines” (Moeller, 35). Echoing Kleinman and Kleinman (1996),

Moeller argues that, “in that cultural context, suffering becomes entertainment-just another commodity, another moment of pain to get its minute or column in the news” (35). According to Moeller, this quality of news reporting leads to the kind of apathetic public response that is termed, “compassion fatigue.” Zelizer (1998) believes that it is not so much the commercialization of images of suffering but the substitution of being compelled to act with merely being compelled to see that is causing compassion fatigue. In other words, we are confronted, even overwhelmed, by images of atrocity, yet we are no longer compelled to act, merely to bear witness.

Moeller does note that, in the realm of international affairs, images can be the primary vehicle through which Americans understand and remember important information. In order to facilitate this understanding, photographs and footage often contain metaphors familiar to American audiences. For example, Madonna and child images are frequently featured in coverage of famine and war. Moeller also points to the prevalent use of Holocaust metaphors in coverage of genocide. This device was evident in the memorable photograph of Bosnian women looking through barbed wire from within a POW camp. The image elicited a response from a nation familiar with images of concentration camps. What gives these images their power is their connection with what is already known (Thompson, 1997). Zelizer (1998) refers to an “atrocities aesthetic” immediately recognizable to us when we see images of “the agonized collectives of survivors and victims, gaunt faces behind barbed wire, vacant stares of the tortured, and the accoutrements of torture” (204). Because viewers have

schemata in which to place these images, they are more quickly encoded in memory. The majority of people do not experience international events first hand, so these types of images often constitute our national memories of a foreign conflict or crisis. While difficult to quantify, these metaphorical references to the familiar make images more accessible and, most likely, more persuasive. It is worth considering whether metaphorical images of this kind are sufficiently pervasive within American society to be coded reliably in content analysis of visual texts.

There is some evidence that the inclusion of a visual image in charitable appeals is not as universally effective as popular belief would imply. Thornton, Kirchner, and Jacobs (1991) conducted several studies to test whether the inclusion of a photograph increased contributions made during door-to-door charitable appeals and to an in-store countertop solicitation. They also manipulated the familiarity of the charity. In the door-to-door appeal, they found no effect for familiarity of charity, from the use of the photograph, or from an interaction between the two. They made a second attempt, but altered the experiment so that the amount of money donated would be anonymous. The results were the same. However, when countertop displays were used, they found that contributions were significantly higher in the photograph condition than in the non-photograph condition. There was no significant difference for familiarity of the charity. The authors speculated that the difference resulted from the fact that other factors involved in interpersonal encounters (guilt, etc.) overwhelm the emotional appeal of a photograph. When those influences are absent,

photographs can make a difference. In an earlier study, Culbertson (1976) found that when subjects were presented with either verbal text or photographs, they rated verbal descriptions as having more emotional impact than vivid photographs expressing the same information. Interestingly, the majority of images in the Culbertson study that were rated as having greater emotional impact than verbal descriptions were those featuring children.

In an effort to determine whether emotional valence of photographs changes response to solicitations, Dyck and Coldevin (1992) compared the results of fund-raising appeals with no photograph, to those with a positive photograph and those with a negative photograph. The appeals requested donations for impoverished African children. They found that the no photograph appeal resulted in the highest response rate while the one with the positive photograph yielded the highest average contributions. The negative photograph appeal resulted in the fewest responses and the lowest level of contributions. The authors posited that approach/avoidance theory might explain the results as well as provide some explanation for public apathy concerning those in need. Another possible reason for these results is the isolation of the child in the image. The photographs consisted of individual children gazing out at the viewer. The images lacked the context for understanding visuals that the interaction among people and objects within the image can provide. Had the pictures depicted mothers and children or a family, it is possible that the response to the images may have been more powerful.

Dorothea Lange's famous photograph, *Migrant Mother* taken in 1936 presents a more positive example of how photographs of suffering can bring help to those in need. Immediately after developing her pictures of the impoverished mother and children suffering the effects of the Depression and Dust Bowl, Lange brought the photographs to an acquaintance who was an editor. She explained that the people in the picture and their fellow pea-pickers were dying from starvation (Goldberg, 1991, Lester, 1995). The editor notified the United Press who then contacted relief authorities, and the government immediately provided the community with food. Lange took the photograph while employed by the Resettlement Administration established by President Roosevelt in 1935 for the purpose of aiding farmers. New Deal programs such as the Resettlement Administration used photographs to show anti-New Deal journalists and politicians that there were Americans desperately in need of public assistance (Goldberg, 1991).

Imagery and visual display have played a significant role in activist strategies for over a century. Visual argument and spectacle were employed in both the women's suffrage movements in the United States and Britain and in the modern Feminist movement. This use of public spectacle and persuasive visual imagery provided the women's movements with a vehicle for argumentation and a way of gaining access to news coverage. The inclusion of imagery as an important mode of movement expression also forged a connection between women artists and the more broad appeal for women's rights (Tickner, 1988 and Broude and Garrard, 1994). In her detailed analysis of the imagery of the British

suffrage movement, Tickner (1988) explains that the Artists' Suffrage League was actually the first professional suffrage society. This organization produced posters, postcards, and leaflets used both in Great Britain and in the United States advocating for women's suffrage. Under the direction of the League's chairwoman, Mary Lowndes, the group published eleven posters made with lithographic techniques.

Another British group, the Suffrage Atelier also put faith in the efficacy of visual propaganda; the importance of employing talented artists to create the persuasive materials; and the need for inexpensive, rapid reproduction techniques and tools like the hand printing press. Of course, not only the pro-suffrage activists used imagery to make their argument. Both sides of the debate employed visual argumentation, and according to Tickner, both sides were influenced by the iconography prevalent in the society at that time. Tickner argues that all players drew on "the iconography of women in a late and dilute Pre-Raphaelitism, and in the contemporary advertising and magazine illustrations that surrounded them, much of it influenced by art nouveau" (30). In addition, the style of some of the Atelier artists was based on the images found in the contemporary broadsheets of the period.

Just prior to the turn of the century and through the Great Depression, documentary photography was used to mobilize social reform (Stange, 1989; Goldberg, 1991; Messaris, 1997). Around 1890, a combination of national economic conditions, a large influx of immigrants into the United States, and the beginnings of concern about threats to public health emanating from the slums,

led to the emergence of a reform movement to combat poverty (Goldberg, 1991). Reformers believed that if Americans became familiar with the deplorable conditions in which parts of the population were living, they would favor policies to address those conditions. Documentary photography emerged to create greater awareness. Jacob Riis is the most well known and influential reformist photographer of this period (Goldberg, 1991; Lester, 1995). Riis took pictures of the degenerating slums in order to call attention to their crowded, unhealthy conditions. Riis presented slide shows of his photographs to New York church congregations. His slide presentations were apparently quite affecting and had a significant impact upon his audiences. Riis also wrote a book called *How the Other Half Lives* featuring reproductions of his photographic images as well as week engravings. The combination of scientific evidence and powerful images helped to make the book more persuasive than other studies of the causes of poverty (Moeller, 1995).

Stange (1989) argues that, through his use of slide shows and dramatic lectures, Riis encouraged his audiences to perceive the presentations of the poor as entertainment, and that by “simultaneously titillating his audience with photographic versions of conventional urban subjects and exhorting them to take up tenement reform as a basis for class solidarity, Riis affirmed middle class privilege, associating the images he showed with both entertainment and ideology” (XV). Similar to the arguments of both Kleinman and Kleinman and Moeller, Stange criticizes the use of photography to mobilize assistance for those in need without consideration of what the pictures say about the people they

represent. Nonetheless, according to Goldberg, Riis was the most effective reformer working at the end of the nineteenth century. One of his photographs helped prevent a cholera epidemic in New York.

Another acclaimed documentary photographer was Lewis Hine. In 1907, under the auspices of the National Child Labor Committee (NCLC), Hine began taking pictures exposing the deleterious effects child labor had on young workers (Goldberg, 1991). Hine took numerous photographs in southern textile mills where child labor was prevalent and used those images in a variety of public appeals. The photographs were used to illustrate Hine's own written reports, for newspaper and magazine publications, in NCLC publications, in posters, in traveling exhibitions, and to accompany NCLC lectures. Hine designed his photographs to be vivid and emotionally evocative. He was also the first to use before and after comparisons in social issue advertisements (Messaris, 1997). His poster *Making Human Junk*, illustrates the effect working long hours in poor conditions had on the physical condition of young children. At the top of the poster are children before they are hired as workers. They appear healthy and clean. At the bottom of the poster they appear after having been employed for some period of time. The children are stooped, sickly and dirty, and their faces are pale and thin. The prevalence of these images produced by Hine contributed to a change in public opinion about child labor and to the eventual passing of child labor laws.

Visual communication, use of artists, and other instances of political mobilization

Movements often employ artists for the purpose of communicating their messages to the public. From advertising to mural painting, artists use their craft to create persuasive visual material. For example, during World War One, all of the major nations involved in the war recruited artists to produce posters aimed at enlisting soldiers and Red Cross workers and at mobilizing civilians to participate in the war effort (Rickards, 1968).

Environmental activist David Brower (1991) writes about his years working for the Sierra club creating books of photography and films that were aimed at increasing public awareness about the need for a conservation movement in the United States. Brower describes the thought process that led to the adaptation of a 1955 exhibit of Ansel Adams photography into a book that could be disseminated widely and revisited at will:

“This is the American Earth,” needed to be rescued from its exhibition mode where people might wander in at the beginning of it, or the middle, or the end and not comprehend its context. It needed to become a book. And not just because it was an exhibit, but because it was an exhibit without precedent. There had been many conservation exhibits, albeit none of this magnitude, but none had put conservation, later to be called environmentalism as its context (12).

In reference to the combination of Adams’ photographs and the poetic text of Nancy Newhall that accompanied them Brower adds that, “when the words were read in the context of the image, something new sprang off the page, synthesized in the reader’s mind in the reader’s own way” (12). Newhall’s words proclaimed that beauty needed to be preserved to enable humans to escape from the frantic and anxiety-filled circumstances of modern life and “exalt” in the perfection of nature. The words gave the images a context that was relevant to the goals of the

movement, a practice frequently used to increase the persuasive potential of visual imagery.

While the contextual themes of the Adams exhibit may have been unprecedented, the use of photography for furthering environmental causes was not (Messaris, 1997). The campaigns in the 1860s and 1870s advocating the establishment of Yosemite and Yellowstone as a state and national park respectively included the use of photographs as evidence that the areas contained unusual natural sites worthy of preservation.

The AIDS activist organization ACT UP produced numerous graphic designs to protest against government inaction during the AIDS crisis (Crimp and Rolston, 1990). The most famous of these is a pink triangle with the words “silence = death” written in large white letters beneath it, an excellent example of an argument that is only comprehensible through a combined interpretation of the visual and verbal text.

In the 1980s widespread use of political protest posters began among anti-Apartheid activists in South Africa (South African History Archive, 1991). Because many black South Africans were left semi-literate by the Bantu education system, and their communities lacked the resources to create their own media, anti-Apartheid activists needed to find an inexpensive and uncomplicated way of expressing their political ideas and ideology. In 1978 in Botswana, a group of exiled South Africans began creating silk-screened posters for distribution in South Africa. In 1982, they held a culture and resistance festival in Botswana where they informed anti-Apartheid activists, and, less fortunately the

South-African government, about the benefits of poster creation. Ultimately, their posters were banned and their community attacked by the South African army. However, activists within South Africa had already begun to establish their own silk-screening workshops.

One workshop was established in Johannesburg where in-house training was given to activists and community groups in the art of poster creation and t-shirt making. This workshop eventually emerged into the “Screen Training Project.” Many of the posters created through the project share recurrent themes of defiance. There are numerous images of anti-Apartheid leaders including Mandela and others. People on the posters were constantly shown with fists raised, often united with masses of protesters. For posters that had color, the black, yellow, red, and green colors were generously applied. Many of the posters, especially those mobilizing people to participate in boycotts, showed workers surrounded by, using, or tossing away tools of labor like brooms, shovels, and mining hammers and picks.

Television News and Social Movements

As was mentioned in the introduction, television images of violence during civil rights protests, particularly those in Selma, Alabama are thought to have positively disposed Americans toward civil rights reform. The civil rights movement was covered regularly on television news (Robinson, 1981; Fishkin, 1995; Lester, 1995). The marches and violent confrontations involved gave it an audiovisual character suitable for television, while photogenic heroes and villains broadened the movements' television appeal. The march on Washington occurred and was covered by television news in August of 1963. Between the spring and summer of that year, the percentage of people viewing civil rights as the most important issue in the country rose from 4% to 52% (Robinson, 1981).

Attitudes toward the student movement of the 1960s were less positively influenced by television news coverage (Gitlin, 1980). Through his analysis of CBS news broadcasts and *New York Times* coverage, Gitlin concluded that the media framed the activist organization, Students for a Democratic Society, as deviant. The media focused on the violent aspects of the organization's social protest, and emphasized social polarization by legitimating less populated counter-demonstrations. The movement also attempted to use the media to disseminate its ideas and gain publicity, but Gitlin says that the interaction of the movement and the media essentially resulted in the destruction of the student movement through internal conflict and marginalization by news outlets. Television news and photographs appearing in the *New York Times* contributed to

this by depicting violent, chaotic scenes; by featuring activists who looked as though they were outside of society's mainstream; and by misrepresenting the numbers of counter-demonstrators opposing student actions.

The notion that American opinion about the Vietnam War was drastically altered by television news images is controversial (Braestrup, 1977). However, Culbert (1998) argues that the television footage and Eddie Adams' photograph of General Loan Nol shooting a North Vietnamese man in the head did have some impact on American opinion about the morality of the war. The problem with showing the world an image of distant events without the benefit of information to explain and contextualize what is being seen is exemplified by the Adams photograph. While many saw this image as an example of inhuman brutality against an innocent civilian, in reality, the victim was an armed commander of a VC sapper unit. It is the interaction, cruel, cold-blooded, and quick, between the two human beings within the image that makes the photograph so affecting. Without the knowledge of the identity of the two players, however, the interaction is misunderstood and the meaning of the image distorted.

Pearlmutter (1998), who disagrees with Culbert's conclusions concerning the Adams photograph, questions the rationale that assumes a country at war would react negatively toward the killing of an enemy. He argues that the trigger for opinion change about the war among Americans was the increasing number of casualties being reported on the nightly news, and not the visual coverage of Nol's death. This discussion of the Adams photograph is part of a larger argument put forth by Pearlmutter that what he calls, "icons of outrage," or

images that have achieved iconic status and are assumed to have changed mass opinion, are really accorded importance by elite journalists, academics, and politicians. They are not, however, triggers for opinion change among the masses.

This is a reasonable argument, and it is possible that the Adams image and others of its kind had little effect on the majority of Americans. However, there are other possibilities worth consideration. One can argue that it is an initial emotional response to an image, and not the reasoned deduction required to comprehend that the person being shot is the enemy and, therefore, deserving of death, that affects viewers. Pearlmutter would probably respond that even emotional response is context-driven. He points to the photographs taken by Nazis of Jewish Holocaust victims. The Nazis viewed these images as trophy photos, while others looked upon them with shock and horror. Yet, the Nazi perpetrators were inculcated into a culture that utterly dehumanized its victims. They were also experiencing the horrors on a daily basis, removing the element of shock that would in part account for an outsider's reaction. Likewise, someone living in the middle of a famine would not be horrified by an image of a starving child. In the United States, the Holocaust images undoubtedly produced widespread revulsion. For the Nazis, it was part of everyday experience. To an American, it is something unfamiliar that requires more active processing and attention. Sontag (1999) argues that seeing disturbing events mediated through a photograph or film in fact makes them more unsettling than witnessing them in person:

One is vulnerable to disturbing events in the form of photographic images in a way that one is not to the real thing. That vulnerability is part of the distinctive passivity of one who is a spectator twice over, spectator of events already shaped, first by the participants and then by the image maker. For the real operation, I had to get scrubbed, don a surgical gown, then stand alongside the busy surgeons and nurses with my roles to play: inhibited adult, well-mannered guest, respectful witness. The movie operation precludes not only this modest participation, but whatever is active in spectatorship. In the operating room, I am the one who changes focus, who makes the close-ups and medium shots. In the theater, Antonioni has already chosen what parts of the operation I can watch; the camera looks for me and obliges me to look, leaving as my only option not to look. Further, the movie condenses something that takes hours to a few minutes, leaving only interesting parts presented in an interesting way, that is, with the intent to stir or shock (88).

It may also be irrelevant whether a picture can change every mind or effect every viewer. Having an impact on the majority or on the most powerful may be all that is necessary for an image to have the power to change policy.

Photojournalism

The first person to consider the content and potential effects of a photograph is the photographer. From photography's inception as a technologically viable medium to the present, there have been both changes and consistencies in the kind of photographs journalists take when covering a story. Photojournalistic conventions establish the types of images to which people are accustomed and those that appear aberrant. Consequently, as we consider how certain characteristics of images affect viewers, is important to take into account the history of American photojournalism. Trends in technology and technique over time have determined the composition of images that people see. This section will highlight some of the important events that resulted in the evolution of photojournalistic practices and produced the types of photographs that are legendary for having impacted the way people felt about the world.

To some extent, the history of photojournalism runs parallel to the history of American war in the late 19th and 20th centuries. Beginning with the Civil War,

each American conflict affected photojournalism and, at the same time, photojournalism impacted the way the country responded to the war.

Photojournalism in the US did not come into its own until the Civil War. Until the late 1850's, early photographs, or daguerreotypes could not be reproduced to any significant degree. Therefore, photographs could serve no real journalistic purpose for vast numbers of people. The Civil War was the first American war to be photographed throughout (Griffin, 1999). However, the pictures were not seen by the majority of people because the technology did not yet exist that would allow photographs to be mass-produced in the pages of newspapers (Moeller, 1989).

According to Stapp, "probably the greatest influence on American photographers at the beginning of the Civil War were reports of Robert Fenton's photographs from the Crimea, where Britain and France were at war with Imperial Russia" (12). Fenton's work demonstrated the potential for capturing the events of war on film. The US Civil War coincided with the advent of new technologies that made photographic reporting a possibility. Although mass production was still not practical, American photographers had adopted the wet plate process that made photographs reproducible and publishable on a limited scale. Photographers Matthew Brady, Alexander Gardner, Timothy O' Sullivan, and John Gibson are the most well-known and prolific of the Civil War photographers. Gardner pioneered the battlefield image.

In the years immediately following the Civil War, photojournalism essentially ceased to exist. The limited technology of photography and

reproduction continued to prohibit the mass production of images within the pages of the newspapers. It was not until the end of the nineteenth century that photomechanical reproduction of images was possible. Moreover, by the early 1890s, commercially produced dry plates and rolls of film enabled the more rapid photographing of events (Stapp, 1988). As a result, photographers began capturing events as news, and the press was able to use these pictures to accompany written news stories. The end of the century also saw the first uses of flash powder, enabling photographers to take pictures indoors and in the darkened alleys of inner-city slums. It was at this time that Jacob Riis began documenting the plight of the ghetto dweller and presenting these scenes to the upper classes.

The Spanish-American War, considered the first war in which photojournalism played a significant role, also took place at the end of the 19th century (Moeller, 1989). The United States' involvement in the conflict lasted from April 25 to August 12, 1898. During the War, journalists were essentially unrestricted. Not only were they free to go where they pleased, but many took part in the actual fighting. Nonetheless, the photographic equipment itself often hampered freedom of movement. The more prestigious photographers who chose to bring large cameras and glass plate negatives regretted their decisions. The less well-funded photographers carried hand-held cameras that used newly-invented rolled film. Although initially considered less valuable, this equipment turned out to be more appropriate for the task of photographing war.

Press censorship was limited during the Spanish-American War, but the photographers did exhibit self-restraint in deciding what should be photographed.

They generally did not photograph American dead unless the face, and often the entire body, was well covered. Conversely, enemy dead were photographed without inhibition.

After the War came to an end, audiences were still hungry for the type of exciting photographs made possible by the Spanish-American War. Therefore, the early years of the twentieth century saw the first examples of large groups of photojournalists gathering at sites of disaster or tragedy in order to capture the events on film (Jussim, 1988). American photojournalists were also sent to document the war between Russia and Japan in 1904. Soldiers from the United States were not involved in the war, so *Colliers Weekly* magazine experimented with covering the war from both sides of the conflict (Jussim, 1988). Ultimately, a book was published featuring those images.

WWI was photographed on a large scale. Even before the United States entered the War, more of its press was sent to cover the conflict than that of any other country. Initially, only Army Signal Corps photographers were permitted to take pictures. On June 19, 1918, however, General Pershing authorized the accreditation of civilian photographers. All work of these photographers was subject to censorship by the military. Moeller argues that this censorship effectively bled all meaning from the photographs that came out of the War. According to Moeller (1989), these photographs did not convey “the quantitative leap forward in the horrors of war” that were witnessed during WWI (140). Censors did not want those back home to witness the true loss of life and deplorable conditions suffered by the soldiers. No photographs of dead

Americans were published in the press during the entire War, nor were photos of destroyed American property permitted to be published. In addition to the prevalent censorship, photos were also often liberally retouched.

Griffin (1999) explains that World War I introduced to the world the idea of large-scale photographic coverage of an event. This new concept ultimately led to the success of the picture magazines like *Life* and *Look*. Griffin notes that the growth in popularity of the magazines was also contemporaneous with and inextricable from the emergence of motion pictures, radio, advertising and political propaganda.

The Associated Press News Photo Service began operating in 1927 (Fulton, 1988). Unfortunately, it was not until 1935 that those pictures could be delivered by wire. Prior to that, delivery of photographs across the country could take anywhere from twenty-four to eighty-five hours depending on the mode of transportation. The ability to move photos over wire, therefore, revolutionized photojournalism. Also of significance in the inter-war years was documentary photography taken by photographers such as Dorothea Lange who recorded the suffering of Americans during the Great Depression. As discussed earlier, some of these images had direct effects on their subjects and on the nation's reaction to those in need (Goldberg, 1991).

The next monumental event for photojournalists was World War II. Like World War I, the military established a corps of photographers, but new to World War II was the ability of civilians to take combat photographs from the War's onset (Moeller, 1989). Photojournalists in WWII did meet with numerous

challenges, particularly because the war was so widespread. Reporters in the Pacific Theater, for example, had great difficulty finding transportation for themselves and their film. In the desert of Northern Africa, film was buried six feet under the sand so it would not become damaged by heat. Depending on the location, film might be rinsed in the ocean, in swamp water or in melted snow. Interestingly, the combined obstacles resulted in photographers almost never seeing their pictures after they had been developed. They continued to take photographs based on creative instinct without being able to witness the results.

Moeller explains that, when photographers did have the opportunity to see developed photographs, they found them to be unsatisfactory. The photojournalists lived through the war, and when they looked at the pictures, they were confronted with the inability of photographs to capture the full horror of life on the battlefield. Not only were photographs incapable of representing the smells and sounds accompanying a battle, but the danger of lifting one's head to take a photograph often prohibited capturing the most compelling action. Regardless, several pictures taken during World War II became national symbols, the most famous, of course, being Joe Rosenthal's "Marines Raise Flag Atop Mt. Suribachi," perhaps the most well known photograph in American history.

Many of the more well-known images captured during WWII were taken for photojournalistic magazines such as *Life* and *Look*. During the war, these periodicals had subscribers numbering in the millions (Moeller, 1989). *Life* magazine in particular conveyed news of the war through images rather than using the photographs merely as illustrations of written stories. After the

photographs and captions got past military censorship, editors of the periodicals had a great deal of autonomy in deciding how to present photographs. Evidently, they did not edit the photographs to the same extent as their story editor colleagues. According to Moeller (1989), “editors could enhance the impact of a picture by running it on a cover or by playing it large on the right-hand side of a double-page spread. They could subtly shift a photograph’s meaning by surrounding it with other images or texts of corroborating or conflicting subjects. And they could ignore a picture altogether. But compared to the wholesale rewriting of verbal reportage, the photographs remained relatively untouched (217-218).” The magazines also were far more likely to display the horrors of war to their readers than media outlets had been during World War I. Scenes of the dead were presented to viewers, although at times the magazines found it necessary to justify why they were featuring such disturbing images. Photographers did continue to photograph American dead from a perspective that was respectful to soldiers and which depicted their deaths as meaningful and glorious. Magazine photographers and editors were no longer satisfied producing images that masked the destructive nature of war, yet they upheld war as a worthwhile sacrifice.

These types of images were also beneficial for the war effort. Moeller (1989) explains that this new level of realism suited the propagandistic needs of the nation. During WWII, citizens at home and abroad were being asked to make considerable sacrifices. In order to demonstrate the merit of their sacrifice, the government needed to make citizens aware of the suffering of American soldiers

and the citizens of allied nations. More graphic depictions of war helped the government spread that message.

