



The primes of our times?

An examination of the 'power' of visual images

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ABSTRACT

Claims by political and news elites about the influence of visual images are far more common than actual evidence of such effects. This research attempts to gain insight into the 'power' of visual images, specifically those that accompany lexical-verbal messages in the press. We argue that the widely held notion that vivid images often drive public opinion is overly simplistic; in contrast, we posit that images most often *interact* with individuals' existing understandings of the world to shape information processing and judgments. With this in mind, we conducted an experiment in which news coverage was systematically altered – as including a famous photograph widely attributed great influence, or not – within otherwise constant information environments. Findings suggest that visual news images (a) influence people's information processing in ways that can be understood only by taking into account individuals' predispositions and values, and (b) at the same time appear to have a particular ability to 'trigger' considerations that spread through one's mental framework to other evaluations.

KEY WORDS ■ icons ■ information processing ■ news media
■ photojournalism ■ priming ■ visual images

Long before the development of mass communication, students of politics were concerned with the influence of both words and visual images on people's feelings and opinions toward important issues of the day. Plato's *Republic* (1987, trans. Lee) advocated the banning of both poets and painters from the ideal state because of their perceived impact on people's moods and attitudes, as well as their ability to create false versions of reality. Similar-sounding concerns about what we might call *visual determinism* have never really gone away, and today are echoed by a host of political powerholders and

commentators, especially in regard to the public's reactions to photographic and video journalism (Perlmutter, 1998). For instance, in the context of the United States' involvement in Somalia, *Time* magazine's Lance Morrow (1993) argued that powerful news images 'are mainlined directly into the democracy's emotional bloodstream without the mediation of conscious thought' (p. 36). Indeed, at the core of many significant developments of recent history – from the Tet offensive, to the Tiananmen events, to the political changes in Eastern Europe, to the Gulf War, to the Rodney King beating, to the wars in the former Yugoslavia – are certain famous iconic news images which, *according to elite and popular discourse*, were said to drive journalistic perspectives, public opinion, and in some cases, US policies (Bossen, 1982; Perlmutter, 1998).

That news must be visual is certainly an intrinsic value of modern journalism, from print to television (see Arlen, 1969; Epstein, 1973; Tuchman, 1978). As television news correspondent Jim Lederman (1992) asserts, 'Television news is enslaved to images. If an idea cannot be recorded in the form of an image, it will rarely, if ever, be given extensive time on a nightly network newscast' (p. 132). In the language of the powerful image model of news, the values that define a good story are identical to those that spur reaction from the public, as Pulitzer Prize-winning *Los Angeles Times* media critic David Shaw (1992) notes: 'Clear, dramatic pictures are the key to both "good television" and to the impact a given story will have on viewers' (p. A16).

This has led researchers to assert that 'The power of newspaper photography has been well documented for decades' (Garcia and Stark, 1991: 55). Nevertheless, systematic investigations of the actual influence of visual news images are rare. As Barnhurst (1994) notes, there have been many assumptions about the power of visual and lexical vividness in getting attention and enacting persuasion, even though 'social psychologists, marketing experts, advertisers, and presumably journalists work from the theory that the vividness of their communications has an influence on other people but not on themselves' (p. 97). Indeed, there seems to be a failure to prove what would seem commonsensical. Iyengar and Kinder (1987) argue that:

Politicians, journalists, and social scientists alike point to the special power allegedly inherent in presenting news through pictures . . . It is one thing to understand that American boys are fighting and dying in Vietnam; quite another to watch them fight and die. In each case, so it is argued, the concrete visual details matter enormously. (p. 35)

Yet, their own findings fail to show strong support for the vividness hypothesis. Clearly more research is needed which focuses on the visual dimension in public reactions to news.

Most scholarly studies of news photography have focused either on assessing the content of images (Griffin and Lee, 1995; Kenney, 1993; Lucaites,

1997; Woo, 1994) or the contexts of their production (Rosenblum, 1978; Schwartz, 1991). Further, the few audience studies are suggestive that public reaction to news photographs, for example, is much more complex and more diffuse than common wisdom (Bailey and Lichty, 1972; Bennett et al., 1992; Perlmutter, 1998). It is our contention, therefore, that an integral part of understanding the impact of news – on ordinary citizens and policy-makers alike – must include an examination of how people *process* media messages. In particular, while scholars in recent years have begun to devote increasing attention to people's use of core values and mental categories to sift through news messages (e.g. Capella and Jamieson, 1997; Iyengar and Kinder, 1987; Neuman et al., 1992; Price et al., 1997; Shah et al., 1996), the role of visual images is virtually unexamined. In addition, the importance of exploring the mechanisms involved in citizens' processing of visual images within the context of news coverage is highlighted by the growing trend toward integration of words and pictures in print, broadcast and internet news delivery packages.

This research attempts to gain insight into the 'power' of visual images that accompany lexical-verbal messages in the press. Specifically, we conducted an experiment in which individuals were presented with news coverage regarding the legacy of the Vietnam conflict, 25 years after the fall of Saigon: in one condition, a news story stood alone; in another condition, the same news story was accompanied by a widely disseminated photo of a young woman screaming beside the body of a student who had died during anti-war protests at Kent State University in 1970. According to the popular wisdom of visual determinism, such a picture should foster *sympathy* both for the perceived victim in the image and for the cause (the anti-war movement) associated with this person, and *antagonism* toward the agents of the tragedy, in this case the national guard and, relatedly, the government. However, in building closely upon research on the information processing of media messages, we suggest a contrary result: that the photograph may prompt individuals to draw upon already-developed 'considerations' (Zaller, 1992) of protestors as deviants, i.e. causers of disorder, and that such a mental process may foster more positive evaluations of the forces of order, represented most clearly by the government. In effect, as elaborated later, we argue that members of the public are not the dupes of pictures, as Socrates feared, but neither do people operate in cognitive and affective isolation from news images.

Literature review

Theorized effects of visual images can be parsed into the following areas, which do not necessarily coincide in the same image: (a) mnemonic power –

that is, can be easily recalled in their general details; (b) the ability to become icons that serve as metonyms or exemplars of particular events or issues; (c) great aesthetic impact, such as striking juxtapositions or riveting happenings (typically human suffering); (d) affective or emotional power, that is the ability to 'move' us to an emotional reaction such as outrage, sympathy, or pity; and finally, (e) potentially significant political power, such as the ability to create, alter, or reinforce elite or popular beliefs about causes and/or issues of the day and further affect government policy (Perlmutter, 1998, 1999).

Nevertheless, at the same time it seems certain that there is no 'innocent eye' (Gombrich, 1989). Even novel visual images we encounter are not isolated stimuli, but relate to previous images and ideas or arrive accompanied by words. As a result, images, like words, seem likely to be evaluated in relation to pre-existing beliefs and experiences – i.e. *schema*, defined as 'general cognitive mental plans, that are abstract and . . . serve as guides for action, as structures for interpreting information, as organized frameworks for solving problems' (Fiske and Taylor, 1991: 665; also Brewer and Nakamura, 1984; Fiske and Linville, 1980; Taylor and Crocker, 1981). When people are confronted with an object, person, idea, or issue, evidence suggests that stimuli congruent with one's schema are given greater attention (White and Carlston, 1983), are processed more quickly (Belmore, 1987; Brewer et al., 1981; Burnstein and Schul, 1982, 1983; Fiske and Neuberg, 1990; Helmsley and Marmurek, 1982), and are more likely to be stored in memory or to be recalled at a later time (Hastie, 1981). In short, evidence suggests that the mental categories already held by people significantly influence the manner in which 'new' information and stimuli are perceived, stored, recalled and subsequently used.