Perhaps some of the more horrifying images to emerge from the World War II era were photographs taken during the liberation of Nazi concentration camps. Zelizer (1998) writes that these photographs defined the way atrocities have been photographed and understood to the present day. The editorial caution exercised with battlefield pictures was not in evidence with images from the concentration camps. Explicit scenes of dehumanized living victims, corpses, and naked bodies were presented to the public with the goal of shocking people into awareness. Zelizer explains that the ability of photographs to provide evidence for the inexplicable gave them a new kind of authority that written eyewitness accounts did not possess. The majority of photographs focused on large numbers of corpses and often included other witnesses in the frame. Showing the reactions of eyewitnesses gave further credibility to the photographs. Whatever their limitations in depicting the true horror of the concentration camps, the pictures served as concrete evidence that the atrocities happened. Conventions used by photographers here would be echoed in subsequent depictions of atrocity. For example, the victims were not identified but instead were used as symbols of the overall events. By depersonalizing what was being depicted, the photographs forced people to bear witness to wide-ranging atrocities, but did not make the sight unbearable. According to Zelizer, this set an historical precedent for establishing bearing witness as the proper response to atrocity rather than acting against it.

After the War, photojournalism became a fully recognized profession. Picture magazines were in their heyday, and newspapers employed full-time photographers (Fulton, 1988). News photographers also established professional organizations and forums for recognizing outstanding examples of photojournalistic work (Griffin, 1999). During this period, the photo essay was popularized as a form of visual reporting. Anecdotal evidence testifies to the photo essay's enormous potential for influencing public opinion. Goldberg (1991) tells the story of W. Eugene Smith's *Life* photo essay, "Nurse-Midwife." The essay told the story of an African-American woman, Maude Callen, a trained nurse-midwife, who traveled thirty-six thousand miles a year throughout rural South Carolina in order to provide medical care to the poor black community. In the essay, Callen was quoted as saying that she dreamed of having a well-supplied clinic, but could never hope to raise sufficient funds. Within two years of the essay's publication, *Life* readers had donated \$18,500.00, and the clinic had been built. This outpouring of generosity is even more remarkable considering that it took place before the civil rights movement. According to Goldberg, when the photographer donated blood so one of Callen's infant patients could receive a transfusion, the nurses at the hospital were distressed that a white man was giving blood to a black child. Yet, the emotional power of the photographs overcame whatever racial prejudice might have ordinarily prevented the white community from reaching out, and motivated it to acts of benevolence.

The last war to be viewed primarily through print media was the Korean War (Moeller, 1989). David Douglas Duncan and Carl Mydans, photojournalists

for *Life Magazine*, are the two photographers associated with that war (Fulton, 1988). Duncan took many close-ups of the soldier's faces, capturing their exhaustion and suffering and created a book of photography called, "This is War!" During the first few weeks of the conflict, which were particularly brutal for the American soldiers, graphic images of dead Americans killed by atrocities were published in American newspapers and magazines. However, the government quickly recommended censoring these types of images. Yet, although images published subsequent to this pronouncement were less gruesome, they continued to lack the glossy patriotism of photographs from previous wars. The reality of death was depicted more starkly, and the notion of glory was lessened.

Both at the conclusion of the 1950s and, as the nation moved into the 1960s, photojournalists actively documented both domestic turmoil and the moral ambiguity of the Vietnam War. Photographer Philip Schulke, who covered the civil rights movement, said that, in the beginning, *Life* magazine was not interested in covering the events occurring in the South (Fulton, 1988). Black photographers were immediately arrested when arriving on the scene of a civil rights conflict. So Schulke, who was white, was hired to take photographs for the black-oriented *Ebony* magazine. Of course, as the movement grew, interest became more widespread, and news coverage intensified. Television was also becoming a major factor in the dissemination of visual news. The conflict-filled images emanating from the movement were ideal for the visual medium of television. Many argue that images of civil rights protests seen around the country

changed the tide of public opinion. In spite of the new predominance of television, certain still images were of particular importance in changing the minds of the nation in regard to civil rights. In Selma, Alabama on May 3, 1963, police used dogs and high-intensity water hoses against civil rights marchers (Messaris, 1997). Photographers captured these events, and the images were featured in newspapers across the country. President Kennedy expressed revulsion over the images, a sentiment shared by other Americans around the country. Civil Rights legislation soon followed.

The Vietnam War brought about a radical change in all American war reportage, including the photographs. Although the majority of journalists arrived in Vietnam supporting the war, after covering it for some time, many began to see American policy as misguided (Moeller, 1989). Photojournalists in Vietnam were bearing witness to events the government would have preferred were never brought to light, yet there was no official government censorship. Journalists were subject to two types of control over the content they were producing. First the Communist regime in Vietnam tried to prevent photographs critical of the war from leaving the country, sometimes by jailing and beating the photographers. Second, the US military participated in extensive management of the news. Correspondents could have their credentials rescinded if they deviated from voluntary regulations outlined by the media. In addition, the accuracy of official press-conferences, nicknamed the "Five O'Clock Follies," was highly suspect.

Photojournalists in Vietnam (Moeller, 1989) altered their perspective from focusing almost exclusively on American soldiers to examining what the war was

doing to the Vietnamese. Images of Vietnamese women holding injured or dead children, for example, were prevalent. This novel focus on civilians allowed a more critical view of US policy to emerge because reporters were examining the war from a perspective other than what was being presented by US military and government leaders. A new aesthetic also arose in photojournalism during the Vietnam War. The use of television and a “snapshot” movement in art photography produced a trend toward more random, alienated imagery (Moeller, 1989). The new aesthetic was embodied in three photographs that became icons of the war: Eddie Adam’s photograph of Loan Nol, Malcom Browne’s picture of the burning Buddhist monk, and Nick Ut’s photograph of napalmed children running down the road (Fulton, 1988; Moeller, 1989). All three of these photographs were unplanned, but the photographers just happened to be at the ready, waiting for something to happen. The three photographers worked for wire services, making their presence at unanticipated events more probable than if they had worked for feature magazines. Photographs from the Vietnam War are characterized by this more spontaneous, haphazard appearance.

Another innovation in war photography occurred when the newsmagazines began running photographs in color. There was controversy among photographers over whether color was the appropriate medium for covering war and over the proper subject matter for color vrs. black and white. In spite of this disagreement, the newsmagazines continued to use color because they saw it as a way of competing with television for the eyes of Americans.

Images of anti-war protest also made history during Vietnam. I have already addressed Gitlin's (1980) critique of photographs picturing anti-war protestors and their tendency to focus on violence and extreme behavior. At Kent State in 1970, John Paul Filo took the iconic photograph of that era. It showed a girl screaming in horror over the body of a dead student who had been shot by the National Guard. As Goldberg (1991) explains, "hundreds of other photographs and many feet of motion-picture film were taken at Kent State, but this arrested scream seemed to symbolize a nation's shock that its children were dying at the hands of its protectors" (237). The events at Kent State in combination with Nixon's decision to invade Cambodia re-ignited the anti-war movement, and Filo's photograph became one of its more potent symbols.

The most significant trend in visual news coverage in recent decades has been its increasing movement into television. Images from the Gulf War, for example, were mostly moving and shown on CNN. Still images of significant events have retained their importance, however, particularly in regard to the creation of icons. Still images are connected with several specific events of recent years. The war in Somalia, war in Bosnia, the deadly student revolts in Tiananmen Square, and the Oklahoma City bombing all produced memorable icons that encapsulated the events they covered and received wide acclaim. From Somalia, we saw both images of suffering, and then images of a dead American soldier being dragged through the streets. The Tiananmen Square massacre brought us a photograph of a brave citizen standing in front of a series of tanks, from Oklahoma City, the devastating sight of a rescue worker cradling a dead

baby in his arms, and from Bosnia, images of genocide reminiscent of those taken at the conclusion of the Holocaust. The subjects of the images resonated with those that came before: massive suffering, violence against Americans and American dead, bravery in the face of powerful oppressors, and the cradling of a dead child by a grieving adult. Although themes persist, some structural changes have occurred. Newspaper photographs are increasingly taken in color, and the advent of digital photography has given publications the ability to more easily create composite images. Furthermore, the use of the Internet for disseminating news has increased the number of news images that can be contained within a publication. Although, at this point, the front pages of newspaper websites have a limited number of photographs, the ability to link to other pages ultimately makes more images available to the viewer. Links also allow for images to be juxtaposed in different ways depending on who is viewing them. Like all modern media, consumption of news images is likely to become increasingly individualized. What this means for the emergence of icons remains an open question.

Chapter III **An Anecdote about Icons**

In April 2000, the news media began aggressively disseminating a pair of icons, as well as reflecting upon the nature of those icons and their value as visual evidence. These two pictures represented the culmination of a months-long media frenzy over the custody of Elian Gonzales, a six-year old Cuban child who had been rescued after the sinking of a boat carrying himself and his mother to United States. Elian's mother died, but Elian survived. Elian's father had relatives living Miami, and these relatives were given temporary custody of Elian. His father, who was still in Cuba, wanted him returned. The American government agreed, but Elian's Miami relatives would not release him. This stand-off became the focus of saturation news coverage involving the frequent filming and photographing of the boy going about daily activities and the protests in Florida's Cuban-American community demanding he be allowed to stay in the United States.

When Immigration and Naturalization Service (INS) agents ultimately broke into the Miami house to retrieve Elian, a photographer captured the moment on film. In the image, an INS agent holding a large weapon reached for Elian who was being held in a closet by the man who rescued him. The boy appeared visibly upset. He was crying, and his mouth was open as if he were speaking or screaming. Elian clung to his rescuer and looked at the agent fearfully. In addition to holding a huge gun, the INS agent was wearing a helmet and large goggles. Attorney General Janet Reno later argued that the gun was not pointing at the child, but the photo made it appear as though it was. This photograph

began appearing on television news early on April 22, 2000, the day Elian was removed from the home.

Later that day, after Elian had been delivered to his father, a second picture emerged. This one showed Elian happy and smiling in the arms of his father and next to his baby brother and stepmother. As soon as these dueling images began appearing on television and in newspapers, the media started commenting on what they might mean symbolically. They were also examined for their ability to depict both what had occurred in the Miami home and how the reunion of Elian and his father was progressing. The following is an excerpt from the April 23 broadcast of the *Newshour with Jim Lehrer* featuring a lengthy segment about the nature of the Elian Gonzales news coverage. The reporter speaking is Terence Smith.

After months of staking out the Gonzalez family home in Miami's Little Havana, the moment the media had been waiting for was over in less than three minutes. Cameras outside the home caught the pandemonium as federal agents rushed little Elian into a van, and away. Networks quickly broadcast that scene, but their earlier efforts to place a pool camera inside the house went awry. During the raid on the home, federal agents intercepted the camera crew in the yard. The crew claimed later that an agent broke their camera cord and even struck one of them with a gun. The only coverage inside was the camera of Associated Press photographer Elian Diaz. Invited in by the family, he caught the image that, for many, has already come to symbolize the Elian saga. That photo, plus this happier reunion scene, taken in private later Saturday at Andrews Air Force Base outside Washington and distributed by the father's lawyer, quickly framed the media debate over whether the government had done the right thing.

The story predictably dominated the nation's Sunday newspapers. The *Miami Herald*, which at times has devoted as many as 31 reporters to this story, used this huge headline atop what has become known as the rescue picture of Elian being hustled out of the house. Below the fold they ran the more ominous shot of an INS Border Patrol agent brandishing a gun. *The New York Times* focused instead on the so-called family reunion photo on page one. The paper ran a cropped version of the gun-toting agent on page 14. On the west coast, the "Los Angeles Times" gave the two images equal play, as did the "Washington Post," which emphasized the reunion that took place in its backyard. As the story was evolving, "Time" magazine went to press, playing up Elian and his papa. "Newsweek" went inside the raid. The still photos of the seemingly happy father and son were challenged in a Sunday news conference by Elian's cousin, Marisleysis Gonzalez, who contended that they had been doctored.

MARISLEYSIS GONZALEZ: Look how short the hair looks when he was taken out of the house. And look how long the hair is in the picture that they show today. That is not Elian smiling.

Clearly, Smith considered the placement of the photographs and the words with which they were juxtaposed to be an important part of the message the publications conveyed to their readers. Smith argues that the dueling photographs framed the way the media debated the correctness of the government's actions. His examples back this up. The *Miami Herald* was most likely to disagree with the government because it has as its audience the Cuban-American population in Miami. Furthermore, the actions taken by the government led to the eruption of protests in the streets of Miami and, consequently, discomfort and disorder for *Herald* readers.

The *New York Times*, on the other hand, a national paper read by political elites, would be more likely to represent mainstream opinion. Unlike the *Herald*, the *Times* ran the more sensationalist, anti-government photograph on the inside of the paper. In both cases, the papers marginalized some information in a way that reinforced the probable pre-dispositions of its readers. This certainly cannot be equated with presenting a doctored photograph to readers, but the way any photograph is presented also has the potential to slant the viewpoint of the audience.

The photographs featured by the different publications varied, and Smith strongly suggests that the choices made by the publications changed the perspective readers had on the events. He also contextualizes the controversy over the second photo within the discussion of the publications' layout choices.

At least in the opinion of this journalist, the various aspects of photographic presentation: placement, juxtaposition, and manipulation, are all considered criteria for evaluating the quality of information represented by the images.

Interestingly, in spite of the fact that photographs are, in theory, supposed to be indisputable representations of truth, Marisleysis Gonzalez argued the photos were falsified, that they conveyed a lie. The fact that her story was given any credibility at all is testimony to two conditions: the widespread mistrust of pictures in an age of digital manipulation, and the media's insatiable desire for stories that feature conflict. This concern over manipulation of images, a form of deception that occurs rather infrequently, overlooks the more overt messages sent by the media through the other two aspects of presentation discussed above: placement and juxtaposition (Messaris, 1997). A publication's choice of what photograph to highlight on the front page or cover conveys a clear message about which side of the Elian story the reader is supposed to accept. At the very least, such a layout decision tells audiences which images are deemed more credible by the publication in question. It also prioritizes the information conveyed in the image as the most important to the story. In a situation such as this one where there are only two images, each highlighting a different aspect of the story, it is difficult to justify prioritizing one over the other. Had knowledge about this particular story been less widespread, the choice of image might have affected people's opinions about the issue. In this case, most people had made up their minds about Elian before either picture was taken. For this reason, the photographs probably reinforced opinion rather than contributing to its formation.

On CNN's *Reliable Sources*, another show that analyzes news media practices, Howard Kurtz addressed the danger of favoring dramatic news visuals when covering complex stories.

This has been, as we all know, a battle of images. You're watching television, particularly yesterday morning, you see the raid, the armed federal agents, the frightened young boy. You see the angry relatives. You see the outraged protesters. In all of these dramatic pictures and a very tight focus on that, hasn't the other side, that of a father being reunited with his son, been somewhat obscured? (Howard Kurtz, *reliable sources*, CNN).

Kurtz and his fellow commentators agreed that the limited access to images of Elian and his father did allow disproportionate publicity for those opposed to the government's actions. However, although Kurtz argued that this rewarded the Miami relatives' manipulation of Elian's image, the journalists on the show defended media behavior. The following quote is by Drew Jubera, a television critic for the *Atlanta Journal Constitution*.

You know, those images were so powerful that there was no way to get around showing them. You know, TV did what it's supposed to do. It was there. It showed it. In fact, it did its job so well that it even co-opted what print does. It took a still photograph and made it its own.

These comments validate a frequent critique of television news coverage. If there are dramatic visuals accompanying a story, that story will be covered. If there are not interesting visuals, the story will not receive coverage. This can be even more deceptive in cases such as this one where the supposedly more dramatic images tell only one part of the story. Poll results that I will discuss below demonstrate that Kurtz may have been wrong in presuming that the photos of the INS raid were the most dramatic in the eyes of news viewers. Nonetheless, he articulates a troubling dilemma: if dramatic visuals are only available for one aspect of story, should the media limit their use of those visuals or, instead, cover one side of a

story at the expense of another? This, of course, presupposes that words are insufficient to convey parts of stories that cannot be depicted visually. It assumes that words, no matter how descriptive or compelling, will be drowned out by dramatic visuals. At least in regard to remembering negative information found in images, research supports this assumption.

In this case, the information contained in images of Elian and his father was positive. The boy was placed in a domestic setting resembling millions of family snapshots, and all the subjects of the photographs were visibly happy. However, this was a unique instance, making it more likely that visuals were necessary to tell this part of the story. In viewing the photographs of Elian and his father, Americans were looking for evidence that the boy was happy, thereby justifying the raid that initially shocked news viewers (or at least news makers). Citizens wanted to know that they were right all along when opining, “the boy belonged with his father.” Only a photograph could provide that kind of evidence. Various parties with personal interest in the case saying they had seen Elian and that he looked happy could not be as convincing as viewing an obviously cheerful child. His relatives’ contention that the picture had been manipulated was a clear attempt to undermine the validity of the evidence. However, as poll results I will discuss below demonstrate, the American public’s confidence in the picture remained unshaken.

Unlike many previous events that involved a widely viewed iconic image, public opinion polling was carried out before and after the release of the Elian Gonzales photographs. Between April 7th and 9th in 2000, the Gallup organization

asked a national adult sample whether Elian should remain in the United States or return to Cuba with his father (Gallup Organization, 2000a). Thirty-one percent said he should remain in the United States with his Miami relatives. Sixty percent said he should return to Cuba to live with his father. A similar question was asked between April 28th and April 30th, approximately a week after the seizure of Elian and release of the photographs (Gallup Organization, 2000b). Sixty-seven percent said that Elian should return with his father. Twenty-three percent said he should remain in the US. We should be wary of seeing this as an increase in support for Elian's return, however, because the question wording was altered slightly for the second survey. The first sample was asked what would be in "the best interest of the boy." The second was asked, "what do you think should happen to Elian." It is quite possible that some respondents thought it would be in Elian's best interests to remain in the United States, but that it was still correct that he go where his father wished.

Nonetheless, it appears that although the images were shown and discussed repeatedly in the media, they did not cause a shift in public opinion. Of course, this pair of images provided evidence to back up either opinion one might hold about the issue. If one agreed with Elian's Miami relatives (or wanted ammunition against the Clinton administration), the photograph of the boy and the gun validated one's opposition to the government position. If, on the other hand, you believed that the boy's father had his best interests at heart, you would find evidence demonstrating the correctness of your position in the second photograph. Therefore, this does not serve as a good case study for evaluating the potential of

news icons to create opinion change. Ideally, similar polls will be taken when a more univocal icon emerges. Gauging the effect of the image on public opinion might then truly be possible. Nonetheless, the widespread viewing of what are arguably extremely compelling images appears not to have effected any change on public opinion.

An ABC News survey polled respondents about the actual images two days after the government's removal of Elian from his relatives' house (ABC News Poll, 2000). They asked: 1) Did you happen to see the photograph of a federal agent with a gun just as he was seizing the boy, or not? and 2) Did you happen to see the photograph of the boy smiling after being reunited with his father later Saturday, or not? Eighty-three percent of respondents said they had seen the photograph of the federal agent and 17% said they had not. Eighty-one percent of respondents said they had seen the photograph of Elian and his father, and 18% said they had not. The responses to these questions demonstrate that a very large number of people saw the photographs. Evidently, when events become digested into a limited number of images, saturation coverage by the media can make the viewing of those images a nearly universal experience.

ABC News also asked respondents which of the two pictures struck them as the more powerful one. Forty-seven percent agreed that the picture of the federal agent was the most powerful, 43% thought it was the boy with his father, and 7% thought they were equally powerful. It is surprising that a more resounding majority did not find the image of the federal agent the more powerful of the two. Certainly the hypotheses I am testing here would predict that the

image with the large gun and unusual juxtaposition of weapon, INS agent and child would be the most emotionally evocative. However, the word powerful is ambiguous and may have resulted in different interpretations by respondents. Some may have understood powerful to mean “convincing,” and therefore answered on behalf of the photograph that was most consistent with their previously held beliefs. They may have also tried to identify the photograph they thought would be most convincing to other people. Of course it is also possible that a large number of people did find the second image more emotionally compelling. The positive representations of love and family may truly have moved people more than the violent photo taken in the Miami household. This would be contrary to a great deal of research into visual news content that says the most negative and the most unusual images are most memorable. It is unclear whether memorability can be equated with “powerfulness.” Yet, we can reasonably assume that a photograph considered powerful by respondents several days after seeing it was indeed memorable. So, we are left with a major inconsistency between what communication researchers think they know about cognition and news images and the responses given to this survey question.

I believe the most likely reason for this contradiction is the lack of clarity in the wording of the question. A more specific question or one that instructed the respondent to answer without considering his or her opinion on the issue might have elicited a different response. Unfortunately, until public opinion researchers begin to more consistently query their respondents about the visual aspects of news, there is no way of definitively resolving this question.

Chapter IV: **Media Effects on Public Opinion**

The broad topic of the media's impact on public opinion is far too extensive to be thoroughly reviewed here. However, there are several specific threads of research and theory that have direct relevance for the study of visual communication effects. One relevant theory is Price's (1989) hypothesis that the media help create issue publics by defining issues as sources of conflict among social groups. According to Price, when a group of people begins discussing its views about collective action on behalf of an issue, it becomes a "public." First, the existence of disagreement about an issue is disclosed to the public at large. Next, those with similar views about the issue form groups. Finally, various sides negotiate until a course of collective action is determined. The presence of these groups allows members of the public to align themselves with different sides of an issue. People look at groups and their leaders and determine to which they belong.

Price argues that this phenomenon helps explain the media's role in public opinion formation. The media provide cues to assist people in establishing their own group membership. As a consequence, media audiences are able to align themselves with a particular side of a public debate. It is widely understood that the media focus on the aspects of news stories involving conflict and in so doing, generally delineate quite clearly who is on which side of an issue. According to Price, this "provide(s) an opportunity for members of the mass public to respond to issues through one or another social identity" (672). The formation of public opinion is therefore a "social and communicative process" in which individual

opinions depend on the larger context of public debate (198). People decide less on what they think than on “with whom they stand” (198).

Citizens then process information based on stereotypes concerning other people’s opinions. Through its ability to show different kinds of people, visual communication has a unique ability to convey information about what types of people are taking positions on different sides of issues. As I will explain in the method section, I hypothesize that the level of identification a viewer experiences with the subjects in an image is an important factor in the emotional impact an image has on that viewer. The degree to which experiencing group affiliation with subjects in the image increases feelings of identification is worth consideration.

Being able to identify one’s own group through visual communication also permits negative communication concerning “others” to be depicted visually. In *Dirty Politics* Jamieson (1992a), argues that politicians often use subtle visual cues in their campaign ads to play to the racial prejudices of those likely to respond to those kinds of appeals. For example, Jamieson describes an ad broadcast by a conservative candidate in the 1991 Mississippi gubernatorial election. In the ad, the candidate argues for “workfare not welfare” while an image of an African-American woman is shown holding a child (94). An African-American woman is also shown pushing a shopping cart, representing a working person. Jamieson argues that those with racist beliefs would focus only on the welfare exemplar. Yet, by using black women in both examples, the candidate protected himself from censure.

Nelson and Kinder (1996) found significant effects of group-centrism on public opinion. Individual opinions about issues were affected by what group was perceived as being affected by the issue. Moreover, the authors argue that the power of group-centrism to affect public opinion is determined by the way an issue is framed. Subjects in Nelson and Kinder's experiments responded to visual and verbal frames and, in both cases, the frames helped determine the extent to which subjects responded to group cues. Perceived group affiliation can also affect people's willingness to express opinion. Using an experimental design and 67 undergraduates Oshagan (1996) analyzed the degree to which perceived reference group opinion is important in willingness to express personal opinion. Oshagan found that reference group opinion was more important than majority opinion in determining willingness to express contrary viewpoints. Those who agree with their reference groups are more likely to express their opinions. This provides further evidence for the importance of group membership in the formation, expression, and measurement of public opinion.

In light of this, the identification of social roles is clearly an important aspect of public opinion formation. One's own experience helps people understand to what social groups they belong. Real-world experience can also reinforce the impact of mass-mediated communication, modify it or negate it altogether. Although I do not directly measure personal experience (apart from basic demographic information), it is worth acknowledging that a person who has direct experience with an issue depicted in an image is likely to respond differently than one who does not.

Differences in experience among people can result from exclusively demographic variables like race and gender, and these variables have received considerable attention by public opinion researchers. They are also simple variables to study because they are easy to identify and are generally incontrovertible. The differences in voting patterns between men and women and the contrasting issue opinions of men and women have been frequent objects of research. Anderson (1997) associates the discovery of what is termed the “gender gap” with the realization that there was a more pronounced approval of President Carter among women. In an effort to find whether the gender gap applied to opinions about abortion, Anderson analyzed General Social Survey data from 1974 to 1994 and found that women were more likely to be at the extremes of the abortion issue than men. She also found that women of childbearing age were more than twice as likely than men to use stand on abortion as a criterion in make voting decisions. Other researchers found little difference between men and women on the abortion issue (Cook, 1997).

Survey results also demonstrate differences between men and women in relation to issues of violence (Cook, 1997). Women tend to have more pacifist opinions about issues like gun control, capital punishment, and defense spending. Less pronounced differences are found with “compassion” issues like welfare, eldercare, and environmentalism. Gender can be an important factor in determining response to visual communication because the gender of people within an image is generally self-evident. The association of women or men with

an issue could determine what thoughts the viewer will generate in reference to that issue.

Race is also a demographic variable that is identifiable through observation, although to a lesser extent than gender. Using data from the General Social Survey and the National Election Study from 1988-1991, Tuch and Sigelman (1997) found that race alone does not determine opinion about most issues. Class interacts with race in determining people's opinions about general social programs. However, black respondents are generally more in favor of race-based social programs.

Conclusions regarding the relative importance of personal experience and mediated information in formulating opinions about certain issues have been somewhat inconsistent. Depending on the relative effects of these two types of information, opinions of those who have been affected by a particular issue may not be influenced in any way by news texts, visual or otherwise. They also might be affected in a way that is different and perhaps more significant than those experiencing issues only through the media. Mutz (1994) explored whether the highly informed or uninformed citizen is more likely to politicize personal experience. Mutz hypothesized that people with high levels of knowledge would be more likely to use personal experience to make political judgements but less likely to use their own experiences as a basis for judging national conditions and the president. She found that personal experience with economic conditions did affect evaluations of the president, but only among the knowledgeable. However, the less knowledgeable were more likely to use personal experience with

economic problems to evaluate national conditions. In general, the strongest predictor of favorability toward the president was perception of economic conditions and not personal experience with economic hardship.

When self-interest is salient however, researchers find that it is a stable factor in establishing policy preferences. Smokers, for example, repeatedly disapprove of policies that affect them adversely (Green and Gerkin, 1989; Dixon et. al., 1991). When smokers make changes in their smoking habits they were more likely to favor restrictions against smokers. Although there are many more studies exploring this question, the exact nature of the relationship between personal experience and public opinion remains somewhat elusive. Suffice it to say that in any study of the impact of media on individuals, it is important to remember that personal experience may be playing a significant role in the way the stimuli are affecting the receiver.

Numerous researchers have suggested ways that the news media do shape public opinion formation through their influence on the public agenda, priming citizens to use certain criteria for evaluating public issues, or through more direct effects on what people think about issues. A wide-range of agenda-setting studies find that the media often determine what issues are salient to members of the public (McCombs and Shaw, 1972; McLeod, Becker, and Byrnes, 1974; Shaw and McCombs, eds., 1977; McCombs, 1980; McCombs, Einsiedel, and Weaver, 1991, Wanta and Wu, 1992; Watt, Mazza, and Snyder, 1993; Fan, Brosius, and Kepplinger, 1994). Demographic variables also may mediate the media's agenda setting effects (Wanta, 1997). McCombs, Einsiedel, and Weaver (1991) argue

that the news does affect the salience of issues for citizens and although they agree that people do actively construct their images of reality, they believe the range of that reality is limited by information received from the media and other sources. According to McCombs et. al., (1997) the degree of dramatic content in the news media has the most significant effect on issue salience.

One of the main concerns about the effect of visual news communication on public opinion is the potential for the television camera to limit or select the images that the public has the opportunity to see. In an interesting study of the effects of television news, Donsbach, Brosius, and Mattenklott (1993) compared the responses of people who attended a political event with those who watched the event on television. Three different 8-minute video recordings of the event were used, the first included positive audience reactions, the second included negative audience reaction, and the third was neutral. The researchers also made a fourth recording including the full 40-minute event. They found few differences between those who watched the full 40-minute version and those present at the event. However, there were effects of editing with the positive condition yielding the most positive responses. Less consistently, the negative condition resulted in fewer negative responses than the neutral condition.

Priming is another vehicle through which news can direct people's thoughts about public issues or personalities. Like agenda-setting, priming does not help to valence people's opinions but instead to create criteria for making political evaluations (Iyengar and Kinder, 1987). The priming hypothesis states that if the media provide extensive coverage of a particular issue, the public will evaluate

candidates or leaders based (in part) on their positions on that issue. Priming also can affect what issues people judge as most important. Miller and Krosnik (1996) found evidence in support of the priming hypothesis for presidential evaluations. Neutral media coverage focused on the economy provided a sufficient prime to cause people to judge the president based on economic conditions. They argue that a news story does not have to express a particular viewpoint or be valenced toward a specific opinion in order to prime audience standards for evaluation.

In their book, *News that Matters*, Iyengar and Kinder (1987) present experimental evidence that television news contributes significantly to people's evaluations of issue importance. In several replications of their experimental design, Iyengar and Kinder found that subjects who repeatedly viewed news segments about a certain issue, ranked that issue as more important than those in the control group. This relationship did not hold when the experiment was carried out using an issue that was already important to the subjects. Inflation and unemployment, for example, did not demonstrate the same effects as issues such as defense. Among those who were personally affected by certain issues, television news had a less pronounced but still apparent effect on evaluations of issue importance. They did not, however, find that vividness, defined here as personal stories, of information increased the priming effect.

As Aust and Zillman argue (1996) emotionally evocative visual materials should have powerful priming effects. As I discussed earlier, negative visual images tend to be remembered more easily than verbal information. The ability to recall information when it is time to make an evaluation is critical if one is to use

that information to evaluate a leader or a social problem. Even if it is not recalled verbatim, the information must at least create enough of an impression on the individual to be incorporated into the evaluation process. Therefore, negative information, delivered visually, should have greater priming potential than information delivered through other channels. Although I will not test priming directly, it is important to consider that strong emotional response may increase the likelihood that there will be a priming effect. This may be the route through which visuals have their most profound effect on public opinion.

Chapter V

Theoretical Assumptions

The multitude of ways visual communication has been used for persuasion and mobilization by the news media, politicians, activists, artists and photographers demonstrates, at least anecdotally, that images can contribute to changes in public opinion. In some cases, such as in experimental research exploring the efficacy of charitable appeals, results are inconclusive concerning the ability of visuals to supersede or even equal the persuasiveness of verbal information. Part of the reason for this may be that there is no set of visual characteristics that has been demonstrated empirically to be uniquely persuasive. The level of emotion in the appeal is often considered the key factor, but the operationalization of what is an “emotional visual” is inconsistent across studies.

Based on the theories I have outlined, I predict that there are specific attributes of news visuals that will predict people’s emotional response to images in the news. Several of the studies of emotion and cognition found that negative images resulted in greater learning and memory for visual information and for the information that immediately followed it. Presumably that negative information was remembered and recalled because people gave it more attention than other types of information. Emotional response to this type of imagery is necessary to arouse this attention. Otherwise, the valence of the stimuli would not be the relevant predictor of attention and memory. Considering that they arouse

attention, negative images should have a more profound effect on viewers than other kinds of visual stimuli.

These analyses will look at two kinds of negativity in relation to news visuals: the variables within the image that make it negative and the level of negative emotional response experienced by the person viewing the image. There are certain variables such as depiction of violence or disaster that would cause a photograph to be categorized as negative. In addition, there are formal visual variables, such as degree of close-up or lighting that might either increase or decrease the experience of negative emotion for the viewer. I will discuss the specific measures relevant to negativity in more detail in the following section. Briefly though they focus on appearance of violence, the outcomes of violence, disaster and negative facial displays of emotion.

Emotional displays are of great importance for two reasons. First, they serve as information about how images should be interpreted. Second, witnessing other people's facial expressions can result in the transference of the emotional experience to the viewer. These empathic feelings arise to some extent because of the human tendency to copy the facial expressions of the person with whom we are interacting (Cappella, 1993). According to Cappella, the Facial Feedback Hypothesis posits that the configuration of the facial muscles contributes to the emotional experience. Since we are predisposed to copy the expression of a person with whom we are interacting, emotions can be transferred from one person to another. Cappella further argues that sufficient empirical evidence exists to assume the validity of this hypothesis. So, mimicry of facial expressions

actually contributes to our own affective feelings. Not only do we mimic facial expressions, but we tend to respond physiologically and experience the emotion ourselves.

According to Social Learning Theory (Bandura, 1977), empathy occurs when, “modeled affect generates vicarious arousal through an intervening self-arousal process in which the observed consequences are imagined mainly as occurring to oneself in similar situations” (66). When these consequences are observed through a mediated visual text, social learning theory tells us that empathy contributes to the way people respond to those images. Furthermore, the emotion those in a picture are experiencing serves as a cue for how the viewer should react to the picture. Bandura (1977) says that events become evocative through what is called, “vicarious expectancy learning,” where one observes how others are responding and, through modeled affect, experiences that emotion oneself. Therefore, seeing an image of someone experiencing a given emotion should produce at least some of that same feeling in the viewer.

In addition to level of negativity, previous research tells us that unusual images should also enhance viewers’ emotional response. Newhagen and Reeves (1992) suggest that images that deviate from normal visual experience are more evocative than other types of images. They argue this is so because viewing deviant visual images requires increased cognitive activity to reconcile the new information with previously established cognitive categories. The amplified cognitive effort results in increased arousal, and, consequently, a more intense emotional experience. Newhagen and Reeves focus only on the content of images,

but I hypothesize that both formal variables that are unusual such as a rotated camera angle and strange lighting also can result in audiences becoming disoriented and allotting more cognitive resources to processing visual information. A recent Nike ad featured athletes with various deforming injuries incurred while playing their sport. The ad provided viewers with a slow, close examination of the athletes' anatomy. When people are confronted with images that are deviant or unexpected, they become disturbed and unsettled. The advertisers clearly assumed that producing these feelings in viewers would help them to remember to buy Nike shoes. Moreover, the producers of the ad did not just show the wounded athletes, but showed them in close-up and with slow film speed, a somewhat unusual style for a television commercial. Again, advertisers can only have assumed that this would increase the impact of the commercial. I predict that deviance in both content and in formal visual structures will predict level of affective response.

Although both of these areas, negativity and deviance, produce useful measurements for predicting emotional response, they ignore two vital aspects of audience reaction to visual information: the level of involvement the viewer has with the image and the interactions among objects in the image. Visual communication theorists argue that our ability to understand visual communication stems from its parallels with real-world visual experience (Meyrowitz, 1986; Reeves and Nass, 1996; Messaris, 1994). According to Reeves and Nass (1996), people use interpersonal distance to communicate to others what they think about another person or a situation. The amount of space between

people will to some extent reflect or determine the level of emotion involved in an interaction. Interacting with someone in close proximity increases the amount of arousal involved in the interaction because closeness can forewarn of either pleasure or pain, and therefore, arouse the senses (Reeves, et al., 1999). This is translated parasocially when a person is viewing another in a picture or on a screen. A shot that brings the viewer closer to the subject and better able to read the subject's facial displays, should increase emotional impact. I hypothesize that images with closer subject-camera distance and more of the subjects' faces visible will produce greater affective response.

Gestalt theory and theories about visual persuasion tell us that it is the interaction of the various objects constituting an image that create its meaning. The way subjects within an image interact creates a context for a viewer to comprehend the information the image contains. Whether two people are hugging or standing at a far distance from each other in an image conveys a significant amount of information to a viewer processing the image. It is also information that can be particularly affect-laden. Whether a violent or angry interaction is being depicted or a loving one, the degree of closeness between two people indicates level of emotional involvement and can act as a cue for the emotional response of the viewer. Therefore, I also hypothesize that images in which there are interactions will have greater emotional impact than will those that do not. Furthermore, I predict that images in which people are closer together will have more impact than will those in which people are farther apart.

The presumption underlying this research is that finding variables that predict emotional response to news images will provide critical information for assessing what impact images will have on public opinion. When asked to evaluate issues or political leaders, people use the information that is most readily available to them. Therefore, the information most easily recalled from memory will be the most likely to be used to inform statements of opinion. The literature strongly suggests that specific types of emotionally valenced visual information will be the most readily learned and easily recalled. Consequently, by predicting the valence and degree of emotional impact, we should be able predict which images will have the most significant effect on public opinion. This, of course, will require subsequent research. Nonetheless, this study should provide an initial step.

Chapter VI **Method**

This study explored what characteristics of news photographs result in the most significant self-reported emotional impact among respondents. I conducted this analysis using a three-step procedure. First, two coders completed a content analysis of a random sample of news images. The sample was drawn from all available images from 1998 categorized as “news” in the Associated Press (AP) Photo Archive. I selected the AP Photo Archive as a data source because AP photographs are used by many publications across the country. Therefore, the photographs in its archives should be more representative of what the majority of the public sees than would a random sample of images from a small number of publications. A more detailed description of the sampling procedure is outlined in the “content analysis” section that follows.

The second part of the study involved subjects viewing images on a computer screen and responding to a series of questions regarding their self-reported emotional state. The subjects included sixty volunteers from among the undergraduate population at a northeastern Ivy League university. Subject recruiting included placing ads in the university newspaper, posting signs around the university advertising for participants, and posting a request for participants on a university list-serve. Subjects were accepted in the order in which they responded to the advertisements. Only undergraduates who were not Communication majors and who had lived in the United States for more than five years were allowed to participate in the study. These criteria were determined in

order to eliminate from the pool of respondents those with a great deal of experience analyzing visual communication and those having little experience with American culture. After completing the study, one subject reported that she was not an undergraduate. Her data were not used in the analysis. Therefore the final number of subjects was 59. Of these, 43 were female and 16 were male. Forty-two percent of the students were white, 30% were Asian, 12% were black, 5% were Latino, 8% were Indian, and 2% were of a mixed race. Forty-four percent of participants considered themselves to be Democrats, 15% Republican, and 29% Independents. Twelve percent reported being affiliated with another party. Participants were paid \$12.00.

Unfortunately, the results of the content analysis demonstrated that there was an insufficient number of images containing the variables of interest to allow using a simple random sample for the second part of the study. For example, had I taken a random sample of the original 400 photographs, it is highly unlikely that any images containing violence would have been selected. This would have made the testing of the hypotheses relevant to this study impossible. In order to correct for this problem, a different kind of sampling procedure was developed. One category was created for every variable in the content analysis. This resulted in a total of 19 categories. Each photograph that had a positive value for that variable was listed under the category. One photo was randomly selected from each of the categories to create the set of images to be presented to the subjects. This assured that at least one photograph representing each of the variables of interest would be represented in the sample. I randomly selected ten different groups of images

instead of using a single set of images so that subjects could be randomly assigned to image group and in order to maximize the number of different images that were included in the study. I assumed that maximizing the number of different images used would reduce the possibility that unique characteristics of a particular image or group of images would bias the study. Only ten sets of images were created because the amount of time necessary to create each computerized survey prohibited employing a greater number.

Using the computer program “Media Lab,” subjects completed all surveys on a computer. Subjects first responded to a series of demographic questions asking about their sex, race, income level, political party affiliation, and political ideology (liberal, moderate, or conservative). Following the demographic questions, the images began to appear. The computer program randomly shuffled the images with each viewing of a particular group. This ideally eliminated any effects of picture order that otherwise might have arisen. Furthermore, a screen with a plain grid and the words, “when you are ready for the next picture, please click on the screen” appeared between each picture. I inserted this screen in order to give subjects the opportunity to return to a baseline emotional state before viewing the next image. After the participant clicked on the screen with a mouse, the study proceeded.

Each image was accompanied by a caption. The captions were also taken from the AP Photo Archive. I chose to present captions with each picture because, without the benefit of a textual explanation, many of the images would have been indecipherable. Moreover, I wanted to replicate as closely as possible

the real-world experience of viewing news images. Since no one is forced to view news images isolated from text, I presented subjects with both a photograph and a caption.

With each image a series of scales appeared on the screen, one following the other. At the top of the screen, a statement appeared, for example, “it made me happy.” Beneath the statement was a series of buttons. Subjects were able to click on one of these buttons using a mouse. Each button was associated with a number from 1-7. The button labeled with the number one also corresponded with the text, “not at all.” The button labeled with the number seven also corresponded with the text, “extremely.” These verbal indicators guided participants in properly indicating the magnitude of their responses using the numerical scale. Subjects were instructed to select the number that represented how much they agreed with the statement. None of the subjects reported confusion with this procedure.

After subjects viewed all 19 images, they were asked a final, open-ended question. The question was, “which of these images, if any, do you think had the greatest emotional impact on you? Why do you think this is so?” The purpose of asking this question was to see if there were similarities among the images that people named as the most emotionally compelling and to understand what features of the photographs people believed caused their responses.

Finally, in preparation for the regression analysis, I matched the content analysis data with the subject response data. I then conducted a series of regression analyses using the content analysis data and demographic variables

from the surveys as the independent variables and scales measuring the subjects' emotional response as the dependent variables. I created one scale for negative affect and one for positive affect. I conducted a series of regressions measuring the significance the influence of individual variable dimensions on the two outcome variables and then one final regression analysis for each dependent variable using only variables that were significant in the initial regressions. This procedure will be described in detail in a later section dedicated to the regression analysis. All statistics relevant to the reliability of the scales will be discussed in the "factor analysis" section that follows.

Independent Variables: The Coding Instrument

Measures of Negativity

The first set of measures in the coding instrument rates the level of negativity of the photographs. The first question asks coders to make an overall evaluation of the image. This measure was not ultimately used as an independent variable, but it was useful as a way of assessing the valence distribution among the images that were analyzed.

Measure One for Negativity: Overall, does this image have a positive or negative theme?

1
extremely positive

7
extremely negative

The next subset of negativity measures quantifies the level of aggression (if any) that is being displayed by people within the image. I based these variables on those used by Greenberg (1980) and again by Oliver (1994) to measure levels of violence in television programs. The categories were altered slightly to be more applicable to still images.

Measure Two for Negativity: Indicate which, if any, of the following appear in the image:

- Apparent aggression (“noxious, non-verbal symbolic messages” or the appearance of negative affect).
- Threat of physical aggression (“overt warnings of intentions to do physical harm to a person,” e.g. holding a knife to a person).
- Unarmed physical aggression (physical violence through contact between body parts)
- Armed physical aggression (the act of one person hurting another with a weapon).

This variable was made into a scale with the lowest level of aggression receiving a score of one and the highest level receiving a score of four.

Measure Three for Negativity: Does the image portray the outcome of violence (injuries, destroyed physical structures, etc.)?

I included this measure to account for the fact that photojournalists rarely photograph acts of violence as they are occurring. Obviously, if a crime or other violent act could be predicted with enough forewarning to ensure the presence of photographers, it would generally be prevented. News norms dictate that dramatic events are the most likely to receive news coverage as are those with clear story lines (Jamieson and Campbell, 1992). The effects of violent events on human beings and the impact of other types of disasters on people (addressed by the next question) constitute this type of news. The frequency with which these themes appear in the news make them critical items for any analysis of news images.

Measure Four for Negativity: Does the image portray the outcome of any non-violence related disaster (weather, earth-quakes, economic collapse, etc.)?

Many natural or social disasters involve powerful consequences for some group of people. This variable accounts for the large percentage of news coverage allotted to suffering that is not caused by intentional human action.

Measure Five for Negativity. Is anyone in the image displaying a negative emotion?

Measure Six for Negativity (and positivity). Is anyone in the image displaying a positive emotion?

The final measure of negativity evaluates the facial displays of subjects in the image. Coders determined if anyone in the image was displaying a negative emotion and if anyone was displaying a positive emotion. I anticipated that the presence of positive emotion would be inversely related to negative affect. Coders were instructed to enter a one if the emotion did appear in the image and zero if it did not.

Measures of Deviance

The second hypothesis tested in this study was whether images that contain deviations from normal visual experience will result in greater emotional impact on viewers. Coders measured both formal visual features and features of image content to determine the level of deviance.

Measure one for deviance: Is the camera axis?

- vertical
- rotated or tilted

The assumption here is that an image shot with a camera on a rotated or tilted axis will create a greater need for attention and processing than that on a vertical or “straight-on” axis. The increased attention to the image should heighten its impact. Those things that deviate from what we learn to perceive as normal or

acceptable should also cause a more immediate and intense response than that which is comfortable and familiar.

A similar variable measures the camera angle in relation to the subject of the image. As mentioned in the literature review, research tells us that high camera angle creates the impression that a subject lacks power, a low camera angle increases the perception that a subject is powerful and an eye-level angle gives viewers the impression that the subject is on their level. Again, an eye-level shot should increase identification between the viewer and the subject.

Measure two for deviance: Is the camera angle?

- low
- high
- eye-level

The third measure of deviance judges the level of lighting in the image. People are accustomed to viewing images taken in fairly bright light. A darkly lit image deviates from that norm.

Measure three for deviance: Is the lighting in the image

- bright
- dark

As I will explain in the content analysis method section that follows, some of the photographs in the archive from which data was gathered were in color, while others were black and white. With the addition of color photography to daily newspapers, it is difficult to say if color photographs can be considered unusual. However, the degree of color in a photograph should have some impact on viewer

response at least in terms of the starkness of the reality it conveys. Therefore, I included color as an independent variable.

Measure Four for Deviance: Is the film color?

- color
- black and white

The final three measures for deviance examine the content of the image. Each identifies features of the content that I hypothesize will have particular impact on viewers as a result of their ability to attract and hold attention and the tendency for people to interpret visual images based on juxtapositions of objects. Coders were instructed to think about what is unusual in terms of news visuals rather than what they categorize as aberrant within their personal belief systems.

Measure five for deviance: Do any of the people in the image display physical characteristics that seem unusual (injuries, deformation, physical disabilities)?

Measure six for deviance: Are any of the people in the image ressed or behaving in such a way that seems deviant or abnormal?

Measure seven for deviance: Are there any unusual juxtapositions of people and/or objects in the image (e.g. a small child and a weapon)?

Measures of Intimacy

Measures of intimacy are divided into two types: measures of intimacy between the viewer and the subjects of the image and measures of the intimacy among those people pictured in the image. Coders measured level of intimacy between viewer and subject using formal variables and measures of intimacy among subjects using content-related variables. The first formal variable measures the overall orientation of the camera to its subjects. If there is more than one person in the image, coders made an evaluation of the camera's

perspective on the three most central figures. The instructions told coders to select the three most central figures and to code from left to right. The hypothesis being tested by this variable is that the more directly a viewer sees the central subjects of the image, the more involved the viewer will become with the image. It will also be easier for the viewer to interpret the emotion being displayed on the face of the subject. Consequently, the viewer should experience a higher level of emotional impact.

Measure one for intimacy: Are we looking at the face of the subject(s) of the image (code for up to three central figures)?

- from the rear
- from the side
- at a 45 degree angle
- head-on

The other formal variable for intimacy measures how close the camera appears to be to the subject.

Measure two for intimacy: How close is the camera to its subject?

- long shot
- medium shot
- close-up

A long shot is one that shows at least the entire body of the person who is being photographed. A medium shot is from the waist up, and a close-up is generally defined as a shot that shows no more than the shoulders and face of the person being photographed. As I discussed above, the degree of close-up should substitute for interpersonal distance cues people experience during real-life

encounters. If we are brought closer to someone physically, we should feel closer to them emotionally.

The second set of intimacy variables measures types of content in the images. These measures are based on two hypotheses about the way people interpret photographs. The first is that much of what guides viewers' interpretation of images are the types of interactions occurring within the images. The second is that people's emotional response is in part based on a reading of the intensity of the relationship between the people in the image.

Measure three for intimacy: Do any interactions take place between/among people in the image?

The interactions are categorized by a scale developed from Hall's (1966) categories of interpersonal distance. This scale consists of decreasing distances at which people interact. According to Hall, the decreasing distances correspond with increasing levels of interpersonal intimacy. Distances in feet are provided to give coders a sense of the categories from a real-world perspective. Coders used those guidelines to reliably code interactions in still images.

Measure four for intimacy: Are the people in the image interacting at

- public distance (consistent with the norms of public address, 12-14 feet)
- far social distance (e.g. across a desk, 7-12 feet)
- close social distance (e.g. conversing at a party, 4-7 feet)
- far personal distance (people could touch fingers if they reached out their arms, 2.5-4 feet)
- close personal distance (one person could grasp the other by the arm or hand, 1.5-2.5 feet)
- far intimate distance (people touching at extremities, 6-18 inches)
- close intimate distance (embracing or making physical contact at head, legs or pelvis)

Greater levels of intimacy among subjects in the image should suggest to the viewer that the events being depicted have a greater emotional import for those involved. If this is true, empathetic responses should create a greater emotional impact for the viewer when the subjects are perceived to be experiencing stronger emotions.