Ultimately, though, while a variety of mental categories might be 'available' to guide information processing, *which* particular ones become influential in evaluations and judgments may depend upon how mentally 'accessible' a particular construct is – that is, how easily it might be retrieved from memory. It is widely accepted that schema *frequently* or *recently* activated become more readily accessible for application to attitude objects (Fiske and Taylor, 1991; Higgins and Bargh, 1987; Higgins and King, 1981). In this process, research suggests that 'cues' in one's political and media environment may activate relevant cognitive structures to guide information processing and the construction of attitudes (Aldrich et al., 1989; Chaiken, 1980; Kuklinski and Hurley, 1994; Lau, 1989; Mondak, 1993; Shah et al., 1999; Tourangeau and Rasinski, 1988; Watts et al., 1999; Zaller, 1992). In turn, schema activated by contextual cues remain on top of the mental bin, making them highly accessible for at least a period of time (Srull and Wyer, 1989; Wyer and Srull, 1989). Thus, these constructs, if judged to be applicable, may alter the basis for evaluating even seemingly unrelated objects because judgments often 'depend

less on the entire repertoire of people's knowledge and more on which aspects of their knowledge happen to come to mind' (Iyengar and Kinder, 1987: 64). For example, a growing body of 'priming' research indicates that mass media emphasis on particular political issues increases the accessibility of certain ideas for individuals, which then shape the criteria that are *applied* while forming judgments about other concepts and ideas (e.g. Domke et al., 1998; Goidel et al., 1997; Iyengar et al., 1982; Johnston et al., 1992; Krosnick and Brannon, 1993; Krosnick and Kinder, 1990; Mendelsohn, 1996; Pan and Kosicki, 1997).

While considerable research has focused on how the frequent and recent use of information increases its accessibility, the manner in which bits of information are organized in the mind has received less attention. Some scholars have argued for a conception of memory as a network of connected cognitive structures (see Anderson, 1985; Anderson and Bower, 1973; Collins and Loftus, 1975). This perspective maintains that any one concept is associated with other constructs when encoded in memory, and that the linkages between constructs are strengthened each time they are activated in tandem. Further, as the number of separate linkages to any particular construct increases, so does the likelihood that it will be activated indirectly due to an 'implicational relation' (Judd and Krosnick, 1989). As a result, Berkowitz and Rogers (1986) argue, 'When a thought element is activated or brought into focal awareness, the activation radiates out from this particular node along the associative pathways to other nodes' (p. 58–9), thereby increasing the probability that related constructs will come to mind, influencing subsequent evaluations and the formation of impressions (see also Lodge and Stroh, 1993). For example, research has found that media coverage of political issues can 'trigger' a string of cognitively related evaluations about relevant aspects of one's information environment, suggesting that the relationship between media coverage and spreading activation processes deserves further exploration (Domke et al., 1998, 2000; Schleuder et al., 1991; Valentino, 1999).

The role of visual images in individuals' processing of political and mass media messages has received relatively little attention, however. This is not to say that scholars have ignored the ways in which visual stimuli are mentally received; indeed, considerable bodies of scholarship in psychology and social psychology indicate that visual images are recognized and subsequently recalled more quickly, and for a lengthier duration, than are lexical words (e.g. Anderson and Paulson, 1978; Anglin and Levie, 1985; Borges et al., 1977; Burton and Bruning, 1982; Emmerich and Ackerman, 1979; Gehring et al., 1976; Jenkins et al., 1967; Kaplan et al., 1968; Paivio, 1976; Park et al., 1983). An integration of these domains of research, then, suggests that individuals'

processing of news coverage and subsequent evaluations and judgments regarding one's social and political environments may be significantly influenced by the visual, although obviously language plays either a separate or an integratory role.

Hypotheses

We argue that the widely held notion that vivid images often drive public opinion is overly simplistic; certainly, such visual influence *has the potential* to occur and political elites often make claims to this effect. Indeed, the most common purveyors of the 'magic bullet' theory of news pictures, from Plato to today's presidents and pundits, tend to be intellectual, media, or political elites who project onto the public a condition of passive persuasion. As Perlmutter (1998) argues, an assumption of visual determinism upon public opinion among political elites 'gives rise to the standard incantation that "all America" was "shocked" by a given picture' though there is no or little empirical evidence that this is actually the case (p. 24). It is our view that images most often *interact* with individuals' existing understandings of the world to shape information processing and judgments. One way to gain insight into this theorized process is to examine whether and, if so, how the inclusion of visual images in news coverage influences people's thoughts and feeling about a particular topic, person, institution, and so on. With this in mind, we undertook an experiment in which the image of focus is John Paul Filo's *Girl Screaming over a Dead Body at Kent State* photograph, which won a Pulitzer Prize in 1970 and is regularly cited both as one of the most important news icons of the century and as having had profound impact in spurring public opinion against US involvement in the Vietnam War.¹

Popular wisdom about the 'power' of the visual might suggest that the characteristics and content of an image would override many pre-existing mental considerations or contextual concerns, and in so doing would significantly shape people's outlooks on the topic at hand. Certainly, an image containing the human drama and suffering present in Filo's photograph would seem to be capable of molding citizen cognitions, emotions, and subsequent opinion judgments. It seems reasonable to expect, therefore, that people presented with news coverage about the Vietnam era that includes this photograph of the Kent State shootings would be likely to respond sympathetically with the protestors, and conversely, against the war and government. Further, it is plausible that such a reaction might be particularly likely to occur among audiences who can *identify* with the perceived victims in the shooting – college students. Following this logic, today's college students might be one

audience (another, of course, might be current Baby Boomers who were then college students) that would be particularly likely to sympathize with the protestors' viewpoint and adopt a more negative view of the government. All of these possible outcomes are consistent, we suggest, with the popular understanding of politics and news that accords great persuasive power to visual images.

As noted already, however, claims about the persuasive power of visual images far outstrip actual evidence of such influence. In the case of Filo's photograph, there was no evidence at the time and none offered since, that this image actually spurred public opinion against the war. In fact, evidence suggests that many Americans at the time had quite *negative* views of anti-war protestors. For example, opinion surveys conducted throughout the Vietnam War showed that although US adults' support for the war decreased over time, mainstream public perception of the war protestors was consistently negative. As public opinion researcher John Mueller (1973) notes, '[O]pposition to the war in Vietnam came to be associated with rioting, disruption, and bomb throwing, and war protestors, as a group, enjoyed negative popularity ratings to an almost unparalleled degree' (p. 164). Similarly, political scientist George Herring (1986) argues:

Public opinion polls make abundantly clear . . . that a majority of Americans found the anti-war movement, particularly its radical and 'hippie' elements, more obnoxious than the war itself. In a perverse sort of way, the protest may even have strengthened support for a war that was not itself popular. (p. 173)

Notably, of all political groups throughout the war, 'anti-war protestors' were consistently viewed the most negatively in public opinion surveys (e.g. Gustainis and Hahn, 1998; Robinson, 1970; Small, 1994).

More broadly, that a consistently negative public perception of social protestors is due at least in part to news coverage of political issues is suggested by a considerable body of scholarship (e.g. Carragee, 1991; Gitlin, 1980; McLeod, 1995; McLeod and Detenber, 1999; Shoemaker, 1984; Wittebols, 1996). In a societal environment in which news discourse regularly reinforces such an outlook, negatively valenced 'considerations' (see Zaller, 1992) about protestors in general would seem likely to be present in the minds of many Americans. In particular, thoughts and feelings associated with protestors seem likely to be highly *accessible*, as individuals draw upon them with some regularity in processing information about their social and political environments. Indeed, it was the case during the Vietnam War, some evidence suggests, that even when press coverage was favorable to protestors, public reaction to their appearance, behavior, slogans and tone was markedly negative (Robinson, 1970). As a result, we expect that when news coverage about issues includes a visual 'cue' highlighting protestors affiliated with a particular

viewpoint, many citizens will become more likely to develop negative impressions of *that viewpoint* or, conversely, more positive impressions of a *counter perspective*. Our view, therefore, is that a visual image associated with protestors – even ones presented in a victimized light such as in the Kent State photograph – will ‘trigger’ negative considerations, which in turn will shape impressions of the various positions and entities involved in the issue debate. With this in mind, we offer our first hypothesis, stated in the positive form:

H1: Individuals receiving news coverage of a social issue that includes a visual image highlighting protestors affiliated with a particular viewpoint *will develop more positive impressions of the opposing viewpoint* than individuals receiving news coverage of the same issue that does not include this visual image.