Dependent Variables:

The dependent variables measuring subjects' self-reported level of emotional response consisted of two scales, one for positive affect and one for negative affect, created from the responses to a series of 7-point affect scales measuring thirteen emotional responses. These scales are those used by Aust and Zillman (1996) in their study of the effects of victim exemplification in television news stories. I eliminated one, "it was entertaining" because it is more relevant for television than still images, and added two, "it was heartwarming" and "it was funny." I included these two scales because Zillman's scales are heavily weighted toward negative emotions and because a small group of participants who pre-tested the instrument said they felt a measure of humorousness was appropriate. The scales range from 1- not at all to 7- extremely. Participants responded to the question of how they felt the image affected them using the following statements and based on the 1-7scale: it scared me, it made me nervous, it depressed me, it worried me, it made me sad, it disturbed me, it made me feel good, it was interesting, it was upsetting, it was uplifting, it was frightening, it was heartwarming, it was funny. Although some researchers agree that arousal is an important component of affective response, it is not useful to this particular

study to measure arousal as a dependent variable. This study is focuses on the individual's self-reported emotional response to information content and should measure what people perceive as their emotional state rather than what components comprise that emotion. All statistics relevant to the scale construction are described in detail in the "factor analysis" section that follows.

Hypotheses, Outline of Variables, and Regression Model

The following are the hypotheses that motivated this research.

Hypotheses 3 and 4 postulate that the effects of negativity and deviation from normal visual experience will be greater at higher levels of intimacy. Kleinbaum et. al (1998) define an interaction in regression as, "the condition where the relationship of interest is different at different levels (i.e. values) of the extraneous variable(s)" (187). Therefore, I am hypothesizing interaction effects between both negativity and deviation variables and the variable measuring intimacy.

Hypothesis 1: The more negative an image is, the greater the emotional impact that will be reported by viewers.

Hypothesis 2: The greater number of deviations from normal visual experience present in the image, the greater the emotional impact that will be reported by viewers.

Hypothesis 3: The level of intimacy portrayed between the viewer and the subject and among the subjects in the image will interact with negativity such that the more intimacy present, the greater will be the effect of the negativity on emotional impact.

Hypothesis 4: The level of intimacy portrayed between the viewer and the subject and among the subjects in the image will interact with deviations from normal visual experience such that the more intimacy present, the greater will be the effect of the deviations on emotional impact.

The variables discussed above are used in the following way in the regression equation:

Independent Variables

Negativity

- Evaluation of positivity or negativity of image
- Score on violence scale
- Presence of the outcome of violence
- Presence of the outcome of other disasters
- Presence of negative emotional displays
- Presence of positive emotional displays

Deviance

- Vertical or rotated camera axis
- Lighting of the image
- Unusual physical characteristics of subjects
- Unusual dress or behavior of subjects
- Unusual juxtapositions of people or people and objects
- Camera angle

Independent Variables Predicted to Interact with Negativity and Deviance

Intimacy

- Perspective on subject
- Closeness of camera to subject
- Presence of interactions in the image
- Degree of interpersonal distance
- Demographic variables

Dependent Variables

(scale derived from responses to the following evaluations of images based on 1-7 scale from not at all to extremely)

- It scared me
- It made me nervous
- It depressed me
- It worried me
- It made me sad
- It disturbed me
- It made me feel good
- It was interesting
- It was upsetting
- It was uplifting
- It was frightening
- It was heartwarming
- It was funny

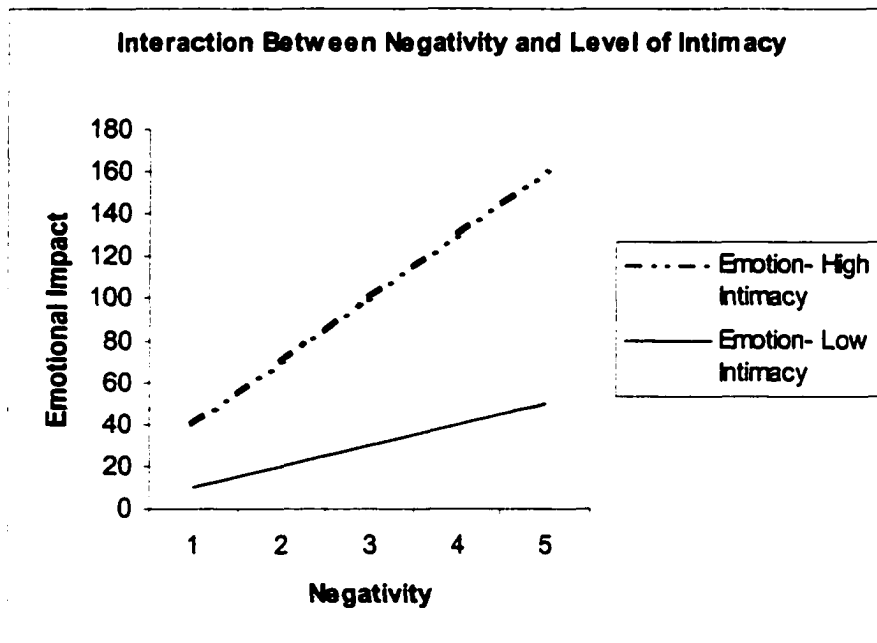
Regression Model

The variables in the equation represent scales consisting of the combined effects of the content analysis variables that measure negativity, deviation, or intimacy.

$$\text{Emotional impact} = \beta_0 + \beta_1 (\text{Negativity}) + \beta_2 (\text{Deviation from visual experience}) + \beta_3 (\text{Intimacy}) + \beta_4 (\text{Gender}) + \beta_5 (\text{Race}) + \beta_6 (\text{Income}) + \beta_7 (\text{Negativity X Intimacy}) + \beta_8 (\text{Deviation from visual experience X Intimacy}) + \beta_9 (\text{Gender X Negativity}) + \beta_{10} (\text{Gender X Intimacy})$$

Graph of Hypothesized Interaction

Figure 1



Chapter VII **Content Analysis**

Method

A content analysis of photographs from the Associated Press photo archive comprised the first stage of this study. The archive contains a continually increasing collection of AP photographs from the wire's inception to the present. This obviously represents an enormous number of photographs. The size of the collection, therefore, necessitated a multi-staged sampling procedure. The first step was deriving a random sample of 30 days from the year 1998. I chose 1998 because it was sufficiently recent to allow a familiar style of photography to be presented to participants, but not so immediate that participants would have an instantaneous, predetermined response to events being covered in the photographs. The way the archive is organized, however, allowed some photographs from past years into the sample. As a result, a few photographs of historical figures and events were included in the sample. Another consequence of this lack of time specificity was moderate variation in the color of the film. Although all of those photographs actually taken in 1998 were in color, older ones were sometimes black and white. This was not considered a major problem and, in fact, allowed the effects of color on emotional response to be tested.

After selecting the 30 days, I downloaded and examined the collection of photographs in the archive for those days. Since the goal of this research was to analyze news photographs, I excluded from the sample images with the topics of entertainment and sports as well as those that featured only animals or artwork

without any background or context. I eliminated photographs of artwork because they were merely reproductions of other visual representations without unique features or themes. Photographs that showed only an animal absent other expository elements were excluded because they lacked many of the features, such as facial expressions, that I predicted would have emotional impact on viewers. If animals were being shown in the context of people or larger events, the picture remained in the sample. Pictures that had the subject “obituary” were also excluded. These tended to be headshots of a person who had recently died, and the photographs were often unrelated to the circumstances of either their lives or deaths. This process resulted in a sample of 2,140 photographs. Because this was a prohibitive number of photographs to analyze, I took a random sub-sample of 400 photos from that group. All 400 were included in the content analysis.

Results

The content analysis was conducted for two reasons. The first was to establish a set of independent variables to use in a final regression analysis. The purpose of the regression analysis was to predict the way people would respond to news photographs using specific features of the photographs as independent variables. In the regression, I used the characteristics identified in the photographs to predict subjects’ emotional response to the images. The second motivation for the content analysis was to have an accounting of the types of pictures photojournalists take most often and what are the features of those images. The features analyzed for the study were: the camera axis (whether the camera was looking head-on or was rotated in some way), the camera angle, the

lighting in the image, the color of the photograph, the orientation (amount of face visible) for each of three main subjects, the subject to camera distance, the overall valence of the image, the presence of negative or positive emotional displays by subjects in the image, the level of aggression in the image, whether the outcome of violence or destruction not related to violence was visible in the image, whether people with unusual physical characteristics were visible in the image, whether people behaving or dressed in unusual ways were visible in the image, whether unusual juxtapositions of objects were visible in the image, whether any interpersonal interactions occurred in the image, and the interpersonal distance among subjects in the image.

Two coders analyzed the 400 images in the sample. In order to establish intercoder reliability, the coders analyzed subsets of the main sample of images for a total of thirty-six. They achieved a .6 or greater alpha using the very stringent Krippendorff's Reliability test on all variables. Reliability alphas for all variables are reported in Table 1.

Table 1
Krippendorff's Alphas for All Variables

Variable	Alpha
Camera Axis	1
Camera Angle	.76
Lighting	1
Color	1
Angle of 1 st Subject's Face	.94
Angle of 2 nd Subject's Face	.9
Angle of 3 rd Subject's Face	.76
Subject to Camera Distance	.7
Valence of Image	.73
Level of Aggression in Image	.7
Does the Image Portray the Outcome of Violence?	.65
Does the Image Portray the Outcome of Non-Violent Disaster?	.63
Does Anyone in the Image Portray a Negative Emotion?	.65
Does Anyone in the Image Portray a Positive Emotion?	.9
Does Anyone Display Unusual Physical Characteristics?	1
Is Anyone Dressed or Behaving in a Deviant Way?	.6
Are There Any Unusual Juxtapositions of People and/or Objects?	.65
Do Any Interactions Take Place Between/Among People or Objects?	.85
Interpersonal Distance Between People Interacting.	.95

Our original goal when analyzing facial expressions of emotion was not to code only for negative and positive affect but to code for the presence of discrete emotions on people's faces. We attempted to use Ekman's (1974) list of universal emotions as a guideline for establishing what emotions were visible. We studied the characteristics of facial expression that are supposed to appear when a person is experiencing one of six discrete emotions: happiness, surprise, fear, sadness, disgust or anger. These characteristics include small changes in the positions of the eyebrows, eyes, nose and mouth. However, Ekman's Facial Action Scoring Technique was created using pictures of people in close-up, with their faces forward, deliberately expressing certain emotions. Unfortunately, news

photographs do not provide this kind of ideal opportunity to scrutinize the faces of subjects. Therefore, we found it impossible to achieve inter-coder reliability using Ekman's categories. Instead, we coded only the valence of the emotion being displayed in the image. It was possible to code reliably using the negative and positive categories.

The original motivation for using the Ekman system was to reduce as much as possible the effects on coders of the emotions being displayed in the image. It is quite possible that coders would respond to the images in a way that was similar to subjects, and use these responses as a basis for coding. In other words, the coder would ascribe to subjects in the image the emotion she was experiencing as a result of examining the photograph, rather than viewing the facial expressions in isolation. The study respondent would presumably react similarly. This would make the outcome of the study somewhat tautological. I postulated that since the Ekman system provides specific facial features to use as guidelines for interpreting emotions, its use would systematize the coding enough to reduce this bias. However, as I stated above, this proved untenable. Therefore, although I acknowledge the potential for some bias in these measures, we proceeded to code facial expression of emotion using only the coder's judgment of the overall valence of facial displays.

As I stated above, a main purpose of the content analysis was to assess the frequency with which the variables of interest appear in news photos. If it is the case that they never appear, then it is of little interest how they affect viewers. On the other hand, if they appear constantly, it would mean that every photograph

appearing in the news should be compelling and potentially change public opinion, a scenario that seems quite unlikely. However, if there is a distribution of these characteristics across the images, and they appear in differing combinations, then they may be producing important effects that can be detected.

The analysis provided some valuable information about the characteristics of news photographs. As has been discussed throughout, it is the likelihood of being recalled that should give images the power to impact public opinion. Yet, the majority of news images included in the content analysis do not contain many of the key features that researchers argue make a photograph memorable. Negativity, for example, is one of the variables researchers have found to affect retention, and the presence of violence generally causes images to be perceived as having a negative valence. However, in spite of the frequent focus on violent themes in the news, none of the photographs included in the sample showed one person hurting another with a weapon. Only .8% of the images depicted one person physically attacking another with a part of the body. 4.5% of the images showed individuals displaying apparent aggression either through menacing affective displays or by holding a weapon. The large majority of the images, 94.8%, did not depict any violence at all. A key variable that represents negativity was barely present in this sample of 400 images.

The difficulty of catching someone in a violent act may in part explain this lack of violent imagery. The United States was not involved in a major war during the time selected for analysis, and so there was no violent conflict that became an obvious and consistent object of media attention. Of course, violence occurs on a

regular basis in the United States, but the press may avoid these images because of the potential for upsetting readers. The unusual, and therefore newsworthy, incidents of violence such as those that take place during a protest or battle are most likely worth printing in spite of possible negative ramifications.

Perhaps displaying images of everyday violence taking place in the US is not worth the risk of unnerving news consumers, particularly because the immediacy of the violence would produce greater anxiety than images gathered in a more remote location. Again though, even if journalists wanted to take these kinds of photographs, it is important to consider the difficulty that would be involved in capturing such an image. Unlike in a war or ongoing conflict, there is no certainty about where violence will take place. A photographer would literally have to roam the streets constantly waiting for an incident to occur. Furthermore, unlike in a war where one is supposed to commit acts of violence, it is less likely that individuals would perform an act of criminal violence when a camera is present.

The exception to this may be assassinations or attempted assassinations of political figures. Photographers are generally present at events where important people appear, and the presence of the press and large groups of people does not seem to serve as a deterrent to those willing to take the life of a public figure. Therefore, these types of images are often caught on film. Thankfully, though, they are relatively rare and would be unlikely to appear in a random sample of images from a single year. Whatever the reason for the deficit of violent images, the relatively infrequent appearance of violence in news photos does suggest that

the majority of news images do not meet one of the criteria for negativity established both here and in other research.

I had originally hypothesized that photographs displaying the outcome of violence would appear more frequently than would those catching people in the act of committing violence. I found this hypothesis to be supported. Four percent of the sample consisted of images that featured the outcome of violent actions. As I reported above, only .8% of the photographs featured actual violent actions. Based on the previous discussion concerning the difficulty of photographing violence as it occurs, this is a reasonable outcome. After being alerted to the occurrence of a violent event, a journalist can come in and still get good pictures. A photographer can personalize the story by taking pictures of people's reactions to violence. This allows viewers to sympathize with those affected, but not to have to confront a raw act of violence on the front of their newspapers. The physical effects of violent events are also visually evocative. A photographer does not have to be present at the exact moment a violent act takes place in order to create an emotionally evocative, aesthetically appealing, and quite negative photograph.

Although violence specifically was not well represented in this sample, negative images in general did predominate over other types of images. Coders categorized 65.5% of the photographs as falling somewhere on the negative side of a scale ranging from one (extremely positive) to seven (extremely negative). Three percent of the images were coded as extremely negative, but only .3% as extremely positive. 33.5% of the images featured people displaying negative

emotions. Similarly, 32.8% of the photographs featured people displaying positive emotions.

9.8% of the photographs depicted the outcome of a non-violence related disaster such as extreme weather or economic collapse. These images should also be considered to be “negative.” It would have seemed reasonable to expect that this would be a more frequently occurring theme in the news. This low number may, in part, be explained by our strict criteria for coding an image as depicting the outcome of violence or non-violence related disasters. Only the images of those affected directly and bodily by the violence or disaster were counted. For example, although a dead or injured person was counted, images of her grieving family were not. We coded a photograph of a flooded home as showing the outcome of a disaster, but did not code a picture of rescue workers preparing to bring food to the afflicted as depicting the outcome of a disaster. This rule was established chiefly in order to facilitate achieving intercoder reliability. There is too much ambiguity beyond primary effects of violence to determine what should or should not be included in the “outcome” category. Therefore, we maintained very strict rules for what would be considered an outcome of violence.

Newhagen and Reeves (1992) argue that the deviance of an image’s content helps determine the degree to which it will be remembered. The arousal that results from the threat of the unfamiliar and the additional cognitive energy required for comprehending unusual imagery results in better retention of the information. The large majority of news photographs included in this analysis do not meet this criterion. There does appear to more deviance than violence,

however. This is particularly true when one considers the higher percent of images featuring either people dressed or behaving in an unusual manner or with unusual juxtapositions of people and/or objects. 4% of the images feature people with unusual physical characteristics, a category that included images of corpses. Although death is a common feature of human life, the majority of people we encounter are alive. For most of the population (medical professionals and morticians aside), seeing a dead person is somewhat shocking. Therefore, it was included as a relatively unusual physical characteristic for a person to display.

Photographers captured people dressed or behaving in an unusual way in 12.8% of the images. One example was a photograph depicting dancers in ceremonial garb performing in the middle of a circle of viewers in everyday dress. There were unfamiliar juxtapositions of people or objects in 22.3% of the photographs. It is important to remember that, when coding the images, we attempted only to code those things that were unusual for a news image, not those that seemed odd to us as Americans or as followers of “Western” religions. Many photographs depict Muslim women dressed in clothes that fully cover their bodies or indigenous people in their native dress. This was not counted as unusual unless someone was wearing elaborate ceremonial garb unlike what is normally shown to news audiences.

The low totals found for these content related variables say nothing about the effects of these types of images. Impact and frequency are two different issues. It is nonetheless interesting to note the relative infrequency with which

AP photographers capture compelling images as they have been defined by communications researchers.

The distribution of formal variables also provides evidence that features assumed to be particularly evocative are not those most frequently found in news photographs. The structure of the AP news photographs is relatively consistent across pictures. 98% of the images were taken with a straight camera. The photographers shot their subjects at an eye-level camera angle 68.3% of the time. The lighting was bright in 96% of the photographs. For the first subjects coded in the images (please see coding rules for explanation of how subject order was determined), we were looking at them head-on in 48% of photographs. They were visible at a 45-degree angle in 15%, from the side in 19.7% and from the rear in 6%. 11.3 % of the images did not include people. We categorized 7% of the subject-camera distances as “close-up,” 33.8% as a “medium shot,” and 59.3% as a “long shot.”

Contrary to prevailing assumptions about news that suggest stories are reported in terms of their relevance to individuals rather than society as a whole, the images in this sample also did not tend toward extreme personalization. Although people appear in 88.7% of the photographs, 59.3% of them are seen in long shot. This is not to say that issues being addressed in the images are not being framed in terms of effects on individuals, but that photographers are not using formal structures with great frequency that should create the greatest feeling of intimacy between the viewer and the subject.

The majority of photographs do show the primary human subject head-on. However, this may be a function of photographers attempting to convey objectivity rather than intimacy. According to Moeller (1989), once variations in camera angle became a technological possibility, photojournalists began to question the meaning they were conveying through the use of these techniques. She argues that, "it became the tradition that the 'truthful' portrayal of a person or a situation should be head on because, originally, posed photographs were the only type possible due to the long exposure required to capture a scene. Later, after other more descriptive camera angles became technologically possible, the head-on perspective seemed the least manipulative and the most dispassionate" (73). This also may explain the lack of innovative camera angles and lighting. Photojournalists are not supposed to create art photography. Their pictures are presented as objective representations of truth and not fabrications of the photographer. Therefore, they may avoid more creative photographic techniques. Apparently these practices also carry over to television journalism. According to Jamieson and Campbell (1992) television camera people also maintain a sense of objectivity by filming reporters, anchors, and the majority of news subjects in medium close-up or medium shot.

There is a clear tension between striving for objectivity and creating photographs that create a sense of intimacy between the subject and the viewer. Occasionally subjects will be shown in close-up to enhance the emotional power of the story. What circumstances lead photojournalists to make exceptions concerning rules of visual objectivity is an interesting question for newsroom

ethnographers to explore. There are certainly cases where journalists have no choice about the angle and distance from which they take a picture, and the omnipresent “press risers” found at newsworthy events are testimony to this fact. However, there are times when photographers do have options. When people are expressing extreme emotion, there is great incentive for photographers to focus in closely. In these circumstances, the emotion is the story. This may be the justification for violating norms of objectivity.

Based on the results of this content analysis, it is reasonable to assume that there is also resistance on the part of photojournalists to using camera angles (low or high) that might create a biased view of the subject. Angles that view the subject from above or below are used with far less frequency than those viewing the subject head-on. These types of angles are used frequently in other contexts, such as political advertisements. Of course, still photos and television are two different media, and this study does not allow any conclusions to be made about television news. However, if this conclusion is applicable to television news, it is laudable that the visual conventions used in news are different from those in deliberately propagandistic material. This could mediate the confusion that might arise when political advertisements are shown during news broadcasts and when tie-ins are made between local news and the fictional programming that precedes it.

It is obviously impossible to achieve actual objectivity in the reporting of news. Print journalists have certain conventions; such as quoting sources from two sides of an issue, that suggest their stories are written without bias.

Photojournalists have their own set of conventions to indicate their objective documentation of reality. The results of this analysis suggest that these are somewhat in conflict with what communication researchers have suggested constitutes a compelling picture. The most obvious way of reconciling this contradiction is to acknowledge that the large majority of news photographs that are taken are not particularly compelling. They generally depict planned events and talking heads. This apparent fact only provides a stronger foundation for the claim that the more unusual an image is, the more it will capture the attention of the viewer. The second part of this study should provide more conclusive evidence to back up scholars' assumptions concerning emotion-evoking content. Regardless, it is interesting to note the rarity of the more stark and unusual pictorial features.

News is frequently defined as that which is unusual. Researchers also note the media's prevailing focus on the human or personal angles of broad social problems (Iyengar, 1991). Journalistic conventions dictate that stories should cover issues as they relate to individuals, that news should be personalized. Standard news norms also assume that news contains violence and conflict (Jamieson and Campbell, 1992 3rd edition). Yet this sample of images is generally biased toward what might be termed ordinary. There is little overt violence, the camera angles are generally straight, and the appearance of subjects generally falls within the realm of our common experience with news photography. It is certain that photographers do deviate from these conventions, and no doubt these instances help account for the occasional ascension of a

photograph into an icon. It may be that the opportunity to photograph scenes including violence, extreme emotion, unusual juxtaposition of objects, or other features included in the content analysis justifies unconventional photographic techniques. The combination of these techniques and the subject matter of photos may help determine which pictures will be influential.

Below are a series of tables showing the results of the content analysis for all content measures.

Table 2: Camera Axis

	Percent
Vertical	98%
Rotated or Tilted	2%

Table 3: Camera Angle

	Percent
Eye-level	68.3%
High	15.5%
Low	16.3%

Table 4: Imaging Lighting

	Percent
Bright	96%
Dark	4%

Table 5: Film Color

	Percent
Color	96.8%
Black and White	3.3%

Table 6: First Subject Orientation

	Percent
NA	11.3%
From rear	6%
From side	19.7%
45 degree angle	15%
Head-on	48%

Table 7: Second Subject Orientation

	Percent
N/A	49%
From the Rear	5.5%
From the Side	12.2%
45 Degree angle	5.3%
Head on	28.2%

Table 8: Third Subject Orientation

	Percent
N/A	70.8%
From the Rear	4.3%
From the Side	8.0%
45 Degree Angle	3.3%
Head on	13.8%

Table 9: Subject-Camera Distance

	Percent
Long shot	59.3%
Medium shot	33.8%
Close-up	7%

Table 10: Positive/Negative Theme

	Percent
One (extremely positive)	.3%
Two	13%
Three	14.8%
Four	19.5%
Five	27%
Six	22.5%
Seven (extremely negative)	3%

Table 11: Level of Aggression in Image

	Percent
No aggression	94.8%
Apparent Aggression	4.5%
Unarmed Physical Aggression	.8%
Armed Physical Aggression	0%

Table 12: Outcome of Violence

	Percent
No	96%
Yes	4%

Table 13: Outcome of Non-Violent Disaster

	Percent
No	90.3%
Yes	9.8%

Table 14: Positive Emotional Display

	Percent
No	67.3%
Yes	32.8%

Table 15: Negative Emotional Display

	Percent
No	66.5%
Yes	33.5%

Table 16: Unusual Physical Characteristics

	Percent
No	96%
Yes	4%

Table 17: Abnormal or Unusual Behavior or Dress

	Percent
No	87.3%
Yes	12.8%

Table 18: Unusual Juxtapositions

	Percent
No	77.8%
Yes	22.3%

Table 19: Interactions

	Percent
No	52.8%
Yes	47.3%

Table 20: Interpersonal Distance

	Percent
N/A	52.5%
Public distance	4.2%
Far social distance	5%
Close Social Distance	4.3%
Far Personal Distance	5%
Close Personal Distance	9%
Far Intimate Distance	13%
Close Personal Distance	7%

Chapter VIII **Open-ended Responses**

Although the content analysis provides valuable information about the form and content of news photographs, it tells us nothing about the way people respond to those photographs. Uncovering clues to the effects of news photographs was the goal of the second part of the study. As has been explained previously, the second part of the study involved a group of participants viewing news photographs on a computer screen and reporting their perceived emotional response. In addition, each subject answered an open-ended question querying him or her about which image he or she found most compelling. The following section considers the responses to that question.