At the same time, while we reject a visual determinism thesis regarding the persuasive power of visual images, it is our view that because of the highly visual and mediated nature of US culture, there is something important about encountering images that may impact the *connections that form* in people’s minds. As noted earlier, a growing body of ‘priming’ research indicates that mass media emphasis on particular topics increases the accessibility of certain ideas for individuals, which then shape the criteria that come to mind when forming subsequent judgments (e.g. Iyengar and Kinder, 1987; Krosnick and Kinder, 1990; Pan and Kosicki, 1997). Missing from this research, however, is an examination of the potentially distinct role of visual images. In particular, a large body of studies indicates that visual images can be recalled more quickly and for a lengthier duration than lexical words (e.g. Anderson and Paulson, 1978; Burton and Bruning, 1982; Gehring et al., 1976), which is suggestive of the powerful manner in which images – regardless of the persuasiveness of their manifest content – and associated considerations might become *integrated or embedded* in one’s mental framework. As scholars suggest, the greater the number of separate linkages to any particular construct when encoded in memory, the greater the likelihood that the construct will be activated subsequently in information processing (e.g. Judd and Krosnick, 1989; Lodge and Stroh, 1993).

With this in mind, our speculation is that the considerations activated in people’s processing of visual news images may be particularly likely to ‘carry over’, via a spreading activation process, to one’s evaluations of other aspects of the broader social and political environment. In the case of Filo’s Kent State photograph, we speculate that considerations activated in regard to the Vietnam War and US government may become associated with more general assessments of America’s political system and future. Such associations may be formed in the absence of visual cues in one’s news environment, of course, but our belief is that images may particularly spur and strengthen these associations. We expect this to occur because the image, as an outgrowth of its

metonymic power, may focus an individual's processing of a news message and, in so doing, suggest that there is something inherently important about the topic. In other words, simply the presence of visual images in news coverage, due to captioning, social learning, implication, or by their stylistic and content qualities, may prompt individuals to engage in deeper – or at least different – information processing that results in the image and associated considerations becoming more woven throughout one's understanding of the broader information environment. Accordingly, we now state our second and final hypothesis:

H2: The relationship between individuals' news-relevant considerations (e.g. about the Vietnam era and the US government) and more general evaluations of one's information environment will be much stronger among individuals receiving news coverage that includes a visual image than among individuals receiving news coverage that does not include that image.

Method

This study is part of a research program examining how individuals process media messages. The sample consisted of 155 undergraduate students drawn from two large research universities: one in the southeast and one in the northwest of the United States. Research presented here focuses on 79 of these subjects who received the experimental manipulation discussed later. Specifically, our focus is on whether and, if so, how visual images influence individuals' cognitive and affective considerations when people encounter news coverage about social issues. Data were collected in summer 2000.

Research design

The core of this research strategy is the controlled presentation of political information environments. All subjects received a news article that offered a retrospective synopsis of the Vietnam conflict, 25 years after the fall of Saigon. The article was (a) presented in a format modeled upon the style of *Time* and *Newsweek* and (b) similar in content to some of the actual 'Vietnam retrospective' news stories in spring 2000.² Two experimental conditions were created by manipulating the presence or absence of John Paul Filo's *Girl Screaming over a Dead Body at Kent State* photograph. This photograph was taken May 4, 1970, moments after a student, during an anti-war protest on the Kent State University campus, was shot by Ohio state national guardsmen. In the condition containing the photograph, the text was formatted to appropriately incorporate the image.

Notably, the news article contained a paragraph that referenced the Kent State shootings. In its entirety, the paragraph said:

In spring 1970, the US military's involvement in the war spread briefly to Cambodia. The fury came home to America. Nationwide protests occurred on many college campuses, and turned deadly when a confrontation between US National Guardsmen and protestors at Kent State University in Ohio left four students dead. The war was consuming America; it had become time to wrap things up.

No other mention of the Kent State shootings – or anti-war protestors, more generally – was included in the news article. In addition, the condition that included the photograph as part of the news coverage did *not* contain a caption for the image. To be clear, then: across experimental conditions, all written information in the news coverage (including headline) was held constant; only the presence of the photograph was altered.

Subjects were told that they were being asked to participate in a research project examining their views about news coverage and social issues. Subjects were randomly assigned to the experimental conditions and presented with the materials, including a questionnaire. Subjects took approximately 20 to 30 minutes to complete the materials.

Measurement

The questionnaire began with items focusing on subjects' evaluations of the US government, and then probed their thoughts and feelings about several components of the US political and social environments (see Appendix).

Two measures examined subjects' *trust in the federal government*. For the first item, 'How much of the time do you think that you can trust the federal government to do what is right?', subjects placed their responses on a 5-point continuum, ranging from 'almost never' to 'almost always'. This item had a mean of 2.86, with a standard deviation of .83. For a second item, subjects were asked to indicate 'how much is your personal trust' in a range of societal institutions; we focus here on the federal government. Responses were placed on a 7-point continuum, ranging from 'great distrust' to 'great trust'; this item had a mean of 3.92, with a standard deviation of 1.28.

Nine statements tapped subjects' *affective considerations about government*. Wording of the statements was identical except for the emotion specified. For example, the first item asked, 'When thinking about the United States government, how frequently do you feel frustrated?' For each item, subjects placed their responses on a 5-point continuum, which ranged from 'almost never' to 'almost always'. Following data collection, factor analysis was performed on these items. Using a Varimax rotation, two factors emerged: four items loaded

on one factor that accounted for 42.2 percent of variance, while three items loaded on a second factor that accounted for 14.7 percent of variance. Two items were dropped because they did not load on either factor. Consistent with research on the role of affect in political communication (e.g. Abelson et al., 1983; Conover and Feldman, 1986; Marcus and MacKuen, 1993), the two factors indicated correlated but distinct (a) negative feelings and (b) positive feelings, in this case toward the US government.

Items that loaded on the negative affect factor were frustrated, sad, angry and disgusted. Loadings fell in the range between .543 and .851. Responses to these items were used to build an additive *disillusion with government* index, which had mean inter-item correlations of .45 and a standardized alpha reliability of .77. This index mean is 11.9, with a standard deviation of 3.12.

Items that loaded on the positive affect factor were hopeful, happy and proud. Loadings fell in the range between .521 and .916. Responses to these items were used to build an additive *enthusiasm about government* index, which had mean inter-item correlations of .53 and a standardized alpha reliability of .77. This index mean is 8.75, with a standard deviation of 2.40.

Subjects were asked for their *evaluations of recent US presidents*, with responses placed on a 5-point continuum ranging from 'History suggests/will suggest that the President was bad for the nation' to 'History suggests/will suggest that the President was good for the nation.' Responses were as follows: John F. Kennedy ($M = 4.06$, $SD .98$); Lyndon Johnson ($M = 3.06$, $SD .81$); Richard Nixon ($M = 2.20$, $SD 1.00$); Gerald Ford ($M = 3.12$, $SD .56$); Jimmy Carter ($M = 3.12$, $SD .90$); Ronald Reagan ($M = 3.42$, $SD 1.18$); George Bush ($M = 3.17$, $SD 1.01$); and Bill Clinton ($M = 3.27$, $SD 1.20$).

An open-ended question engaged subjects in a thought-listing procedure to tap their cognitive considerations about the broader political environment. As expected, a number of responses included thoughts regarding the *integrity of the political system*. With this in mind, subjects' responses were coded for whether or not they characterized the political system as corrupt, with codings of 0 = system not characterized as corrupt, 1 = system characterized as corrupt.³ Two coders working in pairs agreed on 73 of 79 codings, producing an inter-coder reliability coefficient of .92, which was 84 percent greater than by chance. The remaining 6 responses were discussed and then classified. Slightly more than half (53.8%) of subjects characterized the political system as corrupt.