Results

After viewing the entire series of images, respondents were asked to report which of the images had the greatest emotional impact on them and why. The purpose of this was to give respondents an opportunity to identify what they judged to be emotional triggers and to provide information for future research. Previous researchers have demonstrated the value of soliciting open-ended responses. For example, Geer (1991) provided evidence in defense of using open-ended questions on public opinion surveys. His study countered the argument that such questions test people's abilities to answer articulately rather than their underlying attitudes. Geer demonstrated that respondents to the National Election Study, when presented with a series of open-ended questions, do answer at least some of these questions. Those few who do not respond to any questions tend to

be uninterested in politics. Therefore, he concluded that it is lack of interest and not lack of ability that deters people from answering open-ended survey questions. Geer also presented the most compelling argument in favor of open-ended questions: by allowing people to respond to questions in their own words, you are more likely to measure salient thoughts than when respondents are asked to select from predetermined lists of answers.

In this case, the answers to the open-ended question provided evidence that people do tend to respond to the content of news images in a way that is consistent with other individuals. The photographs named by respondents as the most emotionally compelling had some related characteristics, namely: violence, weapons, injuries, or extreme emotional displays, all negative topics. Only rarely did participants name a positive picture as having the greatest emotional impact. Counter to this relative uniformity however, was a clear tendency among respondents to both personalize and intellectualize their answers to the question. Many subjects elaborated considerably on the reasons behind their selection of a particular picture. They also related the selection to events in their lives or their particular areas of interest.

In spite of the random order in which the images appeared, subjects who looked at the same set of images tended to name one of only a few pictures out of the total nineteen as the most compelling, suggesting that the order in which images were viewed did not impact the responses. The increased memory for evocative images demonstrated in previous research no doubt accounts for

subjects' ability to recall the same images regardless of the fact that the sequence in which they saw them differed.

This was particularly true of images containing some level of violence. One photograph showed a riot where Serbian police were beating Albanians (see Appendix Three, figure 1). One Albanian man in the photo was being kicked by a Serbian police officer in riot gear; another lay crumpled on the ground, possibly dead. Several respondents chose this as the most emotionally evocative image.

One twenty-one year old woman who selected this image explained that she was most affected by the unjust acts of violence:

The men being beaten by the other men. I think this is so because I view too many people as innocent, and it disturbs me to think that an innocent man was being undeservedly beaten by another.

A nineteen year-old man also identified this image:

The picture of the guy in riot gear kicking a plainly dressed man... The entire picture was just very disturbing, from the crumbled building in the background to the fallen man kneeling over the ground next to the man getting kicked. The caption also had much to do about my reactions, because it clarified that the brutality was not justified by moral standards, just an act of racism.

Similarly, another woman addressed what she felt was the injustice of the actions being taken by the police:

The picture of the Albanians being beaten with those men with the shields. I do not advocate force or violence for even political reasons, and it seemed unfair for those men to be beaten, especially since it does not seem they were being beaten out of self-defense.

These responses demonstrate that people do not like to see other people hurting each other. They find it particularly objectionable when the violence appears to be unjust and when the sides are not equally matched. Unlike the consensus against violent acts in general, it seems that respondents differed in their opinions of what would justify an act of violence by one human being

towards another. The second participant was more upset by the image because the violence was not morally justified. Instead he said it was motivated by, “an act of racism.” The third respondent said that she does not advocate violence for political reasons but appears to concede that committing violence in an act of self-defense is more just. The first respondent is most troubled by an innocent person being beaten. There was nothing in either the context of the image or the caption that indicated the guilt or innocence of the people in the photograph. Yet, there was obviously some agreement among viewers about whether a wrong was being committed.

Aside from illustrating the shock and disgust people experience when viewing one person injuring another, responses also demonstrate the importance of placing news images in context. These respondents were clearly reacting to their own interpretations of what appeared to be happening in the image rather than assessing events based on an historical overview of the ethnic conflict or even a thorough understanding of what was happening on that day. This is not to say that more historical context would have resulted in respondents condoning aggression. In fact, just knowing that the aggressors are Serbian is probably sufficient information for most Americans to place blame. However, more information would certainly have allowed respondents to formulate opinions based less on who was wearing the most imposing clothing or who was committing the aggressive act at the moment the photograph was taken and more on a thorough knowledge of events and context.

This is reminiscent of the debate over the true impact of the famous Eddie Adams' photograph taken in Vietnam of General Loan Nol shooting a North Vietnamese soldier. Although that particular icon has long been credited with affecting public opinion about the Vietnam War, Perlmutter (1998) argues that this is a mistaken conclusion. He believes that it is unlikely that Americans felt a great deal of sympathy for an enemy, and that there was no description given of the individuals' lives that would have drawn them into the human elements of the story. Moreover, people did not write letters expressing moral outrage to the television network that showed live footage of this same scene. The caption that accompanied the photo in some publications was also sympathetic to Loan Nol. Those news outlets that did provide a caption used some version of the following quote by Loan Nol, "many Americans have been killed these last few days and many of my best Vietnamese friends. Now you understand? Buddha will understand" (Perlmutter, 1998; 43-44). Perlmutter argues that it is the opinions of media and policy elites that give news photographs like this one the status of icon, but not a true movement in public opinion.

This picture of the conflict in Kosovo was also accompanied by a caption. It explained that ethnic Albanians in Kosovo were protesting increased ethnic violence by the Serbs. The caption also reports that sixteen Albanians and four Serbs were killed during the confrontations. It is not a particularly dramatic caption, (although it clearly affected the reaction of at least one respondent). It also points out that people on both sides of the conflict were killed. Participants did not appear to consider these issues when describing their reactions to the

photograph. They responded to the fact that one human being was hurting another, similar to how those who saw the Adams photograph might have. Of course, Americans did not have as much of a stake in the events in Kosovo as they did in the Vietnam War. Nonetheless, this type of evidence demonstrates that the extent of a photograph's potential to change public opinion is still very much an open question. A simple caption may not be sufficient to mediate the way people respond to a violent image, regardless of what the caption says about the people in the photograph. For some, the question really is a simple one. As one respondent said:

The picture of the soldier kicking and hitting a man was really disturbing. I suppose it had the greatest emotional impact on me because I don't think people should be hitting each other.

The presence of weapons also made images more compelling for viewers, even when no violent act was actually being committed. One photograph depicted Pakistani Prime Minister Nawaz Sharif and supporters of the Pakistani Muslim League party celebrating their testing of five nuclear devices. They rejoiced by shooting guns into the air. One twenty one year-old man, misunderstanding or misremembering the exact nature of the situation, found this photograph unnerving.

The one with the Pakistani family holding guns. Partially because the look on their faces was one of such rage and the demographics of the group made them look like a family that was fighting rather than soldiers. It was a scary thought.

Another respondent was further disturbed by the employment of guns to celebrate the use of an even more dangerous weapon.

The photo with the Pakistanis who had guns and were celebrating the detonation of the nuclear bomb. I think this is so because, one, guns make me extremely nervous. A celebrating mob with guns is extremely dangerous, and therefore would make me even more nervous. Second, I do not approve of the use of nuclear technology to create

weapons of destruction. Countries that are extremely poor and lack stable governments should not be creating nuclear weapons of destruction.

This answer is interesting because it demonstrates what appears to be a somewhat visceral response to the sight of guns (a visual aspect of the photograph) as well as a thoughtful evaluation of the events surrounding the photograph. As several researchers have suggested, overall reaction to visual stimuli most likely results from a combination of emotional response and cognitive evaluation. This answer demonstrates just such a process of reasoning. One woman responded similarly to a photograph featuring guns, even though no one was holding the guns in their hands. In this image, the Indian Army chief is showing the Indian Defense Minister a room full of guns placed in compartments along the walls (see Appendix Three, figure 2).

I think the image with the two men, one in uniform, walking and talking in front of the gun racks had the greatest impact. It looks very real, current, and somewhat threatening. The actual visual image of row after row of guns is very striking and it conjures up many thoughts of war and civil unrest. It could have widespread and many long lasting effects.

Again, the respondent appears to experience immediate revulsion from seeing images of guns, but then to consider what the larger context is for the use of the weapons. As scholars have argued, if this more emotional response really does precede a more logical reasoning out of the issue being depicted in visual news content, the implications for public opinion formation may be significant (Lang, Potter and Bolls, 1999). The immediate emotional response, either positive or negative, may become associated with the issue regardless of subsequent cognitions that take more complex information into account.

Negative responses to these images of weapons do suggest that subjects were negatively disposed toward guns prior to viewing these images, and, in fact,

several of them say that this was the case. Presumably, a hunter, police officer, or gun rights advocate might have a different reaction to seeing numerous guns. This reinforces the obvious point that, on some level, almost all response is individual. Many of the participants make this point by explaining the unique nature of their own reactions. One individual, opposed to war, found himself reacting strongly to a military photograph (See Appendix Three, figure 3).

The pictures of the soldiers in the tank had the greatest emotional impact on me. I am a pacifist and war and violence disturb me. The sight of the soldiers, sitting in the tank as if ready for battle, and apparently Americans, bothered me because I feel that this society is much too violent and militaristic.

The following are other examples of similarly personalized responses:

1. The image of the Serbs lighting the candles impacted me. This may be because I didn't know the historical context of some of the others; they didn't mean much, whereas I was aware of the fighting/warfare in this case the fact that such a huge amount of people were killed or left the area is very sad. I'm very sentimental; holidays and families are important to me; I was imagining/wondering how these people felt as they celebrated.
2. The picture of the news correspondent and his wife. I think the photo was a very nice one, & they make a cute couple. I'm a hopeless romantic, so pictures like that always make me happy (see Appendix Three, figure 4).
3. I think the image of Ghandi had the greatest emotional impact on me. I think this to be true because I am very familiar with what he did and what a great impact he was to his country. Since my ancestry lies in India, seeing the image meant a lot more than perhaps the others because I had a better understanding of him and the image (see Appendix Three, figure 5).
4. I think the picture of the homeless burning trash and squaring off against a barrage of police had the greatest effect on me. It suggested a situation where the weak were attempting to rise up against the strong, and were being severely threatened and intimidated by police in riot gear. I participated in the protests in Washington DC two months ago, and have witnessed these images of police stormtroopers myself. Clearly, in this image, their struggle and well-being was much more threatened than I ever was, so I can only imagine the chaos that was occurring (see Appendix Three, figure 6).

In each of these cases, the participant articulates how his or her personal belief system, political opinions, personal experience or personality traits mediate the effect of the image. Some of the pictures named lack both dramatic and clear

expository elements. The photograph of Ghandi's funeral, for example, is dark, black and white, and shows a huge crowd of people from above with the body of Ghandi in the middle. It is almost impossible to make out the figure of Ghandi's corpse lying among the crowd. The photograph of the news correspondent and his wife is accompanied by a caption explaining that he was killed in a foreign country just after the photo was taken and, and fifty years later, his wife still mistrusts the official story of how he was killed. Given this narrative, the positive response, even to a picture of a happy, smiling couple, is surprising. In the case of the Ghandi photograph, the context of what was going on in the image seemed to overwhelm the lack of visual stimulation for the viewer. Cognition overwhelmed visceral response. Conversely, in the picture of the married couple, the visual content overshadowed the context. Based on the commentary of the subjects themselves, it appears that the particular predisposition of the person viewing the image is the most reasonable explanation for these contradictions.

The final respondent's comments were interesting because, according to his self-report, a recent event in his own life directly affected his reaction to the image. The photograph of police clashing with homeless protestors fit directly into a schema he had established about police during his own protest experience. He clearly had memories in the form of images within his own mind, and the photograph fit into that visual framework. Although he acknowledges the differences in status between himself and the individuals in the image, this participant clearly feels a strong connection to those "attempting to rise up against the strong." When asked to name his political ideology, this twenty-year-old man

called himself, “very liberal,” and his response to these economically disadvantaged protestors is consistent with that ideology.

Like the Ghandi picture, this photograph also was taken from far above the scene, distancing the viewer from events. The caption of the photograph reads:

Homeless people and their supporters burn trash in the street as they confront helmeted municipal workers, foreground in Nashinari ward of Osaka, in western Japan Monday, Dec. 28, 1998. Hundreds of officials evicted some 35 homeless people inhabiting tents and cardboard shelters along a walkway in western Japan’s largest city. The city of Osaka ordered the Monday evacuation after local residents complained that noise produced by the homeless was disturbing classes at a nearby junior high school.

The caption describes a scene somewhat more dramatic than what is visible in the image itself. The faces of the people in the image are not visible, so there is no indication of their reaction to events.

There is also no indication in either the picture or the caption that the police and protestors were engaging in violent conflict. As the viewer states, he can “only imagine the chaos that was occurring.” Based on my viewing of the image, he was, to some degree, imagining chaos. It is true that there is a fire burning, but everyone in the image is standing still. The police and protestors appear to be only looking at each other. The response provided by the participant provides evidence suggesting that the personal experiences of the viewer add narrative elements that may or may not be present in the image itself. This response was amplified by the individual’s feeling of connection and the fact that he was primed to react negatively to images of police and protestor conflict.

The presence of people stricken by illness or injury, particularly if blood is visible, seems to be a significant factor in making a photograph more emotionally compelling for viewers. One photograph in the third set of images showed a victim of a building fire, lying on a stretcher covered in blood (see Appendix

Three, figure 7). The injured person's face is not visible, but one can see the faces of the rescue workers holding the stretcher. Their faces display negative emotions. Five of the twelve people who viewed the third group of images named this photograph as the most compelling emotionally. As one respondent said, "I think that the woman being carried by a group of people probably had the greatest impact on me. I felt bad because obviously she was hurt. Also she was covered with a large amount of blood made me feel terrible as if something close to death." The presence of the blood was mentioned by four of five people who selected this photo. One named the blood as the sole reason for the effectiveness of the picture:

The fire fighter image was the worst picture, because it depicted a scene of blood on the body. It had the most effect on me because I don't like blood very much.

The presence of blood also created a sense of reality for respondents:

I think that the image with the man who was covered in blood had the greatest emotional impact on me. It was very real and there was blood everywhere. It seemed that he was the closest to have been killed. There is something about the stark reality of losing a person to death that impacts you with great force.

Another participant echoed this amplified perception of realism provided by the overt depiction of injury:

The man who escaped alive from the building that collapsed in Rome greatly disturbed, probably because of the amount of blood and the tragedy that struck. As sad as this is to say, often the most graphic and disturbing images are the ones that make you aware of what is going on in the world.

These comments lead to the question of why images that depict things rarely seen in day-to-day life provide a sense of heightened realism and immediacy for the viewer. First, this tendency may serve as further evidence that seeing something unusual increases our attention to the image, and, consequently, heightens

affective response. This emotional reaction may, in turn, make the person experiencing it believe that the situation depicted is a genuine one.

It is also possible that, when seeing scenes of suffering or disaster, particularly where there is physical evidence like blood, viewers immediately disregard the possibility that an image is conveying false information. Perhaps we perceive that a bleeding, starving or dying person is unlikely to be created by deceptive photographic processes or a dishonest photographer. One woman who viewed this picture said that she found it the most compelling because, “in the other pictures, even the negative ones, it was never certain that someone was hurt, but in this one I knew that the man was.” Regardless of what the captions on other photographs might have said, the respondent was sure this man was hurt because blood was present on the body. The physical evidence gave validity to the image.

The extreme reaction to blood is probably also partially the result of an innate physiological response in human beings called the “vasovagal response” (Kelly, 1991). It is theorized that this response causes people to faint when they see their own blood so that the blood pressure will drop, and blood loss will be minimized. The presence of blood in a photograph or on film may cause similar, although less extreme, effects in a viewer. The International Affective Picture System developed by Lang, Gernsbacher, and Vaitl (1988), contains numerous images that have been demonstrated to reliably elicit certain levels of affect and arousal. The data accompanying the images provide average measures of arousal and valence for all images. Both dimensions are measured on a scale from 1-9. The

mean for all arousal measures in the set is 4.84. Measures of arousal for images containing blood ranged from 5.35 – 7.34. The overall mean for valence is 5.09. The measures of valence for images with blood ranged from 1.31 – 2.63 (negative affect is represented by lower numbers on the scale). Obviously images showing blood elicited far more extreme responses on both dimensions than did the average picture. It is important to note that images in the LAPS system are quite extreme, and those that show blood are often scenes of terrible mutilation or close-ups of internal organs. As a result, the fact that LAPS images containing blood fall far above the mean in terms of valence and arousal should not be taken as concrete evidence that all images containing blood will produce equivalent effects. Nonetheless, it does serve as an illustrative example of the potential impact photographs of blood can have on a viewer. This combination of physiological response to seeing blood and the evidentiary function blood serves make it a particularly powerful factor in determining a viewer's reaction to an image.

Another version of this apparent response to serious injury is the way people react to the appearance of death. Interestingly, one of the images that affected people most was a black and white photo of a group of dead dolphins washed up on a beach (see Appendix Three, figure 8). Even though in the same set of images there was an image of a sick person on a stretcher with numerous IV tubes attached to his body and another of two coffins in the Vatican, four out of five respondents named the picture of the dead dolphins as the most emotionally affecting. One respondent reporting reacting physically to the scene:

Probably the scene of the beached dolphins. The tragedy was more apparent there than in any of the others. I'm not an animal-rights fanatic, but the photo definitely turned my stomach.

Another was troubled by the mystery of their death:

The picture of the dead dolphins on the beach I think had the greatest impact on me because I wondered why they had died and was really upset that all these beautiful creatures were dead.

It is possible that people were moved by these images because the dead creatures were photographed in a large group without the pretense of shielding the viewer from death that might exist in a photograph of human dead. Although there are examples of photographs depicting large numbers of dead people, it is not something that appears frequently in the news. As one woman commented regarding this picture, "the image was so self explanatory and the significant number of dead animals made the situation more startling and severe." The fact that the Dolphins lack culpability for their own death also might explain this response. Even while reacting to an image involving human death, one respondent recognized that human beings were responsible for the destruction.

The one of the riot with several people being killed. It has the greatest emotional impact on me because there are death involved which is caused by the problem in society. Their families will miss them forever, though they wouldn't have to die if people could solve the problem calm, sitting down instead of violence.

The dolphins, on the other hand, could not be held accountable for whatever led to their demise.

The one image that contained a close-up of a dead person in a coffin elicited only a single response with no elaboration (see Appendix Three, figure 9). The person reported only that it was the, "picture of casket with democratic leader in it," that had the greatest emotional impact for him. Another respondent mentioned it, but only to say that she saw it too early in the series to have

considered it particularly compelling by the end of the study, of course it did remain in her memory. This photograph shows the funeral of a lawmaker in Russia who was one of the leaders of Russia's democratic movement. She was murdered on the stairs of her apartment building. The image contains a very peaceful looking woman in a casket with her body cloaked and only her face visible. Mourners who appear sad, but not grief-stricken surround the coffin. In spite of the scene's placidity, one might assume that the stark image of the casket and corpse would have more profoundly affected the respondents, particularly in comparison with the beached dolphins. I would suggest that there are several possible explanations for these counterintuitive results. First, with the exception of the face, the corpse in the photograph is well concealed. The face, which is visible, appears to be adorned with cosmetics. Although the woman in the photograph had met with a violent death, all evidence of this was hidden from the scene. Furthermore, it was a well-ordered scene in which people were visiting the casket, but no one was overwhelmed with emotion. As unusual as it is to see a person lying in a coffin, the image provides no real emotional cues for how a viewer should respond. Based on the appearance of the living people in the photograph, an extreme reaction would seem exaggerated.

Unlike the orderly funeral photograph, the image of the dolphins shows a large number of animals still at the scene of their deaths. Through experiences with aquarium visits, movies, and television, people learn that dolphins are among the intelligent members of the animal kingdom. They are able to not only communicate with each other, but are evidently capable of having relationships

with humans. According to respondents, the dolphins in this photograph were innocents killed by an unknown aggressor. This may have also been true of the deceased woman, but the political dimensions of her narrative, and the lack of visual cues about the violence of her death, preclude viewers from considering this possibility.

The reaction to the dolphin image can also be associated with the profound way participants responded to images of disaster and destruction. People reacted profoundly to images of disaster and destruction. One woman categorized a number of images, including the one of the dolphins, that she felt affected her similarly:

The killing of the dolphins, forest fire, celebration of nuclear warfare. Anything that has to do with destroying nature or creation as we know it, is disturbing especially if people do it intentionally. I don't understand why people are so hateful.

It is interesting that this woman makes the intellectual leap from several disasters that are essentially natural in origin (nuclear warfare being the obvious exception) to implicating humanity for its destructive tendencies. It is possible to see a schema at work in the response of this individual who calls herself a moderate Democrat. She has clearly been primed to associated disaster, both natural and political, with the hateful acts of human beings. How this impacted her reaction to the images is difficult to determine. The question of whether she would have responded differently to scenes of natural disaster had she not associated them with nefarious human actions cannot be answered with these data. However, these idiosyncratic aspects of image interpretation cannot be disregarded even when looking for generalizable trends in the ways people interpret visual stimuli.

Another woman named a photograph involving disaster, but she focused on people as victims, not as perpetrators (see Appendix Three, figure 10):

The image of the family amidst the debris of their house that was damaged by the volcano affected me the most. I think it could have been the fact that it was black and white—more depressing colors in the picture and because it is such a tragedy for a whole family to be huddled together, with a look of hopelessness because they now have nowhere to live.

In this case, there was nothing to prime an association between natural disaster, it was actually a tornado that destroyed the house, and the suffering of the people. Although it was unknown why the dolphins died, it could have been through human actions. Here, the people in the image could not be considered culpable for the disaster that afflicted them.

When subjects of a photograph exhibited extreme emotional displays, it also increased the likelihood that a picture would be named as being one of the more compelling. In response to a picture depicting two girls crying at the site of the Oklahoma City bombing, one 21-year-old man said that (see Appendix 3, figure 11):

The girls crying in front of the fence had the greatest impact on me. The show of such strong actual human emotion in others made this impression on me.

Another respondent described his response to an image of two orphaned children leaning against a wall in despair (see Appendix Three, figure 12):

The image of the boy and girl in the street. I think it was seeing such young people in such a difficult situation had an effect. Crying also made the picture very emotional.

Another mentioned the “look of hopelessness” apparent on the faces of a family whose home had been destroyed by a tornado. As Aust and Zillman (1996) found in their study of victim exemplification in television news, people report stronger reactions to visual content in which people appear emotionally distressed. The

display of extreme emotion frames the way people interpret the scene and influences their own emotional response to the story. Human beings have a great deal of experience with gaining information from and responding to the emotions of others. Whether this behavior is innate or learned, it clearly carries over to mediated experience.

This effect is not limited to negative emotional displays. One participant found a photograph of a huge crowd of joyous Japanese girls playing in a pool particularly moving:

Also, the picture of all the girls in the pool had the greatest impact on me because all the smiling faces of the children really brightened my day.

Whatever the true reasons for people's responses to images, when explaining how images affected them, people tended to mention the emotion being experienced by those in the picture. There are several likely explanations for this tendency. As I noted earlier, human beings are trained (or evolve) to understand emotional displays as a form of communication, a fact to which volumes of interpersonal communication research can attest (Ekman, 1971). Our parasocial interactions with mediated visual displays are quite similar (McHugo, et. al., 1985). Second, like blood or injury, the presence of an emotional reaction by a person in the image provides evidence that some event actually occurred. If we see a person reacting as we think we would in a particular situation, we believe that the effects being depicted are real. We are unlikely to assume that the people in the image are manufacturing the extreme emotions they appear to be feeling. In the visual portions of news, emotions are evidence.

This can be deceptive because, in order to get a “better picture,” photographers are likely to select the most dramatic displays of emotion to represent a particular scene. These displays provide evidence as well as cues for how the image should be interpreted. The way news consumers respond has the potential to impact their opinions about the issue illustrated in the photograph. When the focus of visual news is often on the most compelling display of emotion, the viewer is primed to associate this powerful visual stimulus with the issue in question. This type of priming may change the criteria people use for evaluating an issue. For this reason, selection of subjects and degree of emotional display in visual portions of news are important factors to consider when judging the effects of news on public opinion.

The open-ended responses to the series of photographs viewed by each of the 60 respondents in this study demonstrate clear trends in the types of images that people view as emotionally compelling. Unquestionably, images with violence, death, guns, serious injury, or displays of extreme emotion evoked emotional responses among the respondents in this study. Yet, specific aspects of responses: the thoughts generated and memories triggered, were directly influenced by the personal experience of the viewer. Although there was consistency in the way these people responded to the photographs, some combination of patterned response and personal idiosyncrasy was clearly at work. This fact invalidates neither the search for generalizable patterns nor the assumption that personal experience must always play a role in determining an

individual's response to stimuli. It does argue for taking many factors into account when studying people's responses to communication.

Although the types of pictures that were demonstrated to be most provocative are not surprising, some of the reasons given for the selection of images are interesting. For example, we would expect that images containing blood would be provocative simply because the sight of blood is disturbing to many. However, it was more difficult to anticipate that people would perceive bloody images as more credible.