Two statements assessed subjects' *general optimism about their future*: (a) 'My children will be worse off than I am in their adulthood'; and (b) 'I look forward to my future.' These measures were drawn from research on the role of optimism in political participation (Seligman, 1991; Uslaner, 1998). For both items, responses were placed upon a 5-point continuum, ranging from

'strongly disagree' to 'strongly agree'. These items were strongly correlated ($r = -.52$) and, after reverse-coding the former item, were added to create an *optimism* index, which had a standardized alpha reliability of .69. This index mean is 7.7, with a standard deviation of 1.81.

Finally, demographic and orientational variables were collected as part of a pre-experimental questionnaire. Subjects indicated their gender (57% female), race or ethnicity (65% white, 8% African American, 14% Asian American, 8% Hispanic, 5% other or abstained), age (78% between ages 18 and 22), political party most closely identified with (45% Democrats, 33% independent/unaffiliated, 22% Republicans), and, on a 7-point continuum from 'almost none' to 'a great deal', interest in politics ($M = 3.71$, $SD 1.63$). Forty of the subjects attended the southeast university, 39 attended the northwest university.

Results

Hypothesis 1 was tested at the experimental level. Hypothesis 2 was tested within experimental conditions, an approach that allowed examination of the mental linkages that formed during information processing.⁴

Hypothesis 1

In general, hypothesis 1 posits that visual images will interact with individuals' existing cognitive and affective considerations to shape the manner in which people process news coverage and form judgments. Specifically, in drawing upon research which suggests the presence of consistent negative public perceptions of protest groups, we predicted that individuals receiving news coverage of a social issue that includes a visual image highlighting protestors affiliated with a particular viewpoint will develop *more negative impressions of that viewpoint* or, stated in a forward manner, more positive impressions of *the opposing viewpoint* than individuals receiving news coverage of the same issue that does not include this visual image.

John Paul Filo's *Girl Screaming over a Dead Body at Kent State* photograph highlights people that oppose the US government's involvement in the Vietnam War. Therefore, our expectation is that subjects receiving the visual image will form more positive impressions of the government, due to the reaction *against* the protestors, than subjects who do not receive the visual image.⁵ As a first test of this hypothesis, *t* tests were run between experimental conditions, with trust in the federal government as the dependent variables (see Table 1).

Table 1 Experimental conditions by subjects' trust in federal government

	Experimental condition		<i>t</i>	<i>p</i>
	Text only	Text and photo		
Trust federal govt. to do what is right ^a	2.65 (<i>n</i> = 40)	3.08 (<i>n</i> = 39)	2.35	< .05
Degree of personal trust in federal govt. ^b	3.73 (<i>n</i> = 40)	4.13 (<i>n</i> = 38)	1.42	.08

Notes:

Numbers are mean scores

a. Range: 1 = almost never to 5 = almost always

b. Range: 1 = great distrust to 7 = great trust

The hypothesis received strong support. As the results in Table 1 show, subjects presented with the Kent State photograph as part of the news coverage indicated significantly more positive impressions of the government than subjects presented only with the news article. When the focus was on trust in federal government 'to do what is right', subjects receiving the photograph and news article exhibited a mean score of 3.08, compared to 2.65 among subjects receiving solely the news article. When the focus was on one's extent of 'personal trust' in the federal government, subjects receiving the photograph and news article exhibited a mean score of 4.13, compared to 3.73 among subjects receiving solely the news article. Results, therefore, are consistently supportive of the hypothesis across both measures of trust in government.

As a second test of this hypothesis, *t* tests were run between experimental conditions with affective evaluations of the federal government as the dependent variables (see Table 2).

These results also provide support for hypothesis one. As the results in Table 2 show, subjects receiving the visual image along with the news article

Table 2 Experimental conditions by subjects' (a) disillusion with government and (b) enthusiasm about government

	Experimental condition		<i>t</i>	<i>p</i>
	Text only	Text and photo		
Disillusion with government ^a	12.33 (<i>n</i> = 40)	11.59 (<i>n</i> = 39)	1.05	n.s.
Enthusiasm about government ^b	8.15 (<i>n</i> = 40)	9.36 (<i>n</i> = 39)	2.30	< .05

Notes:

Numbers are mean scores

a. Range: 4 = low disillusion to 20 = high disillusion

b. Range: 3 = low enthusiasm to 15 = high enthusiasm

exhibited *less disillusion* and *more enthusiasm* toward the US government than subjects receiving only the news article. Specifically, subjects receiving the photograph and news article exhibited a mean disillusion with government score of 11.59, noticeably lower than the 12.33 among subjects receiving solely the news article. At the same time, subjects receiving the photograph and news article exhibited a mean enthusiasm about government score of 9.36, much higher than the 8.15 among subjects receiving solely the news article. Although only the second finding is statistically significant, the results are directionally consistent, lending further support to hypothesis one.

Finally, *t* tests were run between experimental conditions with evaluations of recent US presidents serving alternately as the dependent variables. We do not present these as tests of the hypothesis because unlike the results in Tables 1 and 2, this analysis has a focus on *impressions of the past* rather than upon *judgments of contemporary government*; nonetheless, these findings offer additional insight into the theorized relationships. For six of the eight presidents – Kennedy, Johnson, Carter, Reagan, Bush and Clinton – there were no significant differences between experimental conditions. For two of the presidents, however, significant differences were found between experimental conditions. Specifically, subjects receiving the photograph and news article formed (a) significantly more positive impressions of Richard Nixon as president than subjects receiving only the news article ($M = 2.38$ vs 2.03 respectively, $p = .06$), and (b) significantly more positive impressions of Gerald Ford as president than subjects receiving only the news article ($M = 3.23$ vs 3.00 respectively, $p < .05$). Both served as presidents during the Vietnam conflict, of course, with Nixon presiding when the Kent State shootings occurred. That subjects presented with the photograph and news article rated these two presidents more favorably than subjects presented with only the news article is intriguing and consistent with the results in Tables 1 and 2.⁶

The pattern of results, then, provides strong support for hypothesis 1.

Hypothesis 2

Hypothesis 2 examines whether the presence or absence of visual images in news coverage influences the associative linkages that form or develop in people's minds. In the case of Filo's Kent State photograph, we posit that considerations activated in regard to the US government may 'carry over', via a spreading activation process, to judgments of America's political system and future. Specifically, the hypothesis predicts that the relationship between individuals' news-relevant considerations (in this case, about US government) and more general evaluations of one's information environment will be much stronger among individuals receiving news coverage that includes a visual

image than among individuals receiving news coverage that does not include that image.

For this hypothesis, we focused on two particular evaluations by subjects – optimism about the future and characterization of the political system as corrupt or not. We examined the correlation between each of these with (a) trust in government, (b) disillusion with government, and (c) enthusiasm about government *separately* for subjects within the differing experimental conditions. Among those receiving the photograph along with the news article, we expected an identifiable pattern of linkages, which would suggest a close association between subjects' considerations about government and more general judgments about the social and political environment, and that these mental constructs were consistently activated in tandem. In contrast, among subjects receiving only the news article, there should not be a distinguishable pattern of linkages, which would suggest that considerations about government and more general judgments about the social and political environment were essentially unassociated in subjects' information processing. Partial correlations were run, controlling for subject population, race/ethnicity, gender, political party affiliation, and political interest.⁷

As tests of this hypothesis, these correlations were run first with a focus on subjects' optimism about the future (see Table 3) and then with a focus on subjects' perceptions of corruption in the political system (see Table 4).