It is also interesting that people responded profoundly to images of guns in spite of the fact that none of the guns in any of the photographs were being fired at other people. This is part of the larger phenomenon demonstrated in this study: people react similarly to certain kinds of news photographs, but in ways that are also consistent with schemata they already have about what is depicted in the image. Considering the multiple responses to a limited set of images, the results of this study are supportive of universal responses to visual news. However, because people come to the news with numerous experiences and pre-dispositions, it is clear that true uniformity is impossible.

Chapter IX: **Regression Analysis Results**

Apart from the open-ended question, all other participant responses were analyzed in a series of regression analyses. Before the actual regressions could be carried out, the responses to the individual emotional scales had to be combined into two separate scales: one for positive affect and one for negative affect. Factor and reliability analyses helped determine whether the emotion scales were indeed measuring only two distinct dimensions.

Factor Analysis

Exploratory factor analysis was conducted in order to verify that two dependent variables: negative affect and positive affect, could be created out of the thirteen individual emotion questions. Using principal component analysis with varimax rotation, two clear factors emerged, one representing positive affect and one representing negative affect. All variables representing negative emotions had factor loadings of .766 or above on the first factor. With the exception of “it was funny,” all positive emotions had factor loadings of .569 or above on factor two.

Table 21

	Component One- Negative	Component Two- Positive
It made me nervous	.770	.069
It depressed me	.854	.166
It worried me	.863	.087
It made me sad	.840	.171
It disturbed me	.902	.098
It was upsetting	.902	.119
It was frightening	.817	.113
It made me angry	.766	.122
It was heartwarming	-.313	.790
It made me feel good	-.399	.809
It was interesting	.262	.569
It was uplifting	-.290	.831
It was funny	-.309	.429

Reliability analysis demonstrated that the negative scale was extremely reliable with a Chronbach's alpha of .94. A reliability analysis using all positive emotion variables resulted in a Chronbach's alpha of .76. I elected to remove both interesting and funny from the scale because they had far lower factor loadings than the other variables. With "it was heartwarming," "it was uplifting," and "it made me feel good," remaining in the scale, the positive scale was also very reliable with an alpha of .88. The two scales were negatively correlated, but with a small pearson's correlation of -.2. Therefore, it was determined that they could be used independently.

Explanation of Regression Method

The Regression model selected for this analysis was the GLR, or Generalized Linear Regression model. The reason this model was selected over the more standard Ordinary Least Squares Regression (OLS) was that the data for this study violate a key assumption of OLS. In order to use OLS regression, all observations of the dependent variable are supposed to be independent from one another (Kleinbaum et. al., 1998). Fifty-nine people participated in the study, but each participant contributed 19 responses to the final data set. Therefore, the 19 observations for each participant were most likely correlated in some way. The Generalized Least Squares (GLS) model accounts for this problem.

In GLS, the estimator weights the error terms in the equation based on the knowledge that when certain error terms are large and positive, other error terms will also be large and positive. In this study, all errors for a particular participant would be of similar magnitude. GLS weights the errors to account for this correlation. When an observation is associated with other observations that have large residuals, it is given a smaller weight (Kennedy, 1996). Instead of minimizing the actual sum of squared residuals, a weighted sum of squared residuals is minimized. The weights are determined using the variance-covariance matrix of the error terms.

I used the statistical package, STATA to conduct the Generalized Least Squares Regression, which also helps correct for the artificially small standard errors that result from having many more observations than participants. In STATA, one indicates which observations should be grouped together because of

some association (in this case, because they came from the same participant).

STATA then calculates the statistics using the number of groups rather than the number of data points as its N. To demonstrate, the output from two regression analyses conducted in STATA appear in tables 22 and 23. One is an OLS regression, the other is GLS. The same variables are used in both. The difference of magnitude in the standard errors is notable.

Table 22
OLS Regression

dpositiv	Coef.	Std. Err.	t	P> t
sex	.5611605	.2666779	2.104	0.036
asian	.9530777	.2919639	3.264	0.001
black	-.0588116	.3953363	-0.149	0.882
other	.8243309	.3615621	2.280	0.023
liberal	-.241352	.2850908	-0.847	0.397
conserv	.7241383	.5436162	1.332	0.183
democrat	.6730131	.5428998	1.240	0.215
independ	1.777522	.5384331	3.301	0.001
otherpar	.0205251	.581034	0.035	0.972
higincom	-.0822719	.3370812	-0.244	0.807
lowincom	-1.407738	.3167762	-4.444	0.000
_cons	4.275328	.5274057	8.106	0.000

Table 23**GLS Regression**

Random-effects GLS regression

Number of obs = 1121

Group variable (i) : person

Number of groups = 59

dpositiv	Coef.	Std. Err.	z	P> z
-----+-----				
sex	.5608293	.4919255	1.140	0.254
asian	.9536955	.5385455	1.771	0.077
black	-.0581691	.7292422	-0.080	0.936
other	.8244779	.6669667	1.236	0.216
liberal	-.2398471	.5256832	-0.456	0.648
conserv	.7246988	1.002785	0.723	0.470
democrat	.6742273	1.001404	0.673	0.501
independ	1.778947	.9931353	1.791	0.073
otherpar	.0201737	1.071819	0.019	0.985
higincom	-.0836051	.621663	-0.134	0.893
lowincom	-1.415607	.5789248	-2.445	0.014
_cons	4.275298	.9728975	4.394	0.000

sigma_u | 1.3686591

sigma_e | 3.5600585

rho | .12876857 (fraction of variance due to u_i)

Regression Analysis

The original plan described in the method section to add together content variables that measured similar dimensions (negativity, deviance, and intimacy) had to be modified because the variables did not form reliable scales. A reliability test of a scale measuring negativity that included level of aggression, outcome of violence, outcome of non-violent disaster, and negative emotional display, resulted in an Alpha of only .07. This was clearly not sufficient for creating a reliable scale. The addition of variables measuring deviance: camera axis, camera angle, film color, lighting, unusual juxtapositions, unusual physical characteristics, and unusual dress or behavior, resulted in a reliability Alpha of .13. Again, this was not high enough to warrant the creation of a scale. Finally,

variables measuring intimacy: subject-camera distance; orientations of the first, second and third subjects; the presence of interactions; and degree of interpersonal distance among subjects, resulted in a reliability Alpha of .65. Although this Alpha is sufficiently high to assume reliability, the correlations among the variables tell a different story. Two variables, “presence of interaction among subjects” and “interpersonal distance”, had a very high correlation coefficient of .84. This, of course, is obvious because without the presence of interaction, it is unlikely that there would be any interpersonal distance to measure. The correlations among other variables were significantly lower, particularly those between subject-camera distance and the other variables. These ranged from -.005 and .3. In light of these uneven correlations, I determined that this scale was also not sufficiently reliable.

The situation that arose regarding these scales was regrettable because it prohibited the testing of the hypothesized interactions. The individual, unscaled variables do not sufficiently serve as operationalizations of the overall concepts of interest to be used in the interactions. Therefore, I was able only to test the effects of individual variables on emotional response and not any interactions among the different variable dimensions.

Recoding of Variables

Originally, several of the independent variables: income, subject-camera distance, aggression, subject orientation, and interpersonal distance were to be used as if they represented continuous scales. After subjecting the variables to tests of linearity, it became clear that not all the variables had the properties of interval level data. The test for linearity involves finding the values of R^2 for both a regression equation using the variable in its original form (regression a) and for a regression using dummy variables derived from the original variable (regression b). The change in R^2 is then calculated and divided by the number of independent variables in the second regression equation (change in degrees of freedom). This value is then divided by $(1-R^2 b)/(N-K-1)$. The significance of this value is determined using the F-distribution. If the value is $p < .05$, the nonlinear components (dummy variables) should be used. Subject-camera distance withstood the test of linearity, and therefore entered the analysis in its original state. I did not test interpersonal distance because the variable consists of seven categories representing actual distances in feet and inches. Although this is clearly not a perfect example of a continuous variable, the number of categories and relationship to real-world measurements justified its use. Since it could not be used in its original form, level of aggression was recoded into a dichotomous variable with a value of one representing any aggression and zero representing no aggression.

Income and orientation of the three main subjects posed a more difficult problem because these variables could not be made dichotomous without

eliminating important differences in meaning. Income was divided into three levels (high, medium and low) and recoded as dummy variables. The orientation variables were divided into four levels (back, side, 45 degree angle, and head-on), and recoded as dummy variables. Sex, race, political party and political ideology were also made into dummy variables. The race variable was divided into white, African-American, Asian, and "other races." The other races variable represents Latino and Indian people. The dummy variables for political party are Democrat, Republican, Independent, or Other Party, and the variables for political ideology are Liberal, Moderate, and Conservative.

Results

The lack of reliable scales and the necessity of using numerous dummy variables complicated the analysis to a significant degree. The number of variables and the fact that so many were now being compared to a baseline (the excluded dummy variable) rather than representing their own contribution to the variance in the independent variable, made interpretation of results quite difficult. In order to limit the number of variables, I decided on a method of analysis that involved doing separate regressions for each of the dimensions of interest (demographic characteristics, negativity, deviance, and intimacy) and using the significant variables in each of those regressions in a final regression. Because the variables had been pre-selected for their level of significance, they were held to a far more conservative test of significance in the final analysis. The significance test will be explained in detail in the results section.

Because the two dependent variables, negative affect and positive affect, have opposite valences, making sense out of the signs of coefficients can be complicated. Left in standard form, a positive coefficient in the regression on negative affect would indicate more negative affect, and a negative coefficient in the regression on positive affect would also indicate more negative affect (or at least less positive affect). Therefore, for ease of interpretation, the dependent variable, “negative affect” was multiplied by -1 . As a result, a negative coefficient for either negative or positive affect can be interpreted as the respondent experiencing more negative affect. In other words, a negative sign for negative affect means that there is a direct relationship between the dependent variable and independent variable. Conversely, a negative sign for positive affect represents an indirect relationship.

Table 24 shows the results of the demographic regressions on both positive and negative affect. Sex is a dichotomous variable with female being the highest value. The excluded dummy variable for race was white. Of the different political parties, Republican was excluded. For ideology, moderate was the excluded dummy variable, and for income, medium income was excluded from the equation. In the primary regression, only one variable, sex of the respondent, significantly predicted negative affect, with women responding more negatively than men. Only having a low income predicted positive affect, but the relationship was in the negative direction. The lower a respondent’s income, the less positive affect she experienced.

Table 24

	Negative Affect	Positive Affect
Sex	-4.36 (1.94)*	.56 (.49)
Asian	1.8 (2.13)	.95 (.54)
African-American	4.0 (2.99)	-.06 (.73)
Other Race	-1.96 (2.63)	.82 (.67)
Liberal	-2.74 (2.07)	-.24 (.53)
Conservative	-7.44 (3.96)	.72 (1.0)
Democrat	-6.83 (3.95)	.67 (1.0)
Independent	-5.77 (3.92)	1.78 (.99)
Other Party	-7.08 (4.23)	.02 (1.07)
High Income	2.35 (2.45)	-.08 (.62)
Low Income	1.64 (2.27)	-1.41 (.58)**
Constant	-10.94 (3.84)	4.27 (.97)

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$
 (Standard Errors appear in parentheses)
 R^2 : Negative- .07, Positive- .05

Table 25 shows the results on negativity for both negative and positive affect. All of the variables in the negativity group: level of aggression, outcome of violence, outcome of disaster not caused by violence, negative emotional display, and positive display, significantly predicted negative affect. As expected, positive emotional display had an inverse relationship with negative affect. With the exception of the outcome of violence, all variables also significantly predict positive affect. However, only positive emotional display is directly related to positive affect.

Table 25

	Negative Affect	Positive Affect
Aggression	-6.78 (.92)***	-1.75 (.32)***
Outcome of violence	-8.94 (.96)***	-.57 (.33)
Outcome of non-violent disaster	-10. (.87)***	-1.35 (.3)***
Negative emotional display	-5.0 (.63)***	-1.21 (.22)***
Positive emotional display	1.38 (.7)*	1.43 (.24)***
Constant	-15.6 (1.0)	6.14 (.27)

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$
(Standard Errors appear in parentheses)
 R^2 : Negative- .20, Positive- .14

Table 26 shows the results of deviance on both negative and positive affect.

From among the deviance group, camera rotation, camera angle, light, unusual characteristics, and unusual juxtapositions all significantly predicted negative affect.

Camera axis is inversely related to negative affect. The rest exhibit direct relationships with the dependent variable. Color, unusual physical characteristics, and unusual juxtapositions significantly predict positive affect. Both unusual characteristics and unusual juxtapositions have inverse relationships with positive affect.

Table 26

	Negative Affect	Positive Affect
Camera axis	6.64 (1.31)**	-.07 (.44)
Camera angle	-3.3 (.67)**	.33 (.23)
Light	-2.45 (1.15)*	-.24 (.39)
Color	.045 (1.12)	1.57 (.38)***
Unusual characteristics	-7.73 (1.0)**	-.75 (.34)*
Unusual dress or behavior	.31 (.84)	.49 (.29)
Unusual juxtapositions	-4.8 (.68)**	-1.6 (.23)***
Constant	-17.0 (.90)	1.43 (.27)

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$
(Standard Errors appear in parentheses)
 R^2 : Negative- .14, Positive- .06

Table 27 shows the results of intimacy on both negative and positive affect. For all variables measuring subject orientation, “viewing the subject from the rear” was the dummy variable left out of the equation. Also important to note is that the subjects in the image were numbered in order from left to right. Therefore, the second subject was generally the one located in the center of the photograph. From the intimacy group, seeing the first subject from the side, at a 45-degree angle or head on were significantly but indirectly related to negative affect. Seeing the second subject from a head-on angle also significantly predicted negative affect and was also inversely related to the dependent variable. Seeing the third subject from the side and seeing the third subject from a head-on angle predicted negative affect significantly and positively. Finally the degree of closeness among subjects positively predicted negative affect.

Positive affect was directly and significantly predicted by seeing the first subject from the side, seeing the second subject at a head-on angle, and degree of closeness among the subjects. Variables that have a significant but negative relationship with positive affect are seeing the second subject from the side and seeing the third subject from the side.

Table 27

	Negative Affect	Positive Affect
First subject from the side	7.0 (1.31)***	1.19 (.42)**
First subject at a 45 degree angle	5.63 (1.20)***	.66 (.39)
First subject head-on	3.30 (1.03)**	-.19 (.33)
Second subject from the side	-1.14 (1.16)	-.79 (.37)*
Second subject at a 45 degree angle	.27 (1.40)	.06 (.45)
Second subject head-on	4.6 (1.14)***	1.06 (.37)**
Third subject from the side	-4.41 (1.34)**	-1.89 (.43)***
Third subject at a 45 degree angle	-1.45 (2.07)	1.19 (.67)
Third subject head-on	-3.58 (1.11)**	.10 (.36)
Subject-camera distance	-.96 (.68)	-.40 (.23)
Are there interactions between people and/or objects?	.17 (1.29)	-.71 (.41)
Closeness among subjects	-.834 (.23)***	.21 (.07)**
Constant	-20.0 (1.34)	5.7 (.40)

Notes: *p<.05, **p<.01, ***p<.001
(Standard Errors appear in parentheses)
R²: Negative- .06, Positive- .06

Final Regressions

For the final regressions, I used all variables that were significant in the analyses shown above as the independent variables. The significance test used the critical z score necessary for all of the combined variables in the equation to be significant as the criteria for determining whether each individual variable was significant. This was a far more conservative method than the more common t-test used in the original equations. First, I calculated a probability for the entire equation using the following formula: $.05/2(K)$ where K is the number of

independent variables in the equation. I then found the normal inverse of that number. This represents the z score necessary for determining significance. For the regression on negative affect, variables needed to have a z-score of 3.0 or greater in order to be considered significant at the .05 level, a z-score of 3.45 was necessary to establish significance at the .01 level, and a z-score of 4.54 was necessary for the .001 level. For the regression on positive affect, a z score of 2.89 was necessary to establish significance at the .05 level, a z score of 3.36 was necessary for the .01 level, and a z score of 4.47 was necessary for the .001 level. Because a different set of variables was included in each of the two regressions, results are reported in separate tables.

Table 28 shows the results for negative affect. Five variables: aggression, the outcome of violence, the outcome disaster not related to violence, negative emotional displays, and unusual juxtapositions significantly predicted an increase in negative affect among respondents.

Table 28

	Negative Affect
Sex	-4.0 (1.72)
Aggression	-6.4 (.93)***
Outcome of violence	-5.9 (1.09)***
Outcome of non-violence	-7.7 (.92)***
Negative emotional display	-5.15 (.83)***
Positive emotional display	.00 (.86)
Camera axis	3.0 (1.23)
Camera angle	-1.6 (.67)
Light	-2.38 (1.3)
Unusual characteristics	-2.55 (1.04)
Unusual juxtapositions	-2.80 (.63)**
First subject from the side	2.26 (1.20)
First subject at a 45 degree angle	1.99 (1.13)
First subject head-on	1.58 (1.03)
Second subject head-on	1.80 (.85)
Third subject from the side	-.45 (1.16)
Third subject head-on	.07 (.96)
Degree of closeness among subjects	-.28 (.13)
Constant	-12.28 (1.70)

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$
 (Standard Errors appear in parentheses)
 $R^2: .26$

Table 29 shows the results for positive affect. Aggression, unusual juxtapositions, negative emotional display, and seeing the third subject from the side all significantly and negatively predicted positive affect. Positive emotional display, seeing the second subject head-on and degree of closeness among

subjects predicted positive affect significantly and had a direct relationship with the dependent variable.

Table 29

	Positive affect
Low income	- .98 (.51)
Color	.70 (.36)
Aggression	-1.89 (.33)***
Outcome of non-violence	-.81 (.30)
Negative emotional display	-1.60 (.23)***
Positive emotional display	.86 (.25)**
Unusual characteristics	.17 (.33)
Unusual juxtapositions	-1.11 (.21)***
First subject from the side	.16 (.31)
Second subject from the side	-.11 (.34)
Second subject head-on	.93 (.26)**
Third subject from the side	-1.42 (.35)**
Degree of closeness among subjects	.20 (.04)***
Constant	6.07 (.29)

Notes: *p<.05, **p<.01, ***p<.001
(Standard Errors appear in parentheses)
R²: .21

Diagnostics

I used the Hadimvo method of identifying significant outliers to determine if any observations were exerting excessive influence on the analysis. Hadimvo identifies multiple outliers in multivariate data using the method of Hadi (Stata Reference Manual, 6, 1999). According to the Hadimvo method, there were no significant outliers in the regression predicting negative emotion. On the other

hand, the Hadimvo method did identify one significant outlier in the regression on positive emotion. To further investigate the influence of this outlier, I calculated measures of DFITS for all residuals. The DFITS measure for the outlier was .41. I compared the DFITS measure with the result of the following formula: $2\sqrt{k/n}$. According to Belsley, Kuh, and Welsh (1980), if DFITS is larger than the result of the formula, it is worthy of further investigation. The result was .2. Therefore, I ran the regression again, removing the outlier. Removing this observation resulted in very little difference in the patterns of coefficients, signs, or significance levels. The signs of all coefficients remained the same and there was minimal change in the values. As a result, I left the data from this observation in the analysis.

Chapter X: **Discussion and Conclusions**

Although a limited number of variables remained significant after being subjected to the conservative tests used here, it is important to note what is similar about those variables. In general, the features that had the most robust impact on affective response were aspects of the images' content. As the results of the smaller regressions demonstrate, formal features of the photographs showed a trend toward impacting viewers' emotional experience, but the content of the images affected viewers more profoundly. For the most part, this was true for both negative and positive affect.

For negative affect, it was content variables exclusively that withstood the multiple regression procedure. Overall, the results of the regression on negative affect that show violence, aberrance and extremity of emotion to be the most evocative of photographic subjects are not surprising, but they are useful. These results validate assumptions of previous research, provide a guideline for quantifying negativity, and suggest directions for future research on individual variables. Although researchers no doubt frequently employed pictures with violent and deviant imagery in prior analyses of the effects of negativity on viewers, the evidence provided here will allow future researchers to provide a more concrete foundation for their choices. Moreover, the criteria outlined in this study will facilitate replication of research dealing with visual stimuli by providing guidelines for image selection.

This research also finds quantitative evidence for long-standing visual communication theories. For example, the high level of significance with which

the presence of unusual juxtapositions predicts negative affect provides evidence for visual persuasion theories arguing that object juxtaposition is the vehicle through which images express meaning. The effects demonstrated for unusual juxtapositions of objects imply that the “law of proximity” posited by gestalt psychologists is in fact an important element of visual perception. The brain associates things that are next to each other. When the way items are arranged is not consistent with expectations, there is cognitive confusion. Since this type of cognitive unease causes discomfort, it also increases a viewer’s experience of negativity during the process of viewing an image. On the other hand, when objects appear in a sequence that is familiar, when everything is “in its place,” arousal, and consequently, affective response is not increased.

Although the results of the positive regression will be discussed later, it is important to note at this point that the relevance of proximity was validated further by the fact that people responded more positively to images in which subjects were close together. Meaning about the relationships among subjects of the image was inferred based on how proximate those subjects were to each other. This interpretation carried out by viewers has as its foundation the real-world cues that motivated Hall’s (1966) categorization of human interaction used to code the images for the study. People’s own experiences with the norms of interpersonal relationships help to determine how they respond to mediated depictions of interactions.

Of course, the fact that the presence of interactions was not significant in either of the large or any of the small regressions appears to render questionable

the use of interaction as an explanatory variable. However, all is not lost regarding the effects of interactions and interpersonal intimacy on negative affect. In the regression that included only intimacy variables, degree of closeness among subjects did indeed predict negative affect. Therefore, there is some evidence that the effects of an image that shows higher levels of interpersonal intimacy are not entirely negligible (although not significantly robust to withstand a conservative significance test). Moreover, the presence of interaction itself may have been insignificant because some of the effects of the presence of interaction were accounted for by the variable representing interpersonal closeness. This variable can only have a value above zero if an interaction is occurring in the photograph, and, therefore, these two variables must be correlated.

A similar issue arises with the final negativity regression. Although significant in the initial regression, degree of closeness was not significant in the final negativity regression. Yet, the final regression equation controlled for one variable that was not in the initial intimacy regression: aggression. The fact that one person is perpetrating an aggressive act against another assumes that the two people are within reasonably close proximity. Therefore, the fact that the effects of an aggressive interaction were being held constant most likely reduced the impact of interpersonal closeness on the outcome variable.

Another potentially useful outcome of the regression on negative affect is the finding that emotional displays, both positive and negative, can be coded and used to predict negative emotional response. This was true in spite of the fact that the specific, discrete emotions defined by Ekman (1974) could not be coded

reliably. Although it may not be possible to isolate discrete emotions in news photographs, this lack of specificity may not make an appreciable difference in the prediction of viewer response. On the other hand, one might argue that it may not be the emotion being displayed, but really another effect of the overall subject matter that results in subjects' level and type of affect. If the image depicts an upsetting subject, the subjects within the image are most likely to appear upset. However, the regression model includes variables for violence, the outcome of violence, and the outcome of non-violent disasters. Therefore, many of the themes one might anticipate would appear in a negative news photograph are being controlled for in the analysis. Consequently, we can say with some confidence that viewing someone else feeling an emotion, even if it is in a still image, causes people to feel a similarly valenced emotion, further reinforcing that the facial feedback hypothesis applies to mediated communication (Cappella, 1993).

Trends from Less Strict Regression

One relatively consistent finding in visual communication research detailed at length in the literature review, is that when a person is in the picture, the camera angle from which an image is photographed or filmed affects the way a viewer will perceive that person. Although it was not significant in the more strict regression, camera angle did have a significant impact on negative affect in the regression limited to variables measuring deviations from normal visual experience. There are several possible explanations for the affective value (however limited) that can be attributed to high or low camera angles. First,

consistent with the overall hypothesis for structural elements that deviate from a standard, the high or low angle may simply cause the viewer to pay more attention to the image, consequently arousing the viewer into a more heightened state of response. It is also possible that people felt more negatively toward subjects who were perceived as either superior or inferior to themselves.

Although the outcome of the study is consistent with a hypothesis predicting that people will respond more strongly to those photographed at high or low angles, it would also have been reasonable to hypothesize that the opposite would have been true. One could easily have assumed that when the angle allowed the viewer to experience a greater sense of identification with the subject of the image, feelings of empathy would increase the viewer's emotional response, leading to a negative correlation between high or low camera angle and emotion. However, in this study, a hypothesis of that kind was not supported.