Table 3 Correlations between subjects' evaluations of government and optimism about future

	Experimental condition	
	Text only	Text and photo
Optimism about future ^a by		
Trust federal govt. to do what is right ^b	.05	-.00
Degree of personal trust in federal govt. ^c	.14	.13
Disillusion with government ^d	.11	-.36*
Enthusiasm about government ^e	.16	.41**
	(n = 36)	(n = 35)

Notes:

Correlations control for subject population, gender, race/ethnicity, political party identification, and political interest

- a. Range: 2 = low optimism to 10 = high optimism
 - b. Range: 1 = almost never to 5 = almost always
 - c. Range: 1 = great distrust to 7 = great trust
 - d. Range: 4 = low disillusion to 20 = high disillusion
 - e. Range: 3 = low enthusiasm to 15 = high enthusiasm
- * $p < .05$, ** $p < .01$

Table 4 Correlations between subjects' evaluations of government and perception of corruption in political system

	Experimental condition	
	Text only	Text and photo
Characterization of political system ^a by		
Trust federal govt. to do what is right ^b	.10	-.56**
Degree of personal trust in federal govt. ^c	-.00	-.51**
Disillusion with government ^d	.04	.32*
Enthusiasm about government ^e	-.07	-.54**
	(<i>n</i> = 36)	(<i>n</i> = 35)

Notes:

Correlations control for subject population, gender, race/ethnicity, political party identification, and political interest

a. Range: 0 = system not characterized as corrupt, 1 = system characterized as corrupt

b. Range: 1 = almost never to 5 = almost always

c. Range: 1 = great distrust to 7 = great trust

d. Range: 4 = low disillusion to 20 = high disillusion

e. Range: 3 = low enthusiasm to 15 = high enthusiasm

* $p < .05$, ** $p < .01$

Several points are noteworthy about these results. First, when the news coverage included only the article there were *no* statistically significant correlations between optimism about the future or perceptions of corruption in the political system with (a) trust in government, (b) disillusion with government, and (c) enthusiasm about government. While these results do not necessarily indicate that the absence of visual images in news coverage *weakened* the linkages among these considerations, it clearly did not facilitate *strong* associations among them.

In contrast, for subjects receiving the news coverage that contained the Kent State shooting photograph, several significant correlations are present. First, correlations indicate a positive relationship between enthusiasm about government and optimism about the future ($r = .41$, Table 3) and a negative relationship between enthusiasm about government and characterization of the political system as corrupt ($r = -.54$, Table 4). Second, consistent with these results, correlations indicate a negative relationship between disillusion with government and optimism about the future ($r = -.36$, Table 3) and a positive relationship between disillusion with government and characterization of the political system as corrupt ($r = .32$, Table 4). Third, negative relationships are found between trust in the federal government to what is right and a perception of the political system as corrupt ($r = -.56$, Table 4) and between one's degree of personal trust in the federal government and a

perception of the political system as corrupt ($r = -.51$, Table 4).⁸ It is the case, however, that even among subjects presented with the visual image, trust in the federal government is not significantly related to optimism about the future, a finding to which we return in the following section.

These results, then, support the prediction of hypothesis 2 that the inclusion of visual images in news coverage influences the associative linkages – particularly, perhaps, those involving affective considerations – that develop in people's minds.

Discussion

It is both one of the oldest and one of the most current assumptions of political theorists, elites and news pundits that vivid, striking images have a particularly strong impact on public opinion and, in turn, on the political behavior of individuals. To be specific, elites in the press and politics – and some in scholarly circles – have consistently claimed that the persuasive outcome, that is *the direction of the public's sympathies in reaction to an image*, is manifestly predictable (Perlmutter, 1998). In fact, however, the limited evidence suggests that people react in complex ways to news images, even widely disseminated and discussed 'icons of outrage' (e.g. Bailey and Lichty, 1972; Bennett et al., 1992; Perlmutter, 1998). The reality, we suggest, is that individuals of course *can* be persuaded by images, but that one's pre-existing values, cognitions and feelings often play a major role in how images are attended to, interpreted and acted upon. Indeed, image content and accompanying news narratives seem likely to interact with individuals' considerations to shape affective and cognitive reactions. Our findings support this theoretical argument, in at least two important ways.

First, our findings suggest that the 'power' of visual images may not necessarily lie in their ability to *persuade* individuals to adopt perspectives that align closely with the manifest content of an image – or, at least, the content as it is interpreted by key elites and journalists in the political process. Specifically, individuals in this experiment did not automatically align their opinions with anti-war protestors highlighted by John Paul Filo's photograph of the May 1970 shootings at Kent State University; instead, our findings are consistent with research that has documented people's often-negative considerations about protestors, who are commonly perceived as unruly, unnecessary obstructions to social order (e.g. Bailey and Lichty, 1972; Robinson, 1970). Indeed, our results indicate that individuals presented with the photograph responded more favorably toward the entities *opposing* the protestors, in this case the federal government. Specifically, subjects receiving the condition

that contained the photograph in news coverage exhibited (a) greater trust in the federal government, and (b) less disillusion and more enthusiasm toward US government than subjects presented with only the news article.⁹ Further, it seems noteworthy that these results were found among a population seemingly inclined, both in terms of political ideology (i.e. left-leaning) and life experiences (i.e. also college students), to respond more favorably toward the anti-war protestors than the government.

Second, our findings suggest that images may have a particularly powerful ability to 'trigger' people's activated considerations in a manner that fosters a spreading activation process through the mind as individuals evaluate a social and political environment. A growing body of research on 'priming' has documented that media messages have this ability (e.g. Iyengar and Kinder, 1987; Krosnick and Kinder, 1990; Pan and Kosicki, 1997), but virtually ignored in this work is the potentially distinct role of visual images. Indeed, our evidence suggests that news coverage which contains visual images may have a greater ability than text-only first, to activate one's news-relevant considerations, and second, to prompt a 'carry over' of these activated constructs to subsequent judgments regarding related concerns. Specifically, in this study, individuals who received the photograph exhibited much stronger associations between both their cognitions (i.e. trust) and emotions (i.e. enthusiasm and disillusion) about the US government with two additional assessments of America's present and future political system. Specifically, the relationship between (a) trust in government and (b) feelings toward government with (c) a perception of the political system as corrupt was significantly stronger among subjects presented with the visual image. Similarly, the relationship between feelings toward government and optimism about the future also was significantly stronger among subjects presented with the photograph. Interestingly, one's trust in the federal government was essentially *unrelated* to optimism about the future regardless of experimental condition, which is suggestive that, at least for the subjects in this study (undergraduate students), faith in government integrity may be viewed as not particularly relevant to their future success or opportunities.

These findings are also suggestive of the ways in which visual images may intersect with both cognitive and affective dimensions of individuals' information processing. Both popular news media and pundits – and some scholarly research – suggest that visual images are important primarily due to their ability to engender emotional reactions (Goldberg, 1993; Koch, 1990; Monk, 1989; Morrow, 1993). Indeed, studies of human brain structures do suggest that pictures with visual signals are processed separately and before our reasoning skills attempt to cognitively process them. In short, 'we begin to respond emotionally to situations before we can think them through' (Barry,

1997: 18). This is a sensible evolutionary adaptation: the flicker of yellow fur of a stalking saber-toothed tiger needs to elicit a response from us immediately, with no waiting for deliberative consideration.

In response, we caution that recognition and reaction do not always predict the nature of the viewer's response. Modern humans do not always 'fight or flight' in reaction to news pictures of Kent State or, these days, Afghanistan – emotional connection depends on what is seen and who is in the picture. It may be true that, as Graber (1996) puts it, the brain is far better at extracting information quickly and efficiently from visual images than from text. But our findings suggest that news photographs can trigger a complex set of cognitive and affective processes, and that these intertwine closely throughout people's mental frameworks to shape information processing and decision making, as a growing body of research suggests (e.g. Conover and Feldman, 1986; Marcus and MacKuen, 1993). Notably, Just et al. (1996) criticize political communication scholarship for neglecting the role of emotion in research on media effects and information processing; indeed, they argue that framing research in particular should incorporate a concern with both the cognitive criteria (e.g. factual information) and affective tone (e.g. intensity of language) of news coverage. Clearly, the manner in which many issues are covered by news media – both in terms of news texts and photographs – is *not* purely cognitive *or* affective. Much more research is needed on the ways in which news coverage, and particularly visual images, interact with people's cognitive and affective considerations.

While this research offers an insight into the role of visual images in citizens' processing of news media messages, we recognize that it has some weaknesses. In particular, we theorize that the cognitive and affective processes triggered by visual images depend, in significant ways, on the considerations and inter-connections within an individual's mental system. With this perspective, we found that the presence or absence of John Paul Filo's Kent State photograph in news coverage significantly influenced (a) how people thought and felt about the federal government, and (b) how strongly these evaluations were associated with judgments about the broader US political system and future. We are unable, however, to offer concrete evidence of the actual *relations between* mental constructs, partly due to the difficulty of getting inside the cognitive 'black box'. We recommend that future experimentation include a pre-test of assumptions about cognitions and feelings toward government, a more extensive post-test questioning of subjects about their prior knowledge of the image-stimulus and their feelings toward it, and a post-test check on the subjects' self-descriptions of their thinking in reaction to the stimulus.

We also note that our measurement focuses upon subjects' impressions of government, the institutional opponent of many Vietnam era protestors, rather than on protestors themselves; we believe assessments of government are politically more important than evaluations of protestors, but it is nonetheless the case that we do not have direct measures of subjects' view of the primary focus of the photograph in this study. In recognition that the meaning of visual images may be more 'open' than that of many lexical-verbal texts, more explicit measurement of all meaningful elements within an image would be an improvement in future research. Finally, the limitations of any single experimental study are obvious. Until the role and import of visual images in individuals' processing of news coverage begin to be examined across differing populations and differing issues and with differing methodologies, we recognize that our understanding will remain necessarily incomplete.¹⁰

Notes

- 1 The context for this photograph, in brief: on 30 April 1970, President Richard Nixon announced the invasion of Cambodia to combat incursion and supply routes by the Vietcong and North Vietnamese army. Some form of protests occurred on most major campuses in the United States, including Kent State University, Ohio. During the course of one protest the university's Army ROTC building was burned down. Ohio's governor deployed units of the State national guard on campus. On 4 May, four students were killed and nine others were wounded when guardsmen opened fire. In Filo's photograph, Mary Ann Vecchio, who was not a Kent State student but was on campus that day, is kneeling and screaming next to the body of Kent State student Jeffrey Miller. A host of unofficial and official investigations blamed almost everyone involved, including the students. For details on Filo and his photograph, see Goldberg (1993: 236–41; *News Photographer*, 1995).
- 2 The degree of neutrality of the constructed news article is not a focus of our hypotheses; nonetheless, consistent with much of the actual retrospective news coverage of Vietnam, our constructed article was a pragmatic assessment of US government and military efforts in Vietnam, neither strongly critical nor strongly supportive.
- 3 Subjects were coded as characterizing the political system as corrupt if they claimed that politics *fundamentally* is one of the following: immoral or morally bankrupt; corrupt; dishonest or crooked; replete with lies, deceit, and hypocrisy; or driven solely by money or greed.
- 4 Within-groups analysis, conducted for hypothesis two, is necessary to get 'within the cognitive system of the individual' (Lavine et al., 1996: 298).
- 5 For hypothesis one, we focus on subjects' cognitive and affective considerations about government, rather than those about (a) protestors in general, (b) anti-war protestors in general, or (c) the specific individuals in this photograph. We do

this because our central interest is the *political implications* of the effects of visual images and news texts upon people's information processing and judgments. Certainly, impressions of protest groups and protestors matter politically, but we believe that considerations about government, particularly those of focus in our analysis, have more significant implications for citizenship, public life and democracy. In addition, focusing on considerations about government rather than only on protestors presents a more challenging test of our ideas because it places a central emphasis upon the associations present and formed in people's minds, which are integral in our theoretical argument.

- 6 With the Nixon and Ford results in mind, one other US president evaluated by subjects – Lyndon Johnson, who also presided during the war – might also seem likely to benefit from the presence of the visual image in news coverage. Johnson did receive slightly more positive evaluations among subjects receiving the photograph and news article ($M = 3.13$) than among subjects receiving only the news article ($M = 3.00$), but the difference was not statistically significant. It seems plausible that considerations raised about protestors and government by this specific photograph would be most closely associated with Nixon, who will be forever linked with Ford. In this way, the fact that subjects' evaluations of Johnson are not significantly affected by the presence or absence of the photograph appears consistent with the associative network model of the mind underpinning this research.
- 7 The controlled variables were coded as follows: subject population (1 = southeast university population, 2 = northwest university population); race/ethnicity (1 = white, 2 = nonwhite); gender (1 = male, 2 = female); political party affiliation (1 = Democrat, 2 = Independent/unaffiliated, 3 = Republican); and political interest (1 = almost none to 7 = a great deal).
- 8 Fisher's correlational difference test was used to examine whether the correlations were significantly different *across* experimental conditions. In Table 3 with optimism about the future, the association with disillusion about government was significantly stronger ($p < .05$) among subjects presented with the visual image, while the association with enthusiasm about government approached significance ($p = .12$) across conditions. In Table 4 with characterization of the political system as corrupt, associations with both measures of trust in the federal government and enthusiasm about government were significantly stronger ($p < .05$) among subjects presented with the visual image, while the association with disillusion with government approached significance ($p = .11$) across conditions. These results provide further support for hypothesis 2.
- 9 Our findings are consistent with what is known as the 'rally round the flag effect': that the public tends to exhibit a more positive outlook regarding national leaders and federal government during times of national crisis (see Brody, 1984; Kernell, 1978; Mueller, 1973). The photograph in this study well may engender the notion of a 'crisis', and the accompanying news article informs subjects that this shooting occurred in the context of both (a) the Vietnam War, and (b) public 'disorder'. Consistent with this also are subjects' more positive views of the two presidents (Richard Nixon and Gerald Ford) who bracket prologue, occurrence and closure on the Kent State events and aftermath.
- 10 We thank an anonymous reviewer for suggesting these measures.

Appendix: Question Wording

The following questionnaire items were used in this research:

Perceptions of integrity of the political system

When you think about the United States government, what thoughts, feelings, or beliefs come to mind? Complete sentences are not needed. You may simply list words or phrases that capture your views.

- Responses were open-ended

When you think about politics, what thoughts, feelings, or beliefs come to mind? Complete sentences are not needed. You may simply list words or phrases that capture your views.

- Responses were open-ended

Trust in the federal government

How much of the time do you think that you can trust the federal government to do what is right?

- Response options: 1 = Almost never to 5 = Almost always

There are many different institutions in this country. Please indicate how much is your personal trust in each of the following. [Focus here is on 'federal government']

- Response options: 1 = Great distrust to 5 = Great trust

Affective considerations about government

When thinking about the United States government, how frequently do you feel frustrated? [Subsequent questions inserted hopeful, happy, sad, angry, proud, and disgusted]

- Response options: 1 = Almost never to 5 = Almost always

Evaluations of recent U.S. presidents

Please evaluate some recent U.S. presidents. [Presidents included were John F. Kennedy, Lyndon Johnson, Richard Nixon, Gerald Ford, Jimmy Carter, Ronald Reagan, George Bush, and Bill Clinton]

- Response options: 1 = History suggests/will suggest that the President was bad for the nation to 7 = History suggests/will suggest that the President was good for the nation

General optimism about the future

Please rate your level of agreement with the following statements.

My children will be worse off than I am in their adulthood.

- Response options: 1 = Strongly disagree to 5 = Strongly agree

I look forward to my future.

- Response options: 1 = Strongly disagree to 5 = Strongly agree

Demographics and political orientations

What is your age?

What is your gender?

What is your race or ethnicity?

- Response options: White (Caucasian); African American; Asian; Hispanic; Native American; Other [space provided for self-identification for this category]

In general, how much interest do you have in politics?

- Response options: 1 = Almost none to 7 = A great deal

With which major political party do you most closely identify, if any?