One surprising result was that sex did not remain a significant predictor of negative affect in the final regression. In the preliminary regression examining the impact of demographic variables, sex of the respondent was the only independent variable that predicted negative emotional response. In the more limited analysis, a trend toward women experiencing higher levels of emotional response than men was evident, and this was consistent with previous research in the area of emotion and cognition (Lang et. al., 1993; Aust and Zillman, 1996). The effects of negative stimuli are generally greater among women than they are among men. However, while the coefficient for gender is in the appropriate direction, sex of respondent did not significantly predict level of negative affect in

the final regression. There were a significantly larger number of women in this study than men, and this fact that may require judging with caution findings related to gender.

Other variables which were significant and directly related to negative affect in the initial regressions but not the final regression predicting negative affect were the type of lighting and the presence of subjects with unusual physical characteristics. Consistent with what one would expect, a dark and gloomy photograph was more likely to result in negative feelings than a brighter one. Probably because several of the unusual characteristics were injuries or deformation, this variable did have ability to predict negative affect. However, neither of these findings was robust.

The degree of camera rotation had a significant, but inverse effect on negative affect in the small regression. This is a rather surprising result because comprehension of an image with a rotated camera angle should require more attention than one taken at a straight angle. Unlike a high or low camera angle, it is possible that the tilted camera distances the viewer from the subjects of the image, thereby reducing the impact of other factors that would normally increase feelings of negativity. Since we do not generally view people at odd, rotated angles, a person photographed in this way may seem less real, and consequently, less worthy of empathy.

This study was a complicated one, however, and involved the testing of many variables simultaneously. Therefore, I suspect these variables should not be permanently dismissed, but instead should be subjected to more individualized

and more controlled testing or tested in a larger study with a more diverse subject population.

Positive Affect

There were fewer measures in the study hypothesized to predict positive affect than there were variables for predicting negative affect. For the most part, this was because previous research has demonstrated repeatedly that negative visual images more profoundly affect viewers learning and memory than do positive ones. Therefore, isolating characteristics that define negativity seemed a matter of greater importance.

The frequent finding that negativity has more bearing on the process of visual memory suggests that negative and positive imagery function differently with respect to viewer response to visual stimuli. Results of this study do show differences between what variables predict positive affect and those that predict negative affect. However, in general the types of variables that predict emotion robustly are similar for both types of emotion.

Although two of the subject orientation variables did significantly predict positive affect, for the most part, for both positive and negative emotion, it was measures of content that had the most significant effect.

It was in the regression on positive affect that interpersonal closeness demonstrated its greatest promise as a predictor of emotional response. Unlike negative emotion, degree of closeness among subjects had a significant and direct relationship with positive affect. The closer that subjects in the images were to one another, the more positively respondents reacted to the image. Scenes of

human intimacy produced good feelings in viewers when that intimacy was taking place in the overall context of positive events. These findings fit well with theories of parasocial interaction, social learning theory, and visual persuasion. The results suggest that people empathize with those depicted in an image, and they make sense the situation being depicted through the manner in which the subjects are interacting. This is a variable not considered in previous research, and this analysis demonstrates its potential usefulness in predicting positive affect.

Color predicted positive affect with a high level of significance in the initial regression. Since black and white photographs were assigned a higher value for coding purposes than color photographs, this finding is completely contrary to expectations. Why would people respond more positively to black and white photographs than to brightly colored ones? There are a few possible explanations for this result. First, we might be compelled to consider that the controls for image content did not entirely remove the effects of the images' subject matter. If a disproportionate number of black and white images depicted very positive scenes, this would result in a correlation between negative affect and black and white film, but it would be a misleading one. Based on the coding of the images, however, this does not seem to be the case. In fact one of the images mentioned most often by respondents as causing them to feel negative emotion, that of the deceased dolphins, was a black and white image. Another black and white photograph depicted Ghandi's funeral, while a third showed a family huddled together after the destruction of their home. Only a very small number of

black and white photographs showed anything positive at all. Therefore, this explanation is unsatisfactory. Another possibility is that black and white film blunts the effects of some of the features that would ordinarily produce negative affect. Although color did not significantly predict negative affect, it was inversely related to it. So, perhaps it was not that people felt more positively as a result of seeing something in black and white, but instead that they were less likely to select numbers at the lower ends of the positive emotion scales because the lack of color mediated the negative response. This second explanation is the more plausible of the two, but further investigation is necessary in order to gain a more precise understanding of the effects of color on affective response.

Of all the demographic variables, only low-income predicted positive affect. This was only true in the initial regression. Those with a low income experienced lower levels of positive affect when looking at the images. Although this was not a robust effect, it is worth considering why this variable had some explanatory power while other demographic information did not. It is conceivable that those who have not benefited a great deal from the political and economic system view all mediated images more cynically than those who have received society's benefits. The consequence of this could be to limit the positive reactions these individuals have to uplifting or joyful scenes. Moreover, in the case of this study, several of the images with positive themes depicted politicians, celebrities and other world leaders. Resentment at the contentment of the rich and powerful might also explain the less positive responses of the low-income group.

Most of the content variables that predicted negative affect strongly and inversely predicted positive affect as well. As in the negative regression, unusual juxtapositions, aggression, and negative emotional displays were highly significant. The outcome of violence did not significantly predict lower levels of positive affect, although the coefficient for the outcome of violence did have a negative sign.

The effects of the orientation variables that did significantly predict positive affect are inconsistent. It makes intuitive sense that seeing the second subject head-on would positively impact response because the second subject is usually the most central in the image. The person in the center of the image is most likely to capture the attention of the viewer, and with the entire face visible, it is easier to take full account of the emotion being conveyed. However, seeing the third subject from the side was also significant and in the negative direction. It is difficult to explain this result. Why would seeing a smaller portion of the third person's face reduce the amount of positive emotion experienced by a viewer?

We might have to speculate once again that it was a failure of the controls that caused this result. In other words, there was something specific to several of the images that caused an association between negative subject matter and viewing the third subject from the side for which content variables did not control, thereby making positive emotion inversely related to that facial position. However, seeing the third subject from the side was not significant in the negative regression. The sign of the coefficient indicates that seeing the third subject from

the side predicted that viewers would experience more negative affect, but not to a statistically significant degree. Therefore, it should not have been a specific picture with a highly negative theme and a view of the third subject from the side that caused this result. Since there appears to be no plausible explanation for this outcome, I will have to assume that it is attributable either to a flaw in the data or a substantive reason not yet considered.

Some of the variables used to predict positive emotion, such as those that measured subject orientation, seem to display confusing patterns that defy obvious explanation. However, the variables measuring aggression, negative emotion, and unusual juxtapositions are robust and clearly contribute to the affective state of viewers. The presence of aggression and negative emotional displays are clear-cut variables for which to code and should be used as criteria when assigning images to a “negative” category. Unusual juxtapositions are somewhat more difficult features to identify, although as this study demonstrates, not impossible. Future research should focus on identifying more specific types of images that people recognize as representing unusual juxtapositions through the use of focus groups and controlled experiments.

This study was undertaken with the assumption that negative images are more memorable, and therefore, would have stronger influence on public opinion than other images. Results of the study provide some strong suggestions about which features will result in photographs being more readily recalled. However it is not sufficient to assume that improved memory alone will create a more hospitable environment for informed public opinion formation. The accuracy

with which images are remembered also has consequences for public opinion. The responses to the open-ended question demonstrate that increased memory cannot necessarily be equated with precision of recollection. Several times, respondents inaccurately described the content of an image that they claimed caused them to experience a significant emotional response. This has potential consequences for public opinion. If evocative features of images, such as the presence of weapons, remain in people's memories, but specific details about the story the image is telling are forgotten, the effect of the image is distorted. Particularly if images are serving a priming function, misremembered images might bring to mind the wrong associations with people or issues. As the study in which evocative images caused people to make errors when recalling information that preceded them demonstrated, it may be that, while evocative images help people to remember the information they contain, the information recalled may be disproportionately biased toward the most arousing aspects of the image's content (Brosius, 1993). These striking images may influence peoples' opinions, but they might do so based on misinformation, or at least information misremembered.

Responses to the open-ended questions also suggested that features of images would be differentially recalled depending on an individual's personal experiences. However, in spite of strong qualitative evidence that some aspect of an individual's demographic make-up or personal experience would influence response to the images, none of these variables were significant in the final regression. It is possible that the explanation for this lies in part in the relative homogeneity of the respondents. Participants in the study were quite diverse

racially, however they were all highly educated students at an Ivy League university. Furthermore, they were of the same age and were required to have lived in the US for at least five years. This suggests that their experiences with culture, in particular popular culture, did not differ significantly. Gender did initially show some impact, but it disappeared in the larger regression. The same was true for income. Yet, in the end, none of the demographic variables that were tested was shown to be particularly important.

Nonetheless, the responses to the open-ended question make it impossible to disregard the relevance of personal experience in determining how a viewer reacts to an image. Although there was reasonable uniformity in the types of images subjects reported finding the most compelling, it was clear by their answers that their own experiences did come into play when selecting a photograph. What is the explanation for this disparity? Participants responded to the open-ended question in retrospect, after viewing all the images. Pressure to give the “correct” answer undoubtedly motivated them to give some thought to which photograph they would select. The initial responses to the photographs should have been based more on participants’ original emotional response. Perhaps when people are trying to recreate their emotional experience, they find it necessary to justify their feelings. Relating a photograph to one’s one life experience must help rectify any confusion about why an image would cause one to experience a powerful response. The ambiguous results of this study make it inadvisable to conclude that personal experience makes no contribution to the effects of visual news stimuli.

This study attempted to create a generalizable typology of news image features that act as emotional triggers. My rationale for trying to test for multiple variables instead of isolating variables and testing them individually was the belief that no one characteristic would sufficiently influence emotional response to make a significant difference in public opinion. Unfortunately, as a result of trying to be comprehensive, numerous complications were introduced into the study. Because of the rarity of certain variables, it was impossible to conduct a simple random sample of images. Moreover, because a few characteristics were very rare, they, of necessity, had to be used in more than one individual test group. Although I do not think this posed any serious threats to the validity of the study, it was not an ideal set of circumstances. Nonetheless, had I used only one group of pictures for the entire study, the potential for features or themes of individual photographs to disproportionately influence the results would have been greater.

As I addressed previously, other difficulties arose in regard to the statistical analyses. The inability to create reliable scales detracted considerably from the original analytical strategy by eliminating the possibility of testing hypothesized interactions. Furthermore, the collection of multiple measures from the same subjects, required the use of a somewhat unusual statistical technique. In the end, however, the Generalized Least Squares Regression technique worked well and served as a remedy for the violations of Ordinary Least Squares Regression, which were clearly problematic.

In spite of the complicated design and multi-staged analysis used in this study, certain of the findings are reasonable and robust. These include the effects of the presence of violence, of negative and positive emotional displays, of unusual juxtapositions, and, in the case of positive emotion, of interpersonal closeness in news photographs. Other results are more ambiguous, and require further research in order to achieve some level of clarity. Using the knowledge that the variables found here to have highly significant effects will impact emotional response, these variables can be held constant in controlled experiments while others, such as the orientation variables and some of the more ambiguous structural variables, are tested for their effects.

In summary, this study produced findings about several aspects of the process of visual news communication. The content analysis demonstrated that dramatic news photographs as defined by previous communication research and this study appear infrequently, at least in the AP photo archive. Although this reduces the potential for visual news to influence opinion about wide-ranging issues, it does provide greater evidence for the theory that, when a news image is dramatic, it will have the power to influence opinion about the issue it depicts. Since people are unaccustomed to seeing a large number of compelling images, those that are should have great potential for attracting attention.

Evidence that compelling visuals attract attention is also provided by the responses to the open-ended questions in the subject test. Although they were exposed to a large number of photographs, participants chose from among a small number of pictures representing limited themes, almost all negative, when

selecting the image that had the greatest emotional impact on them. Respondents often presented individualized reasons for their responses to the images, but the photographs they selected were similar. These findings, in combination with the quantitative results help define just what the features of a news image are that make it compelling, and, consequently, likely to affect opinion. The most important aspects of the image in giving it the power to impact learning and memory, and, as a result, opinion do not appear to be strongly related to formal features unique to visual communication. Instead, effects appear to emerge from aspects of the content. Whether the image is negative and violent, whether it has odd juxtapositions of objects, whether subjects in the image convey extreme emotion and interact at close distances, all have great potential to impact learning and memory. What then does this mean for the impact on public opinion of visual news communication?

Conclusions

Impact on public opinion

Previous research tells us that images that cause people to experience negative emotions are the ones most likely to be remembered. According to the results of this study, images that result in the most extreme negative affective response are those that are violent or show the outcomes of violence and disaster. Images that have unusual juxtapositions of objects and people expressing negative emotions also have this effect. What does this mean for the impact of visual news on public opinion? It would appear that people will form opinions about events covered visually based on the most violent images, on images that show people in

the most heightened state of emotional distress, and on those images showing the greatest amount of destruction.

This state of affairs means that photographers' decisions about what images to capture have serious consequences for the way the public views a particular event or issue. As was true of the Elian Gonzales saga, choosing one photograph over another to highlight a news event can determine the perspective a viewer takes about that story. However, in this age of multiple media outlets and saturation news coverage, is it probable that a news consumer will be exposed to only one image representing an important event? In most cases, important news events get covered by a variety of reporters: those with no cameras, those with cameras that take still images, and those using television cameras that allow us to see events in motion. However, there are instances where access is limited or things happen quickly, and a limited number of visuals emerges to represent an event. This was true of the Tiananmen protests in China as well as Elian Gonzales' removal by INS officers. In these cases, the pieces of the event that get photographed or filmed have great potential to determine how people will remember and respond to the event being depicted.

Of course, it is not always the case that people see only the most horrible sights and are therefore biased toward negative perceptions. The history of war photography suggests that photographs are not adequate for depicting the true horror of some situations, and sometimes photographers either resist or are prohibited from trying to represent whatever level of misery can be captured in a picture. Perhaps if the photographs coming out of Europe during WWI more

realistically conveyed the deplorable lives of the soldiers, Americans would have been less patriotic and less willing to fight the war. Yet, would this have been the right decision for Americans to make?

This question exemplifies a moral dilemma for all reporters, but perhaps most significantly for photojournalists who encapsulate complex events in single moments. If journalists are seeing with their own eyes events about which the public should be made aware, should they photograph the most emotionally compelling image or the most common? Which choice fits better into the ethics of “objective” reporting? If a journalist sees hundreds of thousands of starving children and knows that the majority of Americans are unaware that the situation exists, should they take a picture that will be remembered (violent, depicting extreme emotional displays, etc.) or should they resist these types of images for fear of being manipulative? Presumably photographers will not intentionally take lackluster pictures to avoid changing people’s opinions. Besides, opinion change is frequently their goal. Yet, where does one draw the line between advocacy and objectivity?

To further complicate matters, research tells us that taking the most provocative picture is not necessarily the avenue to assuring activation of public interest. Results of some studies suggest that taking vivid photographs might not always be the best way to mobilize action, and, may in fact lead to compassion fatigue. The results of this study however do provide evidence that the most extreme photographs are those that people will probably use when evaluating issues. So, what then is the answer to this quandary: when possible are

photojournalists to resist dramatic photographs in fear of manipulating opinion and calling attention to only the most dramatic aspects of the story, or are they to shake the public into consciousness with vivid and provocative images?

Moreover, once the pictures are taken, what is the responsibility of editors for the way they choose to use the pictures? Although a somewhat impractical solution, the only clear answer appears to be capturing as much of the story, from as many angles, as possible. To be informative, any news story should try and convey as many aspects of an issue as can be reasonably explained, and the visual portions of news should be no different. People's attention may get captured with an emotionally compelling photograph or film, but they should also be given the opportunity to see and learn more, from a more nuanced perspective, so that issues are not encapsulated only in their most extreme form. As the content analysis shows, pervasive dramatic imagery is not a significant problem.

However, when there is a novel story or a foreign story, visuals matter, and care should be taken to present as varied a set of images as possible. This may be of particular importance as media outlets continue to consolidate and share resources.

As news production moves increasingly onto the Internet and the Internet moves closer to merging with television, it is probable that opportunities to view visual news coverage will only increase. Yet, cost-cutting measures at major news networks such as CNN are already reducing the amount of news about international affairs that the American public has the opportunity to consume. As a result of these dual trajectories, there are conflicting possibilities concerning

exposure to visual news. There certainly may be more of it, but it may be presented with a more limited perspective. Of course, by using the power of the Internet people from around the world will be able to show whatever images they wish. Yet, will only a small number of people be exposed to such content as compared to what is distributed by mainstream news outlets? Either way, the content of the images we see will be an important part of the multifaceted puzzle that makes up the formation of public opinion. The results of this study tell us that violent, graphic, emotional, and unusual images will remain in the minds of news consumers longer than others they see. What specifically this will mean for public opinion will depend on the menu of images viewers are permitted to experience.

Appendix One
The Coding Instrument

1) Overall, does this image have a positive or negative theme?

1
extremely positive

7
extremely negative

2) Indicate which, if any, of the following appears in the image

1) apparent aggression (noxious, non-verbal symbolic messages or the appearance negative affect)

2) threat of physical aggression (overt warnings of intentions to do physical harm to a person, e.g. holding a knife to a person)

3) unarmed physical aggression (physical violence through contact between body parts)

4) armed physical aggression (the act of one person hurting another with a weapon)

3) Does the image portray the outcome of violence (injuries, destroyed physical structures, etc.)?

1) no
2) yes

4) Does the image portray the outcome of any non-violence related disaster (weather, earth-quakes, economic collapse, etc)

1) no
2) yes

5) Is anyone in the image displaying a negative emotion?

1) no
2) yes

6) Is anyone in the image displaying a positive emotion?

1) no
2) yes

7) Is the camera axis

- 1) vertical
- 2) rotated or tilted

8) Is the camera angle

- 1) eye-level
- 2) high
- 2) low

9) Is the lighting in the image

- 1) bright
- 2) dark

10) Do any of the people in the image display physical characteristics that seem unusual (injuries, deformation, physical disabilities)?

- 1) no
- 2) yes

11) Are any of the people in the image dressed or behaving in such a way that seems deviant or abnormal?

- 1) no
- 2) yes

12) Are there any unusual juxtapositions of people and/or objects in the image (e.g. a small child and a weapon)?

- 1) no
- 2) yes

13) Are we looking at the face of the subject (s) of the image (code for up to three central figures)

- 1) from the rear
- 2) from the side
- 3) at a 45 degree angle
- 4) head-on

14) How close is the camera to its subject?

- 1) long shot
- 2) medium shot
- 3) close-up

15) Do any interactions take place between/among people in the image?

- 1) no
- 2) yes

16) Are the people in the image interacting at

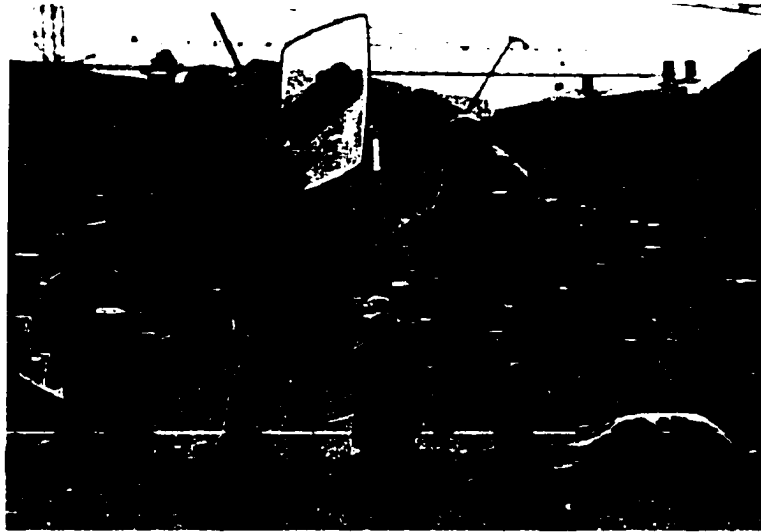
- 1) public distance (consistent with the norms of public address, 12-14 feet)
- 2) far social distance (e.g. across a desk, 7-12 feet)
- 3) close social distance (e.g. conversing at a party, 4-7 feet)
- 4) far personal distance (e.g. people could touch fingers if they reached out their arms, 2.5-4 feet)
- 5) close personal distance (one person could grasp the other by the arm or hand 1.5-2.5 feet)
- 6) far intimate distance (people touching at extremities, 6-18 inches)
- 7) close intimate distance (embracing or making physical contact at head, legs, or pelvis).

Appendix Two
Scales Measuring Responses to News Photographs

It scared me	1	2	3	4	5	6	7
	not at all					extremely	
It made me nervous	1	2	3	4	5	6	7
	not at all					extremely	
It depressed me	1	2	3	4	5	6	7
	not at all					extremely	
It worried me	1	2	3	4	5	6	7
	not at all					extremely	
It made me sad	1	2	3	4	5	6	7
	not at all					extremely	
It disturbed me	1	2	3	4	5	6	7
	not at all					extremely	
It made me feel good	1	2	3	4	5	6	7
	not at all					extremely	
It was interesting	1	2	3	4	5	6	7
	not at all					extremely	
It was upsetting	1	2	3	4	5	6	7
	not at all					extremely	
It was uplifting	1	2	3	4	5	6	7
	not at all					extremely	
It was frightening	1	2	3	4	5	6	7
	not at all					extremely	
It was heartwarming	1	2	3	4	5	6	7
	not at all					extremely	
It was funny	1	2	3	4	5	6	7
	not at all					extremely	

Appendix Three
Selected Photographs

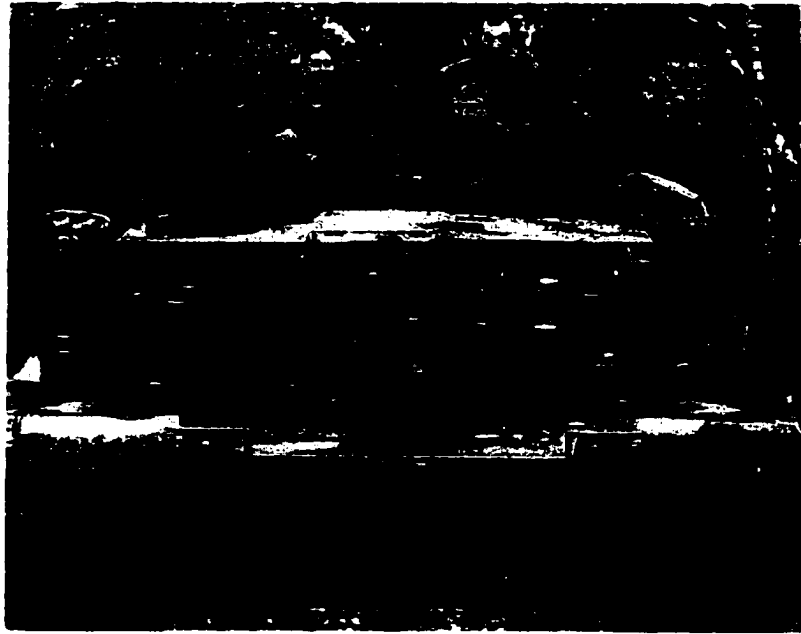
1



Serbian police beat ethnic Albanians during riots in Pristina, the capital of Kosovo province Monday March 2, 1998. Thousands of ethnic Albanians protested as ethnic violence increased this past weekend in which at least 20 people - 16 Albanians and 4 Serbs - were killed. (AP PHOTO / Srdjan Ilic)



Indian Army chief for Kashmir Kishan Pal shows arms and ammunition to Indian Defense Minister George Fernandes, left, during a visit to the troubled state of Jammu and Kashmir on Wednesday April 29, 1998. Fernandes has angered China by saying earlier this week that he considered them "Enemy No. 1." Fernandes added that China had stockpiled weapons along India's borders, extended its airfields in its Tibet province and established a military foothold in neighboring Myanmar. (AP Photo/Sw)



Members of the Vermont tank crew that scored a perfect round during a competition in Fort Knox last month pose in one of their M-1 tanks in Lyndonville, Vt., Oct. 8, 1998. From left are: Lt. Robert Beaudry, Sgt. John Parnick, Sgt. Dan Robinson, and driver SPC Robert Briggs. (AP Photo/Toby Talbot)

4



A 1948 photo of CBS correspondent George Polk and his wife Rea shortly before his murder May 8 of that year. It has been 50 years since Polk died a mysterious death, one of the first victims of the Cold War as he was covering the Greek civil conflict between national and Communist forces. His widow, Rea Venn, has questioned the official explanation that Polk was killed by Communist militiamen fighting the U.S.-supported government.

5



The body of assassinated Indian leader Mohandas Gandhi, covered with rose petals, is carried to the site of his cremation in New Delhi, Jan. 31, 1948. (AP Photo/Max Desfor)



Homeless people and their supporters burn trash in a street as they confront helmeted municipal workers, foreground, in Nishinari ward of Osaka, in western Japan Monday, Dec. 28, 1998. Hundreds of officials evicted some 35 homeless people inhabiting tents and cardboard shelters along a walkway in western Japan's largest city. The city of Osaka ordered the Monday evacuation after local residents complained that noise produced by the homeless was disturbing classes at a nearby junior high-school. (AP Photo/Yomiuri Shimbun)

7



Firefighters recover one of at least two people who miraculously survived after a five-storey building collapsed in Rome Wednesday December 16 1998. Some 38 people from sixteen families, were believed to live in the apartment house. Thirteen bodies have been recovered so far. (AP Photo/Andrew Medichini)



Dolphins lay dead at Venezuela's Turtle Island white-sand beach 100 miles (160 kms) northeast of the capital of Caracas on Monday Jan. 5, 1998. About 100 dolphins swam ashore on the island and died inexplicably in what experts Tuesday called one of the biggest mass beachings ever. By the time Coast Guard agents arrived Monday on the island, 80 dolphins lay dead on the hot beach and another 20 corpses were found floating after waves washed them back to sea, officials said. (AP Photo/Luis Vallencia, File)



Former Russian Prime Minister Viktor Chernomyrdin, right from a soldier, pays his final respects as he stands near the coffin containing the remains of the murdered liberal lawmaker Galina Starovoitova during the funeral service in St. Petersburg Tuesday, Nov. 24, 1998. Starovoitova, 52, one of the leaders of Russia's democratic movement, was shot to death Friday evening as she and an aide scaled the stairs to her apartment in St. Petersburg. The aide was seriously wounded, but has been able to provide some description of the shooting to police. (AP Photo/Ivan Sekretarev)



Mr. and Mrs. C.M. Levins hold their 3-month-old daughter after crawling from the debris of their Montgomery, Ala., home which was destroyed by a tornado Feb. 13, 1945. (AP Photo/Horace Cort)



Mt. Pleasant, Mich. students, Emily Kaiser, left, and Megan Maness, cry as they tour the remains of the Oklahoma City Murrah Federal Building Wednesday, April 15, 1998. The two students are part of their school band which will perform at the third anniversary ceremony of the bombing Sunday. (AP Photo/J. Pat Carter)



A boy and his sister whose family was slain in a weekend massacre cry in the streets of Chekala, a remote western Algerian village in the region of Relizane, Tuesday, Jan. 6, 1998. Armed men used guns and axes to murder more than two dozen people in two towns this week, survivors and hospital sources said Wednesday, Jan. 7, 1998 bringing the death toll in just three days to nearly 400. As Algeria's Islamic insurgency enters its seventh year, the number of civilians killed in grisly massacres is mounting and Algerian authorities seem unable - or unwilling - to stop the slaughter. (AP Photo)

Bibliography

- ABC News Poll April 24, 2000.* [Public Opinion Online]. ABC News (Survey Sponsor).
- Andersen, Kristi. (1997). Gender and Public Opinion, *Understanding Public Opinion*. Norrander, Barbara and Clyde Wilcox (eds.). Washington, D.C.:CQ Press.
- Aust, Charles F. and Zillman, Dolf. (1996). Effects of Victim Exemplification in Television News on Viewer Perception of Social Issues, *Journalism and Mass Communication Quarterly*. 73(4):787-803
- Babin, Laurie A. and Burns, Alvin C. (1997). Effects of Print Ad Pictures and Copy Containing Instructions to Imagine on Mental imagery that Mediates Attitudes. *Journal of Advertising*, 26(3):33-45.
- Bandura, Albert. (1977). Social Learning Theory. Englewood Cliffs, NJ: Prentice Hall.
- Barnhurst, Kevin and Nerone, John. (1999). The President is Dead: American News Photography and the New Long Journalism. In Bonnie Brennen and Hanno Hardt (Eds.) Picturing the Past: Media, History, and Photography. Urbana:University of Illinois Press.
- Barry, Anne Marie Seward. (1997). *Visual Intelligence Perception, Image, and Manipulation in Visual Communication*. State of New York Press: Albany, New York.
- Belsley, D. A., E. Kuh and R. E. Welsch. (1980). *Regression Diagnostics*. New York: John Wiley and Sons.
- Bradley, Margaret M.; Mark K. Greenwald, Margaret C. and Petry, Peter J. Lang.(1992). Remembering pictures: pleasure and arousal in memory. *Journal of Experimental Psychology: Learning, Memory and Cognition*. 18(2): 379-391.
- Braestrup, Peter. (1977). *Big Story How the American Press and Television Reported and Interpreted the Crisis of Tet 1968 in Vietnam and Washington*. Yale University Press:London.
- Brosius, Hans-Bernd. (1993). The Effects of Emotional Pictures in Television News, *Communication Research*. 20(1):105-124.

- Broude, Norma and Gerrard, Mary D. (1994). Introduction: Feminism and Art in the Twentieth Century, in *The Power of Feminist Art: the American Movement of the 1970s*. Norma Broude and Mary D. Gerrard, Eds. New York: Harry N. Abrams.
- Brower, David. (1991). *Work in Progress*. Salt Lake City, UT, Peregrine Smith Books.
- Cappella, Joseph N. (1993). The Facial Feedback Hypothesis in Human Interaction. Review and Speculation. *Journal of Language and Social Psychology*. 12:13-29.
- Cook, Elizabeth Adell. (1997). Public Opinion and Abortion Law in the Post-Webster Era, *Understanding Public Opinion*. Norrander, Barbara and Clyde Wilcox (eds.). Washington, D.C.:CQ Press.
- Crimp, Douglas and Rolston, Adam. (1990). *AIDS Demo Graphics*. Seattle, WA: Bay Press.
- Culbert, David. (1998). Television's Visual Impact on Decision-Making in the USA, 1968: The Tet Offensive and Chicago's Democratic Convention, *Journal of Contemporary History*. 33(3):419-449.
- Culbertson, Hugh M. (1976). Words vs. Pictures: Perceived Impact and Connotative Meaning, *Journalism Quarterly*. 53: 226-237.
- Davidson, Richard J. (2000). The Neuroscience of Affective Style, In Michael S. Gazzaniga (Ed.), *New Cognitive Neurosciences*, 2nd ed. Cambridge, MA: MIT Press.
- Dixon, Richard D.; Lowery, Roger C.; Levy, Diane E.; and Ferraro, Kenneth F. (1991). Self Interest and Public Opinion Toward Smoking Policies: a Replication and Extension, *Public Opinion Quarterly*. 55,2: 241-255.
- Donsbach, Wolfgang; Brosius, Hans-Bernd; and Mattenklott, Axel. (1993). How Unique is the perspective of Television? A Field Experiment on the Perception of a Campaign Event by Participants and Television Viewers, *Political Communication*. 10: 37-53
- Dyck, Evelyne J., and Coldevin, Gary. (1992). Using positive vs. negative photographs for Third-World fund raising. *Journalism Quarterly*. 69 (3):572-579.
- Edwardson, Mickie; Grooms, Donald; and Proudlove, Susanne. (1981). Television News Information Gain from Interesting Video vs. Talking Heads, *Journal of Broadcasting*. 25(1):15-24.

- Ekman, Paul; Friesen, Wallace; and Tomkins, Silvan. (1974). Facial Affect Scoring Technique A First Validity Study, in *Non-verbal Communication Readings with Commentary*, Shirley Weitz, ed. New York:Oxford University Press.
- Ekman, Paul. (1999). Basic Emotions. In Dalgleish, Tim and Power, Mick J(Eds). *Handbook of Cognition and Emotion*. Chichester, England: John Wiley & Sons Ltd. pp. 45-60.
- Fan, David P., Brosius, Hans-Bernd, and Kepplinger, Hans Mathias. (1994). Predictions of the public agenda from television coverage, *Journal of Broadcasting and Electronic Media*. 38(2): 163-177.
- Fishkin, James S. (1995). *The Voice of the People: Public Opinion and Democracy*. New Haven: Yale University Press.
- Fulton, Marianne. (1988). Changing Focus: The 1950s to the 1980s, in *Eyes of Time Photojournalism in America*. (Ed.) Marianne Fulton. Boston: Little Brown and Company.
- Gallup Organization Poll, April 7-9, 2000* (a). [Public Opinion Online]. Cable News Network, U.S.A. Today (Survey Sponsors).
- Gallup Organization Poll, April 28-30, 2000*. (b). [Public Opinion Online]. Cable News Network, U.S.A. Today (Survey Sponsors).
- Geer, John G. (1991). Do Open-Ended Questions Measure "Salient" Issues?, *Public Opinion Quarterly*. 55,3: 360-371.
- Gitlin, T. (1980). *The Whole World is Watching: Mass Media in the Making and Unmaking of the New Left*. Berkeley: University of California Press.
- Goldberg, Vicki. (1991). *The Power of Photography: How Photographs Changed Our Lives*. New York, NY: Abbeville Press.
- Graber, Doris. (1985). Approaches to Content Analysis of Television News Programs, *The European Journal of Communication*. 2: 25-35.
- Graber, Doris. (1987). Television News Without Pictures? *Critical Studies in Mass Communication*. 4 (1):74-78.
- Graber, Doris A. (1990). Seeing is Remembering: How Visuals Contribute to Learning from Television News, *Journal of Communication*. 40(3): 134-155.

- Graber, Doris (1996). Say it With Pictures, *The Annals of the American Academy of Political and Social Science*. 546:85-96.
- Green, Donald Philip and Gerkin, Elizabeth. (1989). Self-Interest and Public Opinion Toward Smoking Restrictions and Cigarette Taxes, *Public Opinion Quarterly* 531-547.
- Greenberg, Bradley s. (1980). Life On Television: Content Analysis of U.S. TV Drama. Norwood, NJ:Ablex.
- Griffin, Michael and Kagan, Simon. (1996). Picturing Culture in Political Spots:1992 Campaigns in Israel and the United States, *Political Communication*. 12(4): 61-.
- Griffin, Michael. (1999). *The Great War Photographs*. In Bonnie Brennen and Hanno Hardt (Eds.) Picturing the Past: Media, History, and Photography. Urbana:University of Illinois Press.
- Hall, Edward T. (1966). *The Hidden Dimension*. New York: Doubleday.
- Hirschman, Elizabeth C. (1986). The Effect of Verbal and Pictorial Advertising Stimuli on Aesthetic, Utilitarian, and Familiarity Perceptions. *Journal of Advertising*. 15(2):27-34.
- Iyengar, Shanto and Kinder, Donald R. (1987). *News that Matters: Television and American Opinion*. Chicago: University of Chicago Press.
- Iyengar, Shanto. (1991) *Is Anyone Responsible? How Television Frames Political Issues*. Chicago:University of Chicago Press.
- Jamieson, Kathleen Hall. (1992a). *Dirty Politics: Deception, Distraction, and Democracy*.NewYork: Oxford.
- Jamieson, Kathleen (1992b). *Packaging the Presidency: A History and Criticism of Presidential Campaign Advertising*. New York:Oxford.
- Jamieson, Kathleen Hall and Campbell, Karlyn Kohrs. (1992, 3rd ed.) *The Interplay of Influence : Mass Media & Their Publics in News, Advertising, Politics*. Belmont, CA: Wadsworth.
- Joslyn, Richard. (1980). The Content of Political Spot Ads. *Journalism Quarterly*, 57(1):92-98.
- Jussim, Estelle. (1988). "The Tyranny of the Pictorial" American Photojournalism from 1880 to 1920, in *Eyes of Time Photojournalism in America*. (Ed.) Marianne Fulton. Boston:Little Brown and Company.

- Just, Marion R., Crigler, Ann N., Alger, Dean E., Cook, Timothy E., Kern, Montague; West, Darrell M. (1992). *Crosstalk Citizens, Candidates, and the Media in a Presidential Campaign*. Chicago:University of Chicago Press.
- Kelly, Dennis D. (1991). Disorders of Sleep and Consciousness, In Eric R. Kandel, James, H. Schwartz, and Thomas M. Jessell (Eds), Principals of Neural Science (3rd). Connecticut:Appleton and Lang.
- Kennedy, Peter, 3rd ed. (1996). *A Guide to Econometrics*. The MIT Press:Cambridge, MA.
- Kepplinger, Hans. (1982). Visual Biases in Television Campaign Coverage. *Communication Research*. 9(3): 432-446.
- Kern, Montague. (1989). *30-Second Politics Political Advertising in the Eighties*, New York: Praeger.
- Kleinbaum, David G.; Kupper, Lawrence L.; Muller, Keith E.; and Nizam, Azhar. (1998).v3rd edition. *Applied Regression and Analysis of Variance*. Duxbury Press: New York.
- Kleinman, Arthur and Kleinman, Joan. (1996). The Appeal of Experience; the Dismay of Images: Cultural Appropriations of Suffering in Our Times, *Daedalus*. 125,1:23.
- Kraus, Sidney. (1996). Winners of the First 1960 Televised Presidential Debate Between Kennedy and Nixon, *Journal of Communication*. 46(4):78-96.
- Lang, Annie. (1991). Emotion, Formal Features, and Memory for Televised Political Advertisements, in *Television and Political Advertising Volume 1: Psychological Processes* Frank Biocca, ed. Hillsdale, New Jersey: Erlbaum.
- Lang, Annie, and Friestad, Marian. (1993). Emotion, hemispheric specialization, and visual and verbal memory for television messages. *Communication Research*. 20(5, October), 647-670.
- Lang, Annie, Dhillon, Kuljinder, and Dong, Qingwen. (1995). The effects of emotional arousal and valence of television viewers' cognitive capacity and memory. *Journal of Broadcasting and Electronic Media*. 39 (3): 313-327.

- Lang, Peter; Ē m an, A; and Vaitle, D. (1988). *The International Affective Picture System* [Photographic Slides]. Gainesville: Center for Research in Psychophysiology, University of Florida
- Lang, Peter J.; Greenwald, Mark K.; Bradley, Margaret M.; and Hamm, Alfons.O. (1993).
Looking at Pictures: Affective, Facial, Visceral, and Behavioral Reactions. *Psychophysiology*, 30, 261-273.
- Lang, Annie; Potter, Robert F.; Bolls, Paul D. (1999). Something for Nothing: Is Visual Encoding Automatic? *Media Psychology*. 1:145-163.
- Lang, Annie. (2000). *The Limited Capacity Model of Mediated Message Processing*, *Journal of Communication*. 50(1):46-70.
- Lester, Paul Martin. (1995). *Visual Communication: Images with Messages*. Belmont,CA: Wadsworth.
- Lippman, Walter. (1922). *Public Opinion*. New York: Harcourt, Brace and Company.
- Mandell, Lee M. and Shaw, Donald L. (1973). Judging People in the News Unconsciously-Effect of Camera Angle and Bodily Activity, *Journal of Broadcasting*. 17(3):353-363.
- McCain, Thomas; Chilberg, Joseph and Wakshlag, Jacob. (1977). The Effect of Camera Angle on Source Credibility and Attraction, *Journal of Broadcasting*. 21(1):35-46.
- McCombs, Maxwell E., and Shaw, Donald L. (1972). The agenda-setting function of mass media. *Public Opinion Quarterly*. 36 (2): 176-187.
- McCombs, Maxwell; Donald Shaw and David Weaver (eds). (1997). *Communication and Democracy: Exploring the Intellectual Frontiers of Agenda-Setting Theory*. Mahwah, New Jersey: Lawrence Erlbaum.
- McCombs, Maxwell; Einsiedel, Edna; and Weaver, David. (1991). *Contemporary Public Opinion: Issues and the News*. Hillsdale, New Jersey: L. Erlbaum.
- McGill, A.L. and Anand, P. (1989). The Effect of Vivid Attributes on the Evaluation of Alternatives: The Role of Differential Attention and Cognitive Elaboration. *Journal of Consumer Research*. 16(2): 188-196.

- McHugo, G.J.; Lanzetta, J.T.; Sullivan, D.G.; Masters, R.D.; and Englis, B.G. (1985). Emotional-Reactions to a Political Leader's Expressive Displays, *Journal of Personality and Social Psychology*. 49 (6): 1513-1529.
- Messariss, Paul. (1994). *Visual "Literacy": Image, Mind, and Reality*. Boulder, CO:Westview.
- Messariss, Paul. (1997). *Visual Persuasion the Role of Images in Advertising*. Thousand Oaks, CA: Sage.
- Meyrowitz, Joshua. (1986). Television and Interpersonal Behavior: Codes of Perception and Response. In G Gumpert and R. Cathart (Eds.), *Inter/Media: Interpersonal Communication in a Media World (3rd ed)*. New York: Oxford. 253-272.
- Miller, Joanna M. and Krosnik, Jon A. (1996). News Media Impact on the Ingredients of Presidential Elections: A Program of Research on the Priming Hypothesis. In *Political Persuasion and Attitude Change*. Diana C. Mutz, Paul M. Sniderman and Richard A. Brody, eds. Michigan: University of Michigan Press.
- Mitchell, A.A. and Olson, J.C. (1981). Are Product Attitude Beliefs the Only Mediator of Advertising Effects on Brand Attitude, *Journal of Marketing Research*. 18:318-332.
- Moeller, Susan (1989). *Shooting War Photography and the American Experience of Combat*. Basic Books: New York.
- Moeller, Susan. (1995). The Cultural Construction of Urban Poverty: Images of Poverty in New York City, *Journal of American Culture*. 18(4):1-15.
- Moeller, Susan (1999). *Compassion Fatigue, How the Media Sell Disease, Famine, War and Death*. Routledge: New York.
- Moriarty, Sandra and Garramone, Gina M. (1986). A Study of Newsmagazine Photographs of the 1984 Presidential Campaign, *Journalism Quarterly*, 63(4):728-734.
- Moriarty, Sandra E. and Popovich, Mark N. (1991). Newsmagazine Visuals and the 1988 Presidential Election, *Journalism Quarterly*. 68(3):371-18
- Morreale, Joanne. (1991). *A New Beginning: A Textual Frame Analysis of the Political Campaign Film*. State University of New York Press: Albany.

- Mullen, Lawrence J. (1997). The President's Visual Image from 1945 to 1974: An Analysis of Spatial Configuration in News Magazine Photographs, *Presidential Studies Quarterly*. 27(4):819-819-835.
- Mutz, Diana C. (1994). Contextualizing Personal Experience: the Role of Mass Media *The Journal of Politics*. 56,3:689-715.
- Nabi, Robin. (1998). *Reasoning through Emotion: Explication and Test of a Cognitive Functional Model for the Effects of Discrete Negative Emotions in Information Processing, Attitude Change and Recall*. Unpublished Dissertation.
- Nelson, Thomas E. and Kinder, Donald R. (1996). Issue Frames and Group-Centrism in American Public Opinion, *The Journal of Politics*. 58,4:1055-1079.
- Neuman, Just, and Crigler. (1992). *Common Knowledge News and the Construction of Political Meaning*. Chicago:University of Chicago Press.
- Newhagen, John E. and Reeves, Byron. (1991). Emotion and Memory Responses for Negative Political Advertising: A Study of Television Commercials Used in the 1988 Presidential Election, in *Television and Political Advertising Volume 1: Psychological Processes* Frank Biocca, ed. Hillsdale, New Jersey: Erlbaum.
- Newhagen, John E. and Reeves, Byron. (1992). The Evening's Bad News: Effects of Compelling Negative Television News Images on Memory, *Journal of Communication*. 42(2): 25-41.
- Nimmo, Dan. (1978). *Political Communication and Public Opinion*. Santa Monica, CA:Goodyear.
- Nixon, Rob. (1994). *Homelands, Harlem, and Hollywood: South African Culture and the World Beyond*. New York: Routledge.
- Oliver, Mary Beth. (1994). Portrayals of Crime, Race, and Aggression in "Reality-Based" Police Shows: A Content Analysis, *Journal of Broadcasting and Electronic Media*.
- Oshagan, Hayg. (1996). Reference Group Influence on Opinion Expression, *International Journal of Public Opinion Research*. 8,4:335-355.
- Perlmutter, David D. *Photojournalism and Foreign Policy Icons of Outrage in International Crises*. Westport, CT:Praeger.

- Price, Vincent. (1989). Social Identification and Public Opinion: Effects of Communicating Group Conflict. *Public Opinion Quarterly*. 53,2: 197-225.
- Reeves, Byron; Lang, Annie; Kim, Eun Young; and Tatar, Deborah. (1999). The Effects of Screen Size and Message Content on Attention and Arousal, *Media Psychology*. 1:49-67.
- Robinson, Michael J. (1981). Television and American Politics 1956-1976. In *Reader in Public Opinion and Mass Communication 3rd edition*, Morris Janowitz and Paul Hirsch (eds.). New York: Free Press.
- Rickards, Maurice. (1968). *Posters of the First World War*. New York: Walker and Company.
- Shedler, J. and Manis, M. (1986). Can the Availability Heuristic Explain Vividness Effects? *Journal of Personality and Social Psychology*. 51(1):26-36.
- Sherr, Susan A. (1999). Scenes from the political playground: An Analysis of the Symbolic Use of Children in Presidential Campaign Advertising. *Political Communication*. 16, 45-59.
- Sontag, Susan. (1999). *The Image World*, in Jessica Evans and Stuart Hall, (Eds.). *Visual Culture the Reader*. Thousand Oaks, CA: Sage. (80-94).
- South African History Archive, Poster Book Collective. (1991). *Images of Defiance South African Resistance Posters of the 1980s*. Johannesburg, South Africa: Ravan Press.
- Stange, Maren. (1989). *Symbols of Ideal Life Social Documentary Photography in America 1890-1950*. New York: Cambridge University Press.
- Stapp, William. (1988). "Subjects of Strange and of Fearful Interest" Photojournalism from Its Beginnings in 1839, in *Eyes of Time Photojournalism in America*. (Ed.). Marianne Fulton. Boston: Little Brown and Company.
- Stata Manual Release 6. (1999). College Station, TX: Stata Press.
- Taylor, Shelley E. and Thomson, Suzanne C. (1982). Stalking the Elusive "Vividness" Effect. *Psychological Review*. 89,2:155-181.
- Taylor, Bridget and Katarina Thomson. (1996). *Understanding Change in Social Attitudes*. Brookfield, Vermont: Dartmouth.
- Thompson, Gary. (1997). *Rhetoric Through Media*. Allyn and Bacon: Boston.

- Thornton, Bill; Kichner, Gail and Jacobs, Jacqueline. (1991). Influence of a Photograph on a Charitable Appeal: A Picture May be Worth a Thousand Words When it Has to Speak for Itself, Influence of a photograph on a charitable Appeal. *Journal of Applied Social Psychology*. 21(6): 433-446.
- Thorson, Ester; Christ, William; and Caywood, Clarke. (1991a). Effects of Issue-Image Strategies, Attack and Support Appeals, Music, and Visual Content in Political Commercials. *Journal of Broadcasting and Electronic Media*. 35:465-86.
- Thorson, Ester; Christ, William; and Caywood, Clarke. (1991b). Selling Candidates Like Tubes of Toothpaste: Is the Comparison Apt? in *Television and Political Advertising Volume 1: Psychological Processes* Frank Biocca, ed. Hillsdale, New Jersey: Erlbaum.
- Tickner, Lisa. (1988). *The spectacle of women : imagery of the suffrage campaign, 1907-1914*. Chicago : University of Chicago Press.
- Tiemens, Robert K. (1970). Some Relationships of Camera Angle to Communicator Credibility, *Journal of Broadcasting*. XIV(4):483-490.
- Tuch, Steven A. and Sigelman, Lee. (1997). Race, Class, and Black and White Issues in Social Policy Views, *Understanding Public Opinion*. Norrander, Barbara and Clyde Wilcox (eds.). Washington, D.C.:CQ Press.
- Waldman, Paul. and Devitt, James. (1998). Newspaper Photographs and the 1996 Presidential Election: The Question of Bias, *Journalism and Mass Communication Quarterly*. 75(2):302-311.
- Wanta, Wayne, and Wu, Yi-Chen. (1992). Interpersonal communication and the agenda setting process. *Journalism Quarterly*. 69 (4): 847-855.
- Wanta, Wayne, and Gao, Dandan. (1995). Young readers and the newspaper: Information recall and perceived enjoyment, readability, and attractiveness. *Journalism Quarterly*. 71 (4, Winter), 926-936.
- Wanta, Wayne. (1997). *The Public and the National Agenda How People Learn about Important Issues*. Mahwah, NJ: Lawrence Erlbaum.
- Watt, James H., Mazza, Mary, and Snyder, Leslie. (1993). Agenda-setting effects of television news coverage and the effects decay curve, *Communication Research*. 20 (3):408-435.
- Zaller, John. (1992). *The Nature and Origin of Mass Opinion*. New York:Cambridge University Press.

Zelizer, Barbie (1998). *Remembering to Forget Holocaust Memory through the Camera's Eye*. Chicago: University of Chicago Press.

Zettl, Herbert. (1973). *Sight, Sound, Motion Applied Media Aesthetics*. California: Wadsworth.

Zillman, Dolf; Gibson, Rhonda; and Sargent, Stephanie L. (1999). Effects of Photographs in News-Magazine Reports on Issue Perception. *Media Psychology*. 1:207-228.