- Response options: Democrats; Republican; Reform; Independent/unaffiliated

References

- Abelson, R. P., D. R. Kinder, M. D. Peters and S. T. Fiske (1983) 'Affective and Semantic Components in Political Person Perception', *Journal of Personality and Social Psychology* 42: 619–30.
- Aldrich, J. H., J. A. Sullivan and E. Borgida (1989) 'Foreign Affairs and Issue Voting: Do Presidential Candidates "Waltz" before a Blind Audience?', *American Political Science Review* 83: 123–41.
- Anderson, J. R. (1985) *Cognitive Psychology and its Implications*. New York: Freeman.
- Anderson, J. R. and G. H. Bower (1973) *Human Associative Memory*. Washington, DC: Winston.
- Anderson, J. R. and R. Paulson (1978) 'Interference in Memory for Pictorial Information', *Cognitive Psychology* 10: 178–202.
- Anglin, G. J. and W. H. Levie (1985) 'Role of Visual Richness in Picture Recognition Memory', *Perceptual and Motor Skills* 61: 1303–6.
- Arlen, M. (1969) *Living-Room War*. New York: Viking.
- Bailey, G. A. and L. Lichty (1972) 'Rough Justice on a Saigon Street: A Gatekeeper Study of NBC's Tet Execution', *Journalism Quarterly* 49(2).
- Barnhurst, K. G. (1994) *Seeing the Newspaper*. New York: St Martin's Press.
- Barry (1997) *Visual Intelligence: Perception, Image and Manipulation in Visual Communication*. Albany: State University of New York Press.
- Belmore, S. M. (1987) 'Determinants of Attention during Impression Formation', *Journal of Experimental Psychology: Learning, Memory, and Cognition* 13: 480–9.
- Bennett, E. M., J. D. Swenson and J. S. Wilkinson (1992) 'Is the Medium the Message? An Experimental Test with Morbid News', *Journalism Quarterly* 69(4): 921–8.

- Berkowitz, L. and K. H. Rogers (1986) 'A Priming Effect Analysis of Media Influences', in J. Bryant and D. Zillman (eds) *Perspectives on Media Effects*, pp. 57–81. Hillsdale, NJ: Erlbaum.
- Borges, M. A., M. A. Stepnowski and L. H. Holt (1977) 'Recall and Recognition of Words and Pictures by Adults and Children', *Bulletin of the Psychonomic Society* 9: 113–14.
- Bossen, H. (1982) 'A Tall Tale Retold: The Influence of Photographs of William Henry Jackson upon the Passage of the Yellowstone Act of 1872', *Studies in Visual Communication* 8(1): 84–109.
- Brewer, M. B., V. Dull and L. Lui (1981) 'Perceptions of the Elderly: Stereotypes as Prototypes', *Journal of Personality and Social Psychology* 41: 656–70.
- Brewer, W. F. and G. V. Nakamura (1984) 'The Nature and Functions of Schemas', in R. S. Wyer, Jr and T. K. Srull (eds) *Handbook of Social Cognition*, Vol. 1, pp. 119–160. Hillsdale, NJ: Erlbaum.
- Brody, Richard A. (1991) *Assessing the President*. Stanford, CA: Stanford University Press.
- Burnstein, E. and Y. Schul (1982) 'The Informational Basis of Social Judgments: Operation in Forming Impressions of Other Persons', *Journal of Experimental Social Psychology* 18: 217–34.
- Burnstein, E. and Y. Schul (1983) 'The Informational Basis of Social Judgments: Memory for Integrated and Non-integrated Trait Descriptions', *Journal of Experimental Social Psychology* 19: 49–57.
- Burton, J. K. (1982) 'Dual Coding of Pictorial Stimuli by Children', *Journal of Mental Imagery* 6: 159–68.
- Burton, J. K. and R. H. Bruning (1982) 'Interference Effects on the Recall of Pictures, Printed Words, and Spoken Words', *Contemporary Educational Psychology* 7: 61–9.
- Cappella, J. N. and K. H. Jamieson (1997) *Spiral of Cynicism: The Press and the Public Good*. New York: Oxford University Press.
- Carragee, K. (1991) 'News and Ideology: An Analysis of Coverage of the West German Green Party by the *New York Times*', *Journalism Monographs* 128.
- Chaiken, S. (1980) 'Heuristic Versus Systematic Information Processing and the Use of Source Versus Message Cues in Persuasion', *Journal of Personality and Social Psychology* 39: 752–66.
- Collins, A. M. and E. F. Loftus (1975) 'A Spreading Activation Theory of Semantic Processing', *Psychological Review* 82: 407–28.
- Conover, P. M. and S. Feldman (1986) 'Emotional Reactions to the Economy: I'm Mad as Hell and I'm Not Going to Take It Anymore', *American Journal of Political Science* 30: 50–78.
- Domke, D., D. V. Shah and D. Wackman (1998) 'Media Priming Effects: Accessibility, Association, and Activation', *International Journal of Public Opinion Research* 1: 51–74.
- Domke, D., D. V. Shah and D. B. Wackman (2000) 'Rights and Morals, Issues, and Candidate Integrity: Insights into the Role of the News Media', *Political Psychology* 21: 641–65.
- Emmerich, H. J. and B. P. Ackerman (1979) 'The Effect of Orienting Activity on Memory for Pictures and Words', *Journal of Experimental Child Psychology* 28: 499–515.

- Epstein, E. J. (1973) *News from Nowhere: Television and the News*. New York: Random House.
- Fiske, S. T. and P. W. Linville (1980) 'What Does the Concept Schema Buy Us?', *Personality and Social Psychology Bulletin* 6: 543–57.
- Fiske, S. T. and S. L. Neuberg (1990) 'A Continuum of Impression Formation, from Category-Based to Individuating Processes: Influences of Information and Motivation on Attention and Interpretation', in M. P. Zanna (ed.) *Advances in Experimental Psychology* 23, pp. 1–74. New York: Academic Press.
- Fiske, S. T. and S. Taylor (1991) *Social Cognition*, 2nd edn. New York: McGraw-Hill.
- Garcia, M. and P. Stark (1991) *Eyes on the News*. St Petersburg, FL: Poynter Institute for Media Studies.
- Gehring, R. E., M. P. Toglias and G. A. Kimble (1976) 'Recognition Memory for Words and Pictures at Short and Long Term Retention Intervals', *Memory & Cognition* 4: 256–60.
- Gitlin, Todd (1980) *The Whole World Is Watching: Mass Media in the Making and Unmaking of the New Left*. Berkeley: University of California Press.
- Goidel, R. K., T. G. Shields and M. Peffley (1997) 'Priming Theory and RAS Models: Toward an Integrated Perspective of Media Influence', *American Politics Quarterly* 25: 287–318.
- Goldberg, V. (1993) *The Power of Photography: How Photographs Changed Our Lives*. New York: Abbeville.
- Gombrich, E. H. (1989[1960]) *Art and Illusion, A Study in the Psychology of Pictorial Representation*. New York: Pantheon.
- Gould, S. J. (1994) 'The Evolution of Life on Earth', *Scientific American* 271(4), October: 85–91.
- Graber, D. A. (1988) *Processing the News: How People Tame the Information Tide*, 2nd edn. New York: Longman.
- Graber, D. (1996) 'Say It With Pictures', *Annals of the American Academy of Political and Social Science* 546: 85–96.
- Griffin, M. and J. Lee (1995) 'Picturing the Gulf War: Constructing an Image of War in Time, Newsweek, and U.S. News & World Report', *Journalism & Mass Communication Quarterly* 72(4): 813–25.
- Gustainis, J. and D. F. Hahn (1988) 'While the Whole World Watched: Rhetorical Failures of Anti-War Protest', *Communication Quarterly* 36: 203–16.
- Hastie, R. (1981) 'Schematic Principles in Human Memory', in E. T. Higgins, C. P. Herman and M. P. Zanna (eds) *Social Cognition: The Ontario Symposium*, Vol. 1, pp. 39–88. Hillsdale, NJ: Erlbaum.
- Helmsley, G. D. and H. H. C. Marmurek (1982) 'Person Memory: The Processing of Consistent and Inconsistent Person Information', *Personality and Social Psychology Bulletin* 8: 433–8.
- Herring, G. C. (1986) *America's Longest War: The United States and Vietnam, 1950–1975*. Philadelphia, PA: Temple University Press.
- Higgins, E. T. and J. A. Bargh (1987) 'Social Cognition and Social Perception', *Annual Review of Psychology* 38: 369–425.
- Higgins, E. T. and G. King (1981) 'Accessibility of Social Constructs: Information-Processing Consequences of Individual and Contextual Variability', in N. Cantor and J. Kihlstrom (eds) *Personality, Cognition, and Social Interaction*, pp. 69–121. Hillsdale, NJ: Erlbaum.

- Iyengar, S. and D. R. Kinder (1987) *News that Matters*. Chicago: University of Chicago Press.
- Iyengar, S., M. D. Peters and D. R. Kinder (1982) 'Experimental Demonstrations of the Not-So-Minimal Political Consequences of Mass Media', *American Political Science Review* 76: 848–58.
- Jenkins, J. R., D. C. Neal and S. L. Deno (1967) 'Differential Memory for Picture and Word Stimuli', *Journal of Educational Psychology* 58: 303–7.
- Johnston, R., A. Blais, H. E. Brady and J. Crête (1992) *Letting the People Decide: Dynamics of a Canadian Election*. Stanford, CA: Stanford University Press.
- Judd, C. M. and J. A. Krosnick (1989) 'The Structural Bases of Consistency among Political Attitudes: Effects of Political Expertise and Attitude Importance', in A. R. Pratkanis, S. J. Breckler and A. G. Greenwald (eds) *Attitude Structure and Function*, pp. 99–128. Hillsdale, NJ: Erlbaum.
- Just, M. R., A. N. Crigler and W. R. Neuman (1996) 'Cognitive and Affective Dimensions of Political Conceptualization', in A. N. Crigler (ed.) *The Psychology of Political Communication*, pp. 133–48). Ann Arbor: University of Michigan Press.
- Kaplan, S., R. Kaplan and J. R. Sampson (1968) 'Encoding and Arousal Factors in Free Recall of Verbal and Visual Material', *Psychonomic Science* 12: 73–4.
- Kenney, K. (1993) 'Influences of Politics and Economics upon Photographic Content in Chinese Newspapers', *Asian Journal of Communication* 3(2): 54–74.
- Kernell, Samuel (1978) 'Explaining Presidential Popularity', *American Political Science Review* 72: 506–22.
- Koch, T. (1990) *The News as Myth: Fact and Context in Journalism*. New York: Greenwood Press.
- Krosnick, J. A. and L. Brannon (1993) 'The Media and the Foundations of Presidential Support: George Bush and the Persian Gulf Conflict', *Journal of Social Issues* 49: 167–82.
- Krosnick, J. A. and D. R. Kinder (1990) 'Altering the Foundations of Support for the President through Priming', *American Political Science Review* 84: 497–512.
- Kuklinksi, J. H. and N. L. Hurley (1994) 'On Hearing and Interpreting Political Messages: A Cautionary Tale of Citizen Cue-Taking', *Journal of Politics* 56: 729–51.
- Lau, R. (1989) 'Construct Accessibility and Electoral Choice', *Political Behavior* 11: 5–32.
- Lavine, H., J. L. Sullivan, E. Borgida and C. J. Thomsen (1996) 'The Relationship of National and Personal Issue Salience to Attitude Accessibility on Foreign and Domestic Policy Issues', *Political Psychology* 17: 293–316.
- Lederman, J. (1992) *Battle Lines: The American Media and the Intifada*. New York: Henry Holt.
- Lodge, M. and P. Stroh (1993) 'Inside the Mental Voting Booth: An Impression-Driven Process Model of Candidate Evaluation', in S. Iyengar and W. McGuire (eds) *Explorations in Political Psychology*, pp. 225–63. London: Duke University Press.
- Lucaites, J. L. (1997) 'Visualizing "The People": Individualism vs. Collectivism in "Let Us Now Praise Famous Men"', *Quarterly Journal of Speech* 83(3): 269–88.
- Marcus, G. E. and M. MacKuen (1993) 'Anxiety, Enthusiasm, and the Vote: The Emotional Underpinnings of Learning and Involvement during Presidential Campaigns', *American Political Science Review* 87: 672–85.

- McLeod, D. M. (1995) 'Communicating Deviance: The Effects of Television News Coverage of Social Protest', *Journal of Broadcasting and Electronic Media* 39: 4–19.
- McLeod, D. M. and B. H. Detenber (1999) 'Framing Effects of Television News Coverage of Social Protest', *Journal of Communication* 49(3): 3–23.
- Mendelsohn, M. (1996) 'The Media and Interpersonal Communications: The Priming of Issues, Leaders, and Party Identification', *Journal of Politics* 58: 112–25.
- Mondak, J. (1993) 'Source Cues and Policy Approval: The Cognitive Dynamics of Public Support for the Reagan Agenda', *American Journal of Political Science* 37: 186–212.
- Monk, L. (1989) *Photographs that Changed the World: The Camera as Witness, the Photograph as Evidence*. New York: Doubleday.
- Morrow, L. (1993) 'In Feeding Somalia and Backing Yeltsin, America Discovers the Limits of Idealism', *Time* 142, 18 October: 36.
- Mueller, J. E. (1973) *War, Presidents, and Public Opinion*. New York: Wiley.
- Neuman, W. R., M. R. Just and A. N. Crigler (1992) *Common Knowledge: News and the Construction of Political Meaning*. Chicago: University of Chicago Press.
- News Photographer* (1995) 'Photographer Meets Subject: Poignant Boston Moment', 50(5), May: 16.
- Newsweek* (1997) 'Visualizing the News', 130, 14 April: 20.
- Paivio, A. (1976) 'Imagery in Recall and Recognition', in J. Brown (ed.) *Recall and Recognition*, pp. 103–29. New York: Wiley.
- Pan, Z. and G. M. Kosicki (1997) 'Priming and Media Impact on the Evaluation of the President's Performance', *Communication Research* 24: 3–30.
- Park, D. C., J. T. Puglisis and M. Sovacool (1983) 'Memory for Pictures, Words and Spatial Location in Older Adults: Evidence for Pictorial Superiority', *Journal of Gerontology* 38: 582–8.
- Perlmutter, D. D. (1998) *Photojournalism and Foreign Policy: Icons of Outrage in International Crises*. Westport, CT: Greenwood.
- Perlmutter, D. D. (1999) *Visions of War: Picturing Warfare from the Stone Age to the Cyberage*. New York: St Martin's.
- Plato (1987) *Republic*, Part X, 2nd edn, trans. D. Lee. London: Penguin.
- Price, V., D. Tewksbury and E. Powers (1997) 'Switching Trains of Thought: The Impact of News Frames on Readers' Cognitive Responses', *Communication Research* 24: 481–506.
- Robinson, J. P. (1970) 'Public Reaction to Political Protest: Chicago 1968', *Public Opinion Quarterly* 34: 1–9.
- Rosenblum, B. (1978) 'Style as Social Process', *American Sociological Review* 43: 422–38.
- Schleuder, J., M. McCombs and W. Wanta (1991) 'Inside the Agenda-Setting Process: How Political Advertising and TV News Prime Viewers to Think about Issues and Candidates', in F. Biocca (ed.) *Television and Political Advertising*, Vol. 1, pp. 265–309. Hillsdale, NJ: Erlbaum.
- Schwartz, D. (1991) 'To Tell the Truth: Codes of Objectivity in Photojournalism', *Communication* 13: 95–109.
- Seligman, M. E. P. (1991) *Learned Optimism*. New York: Knopf.
- Shah, D. V., D. Domke and D. Wackman (1996) '"To Thine Own Self Be True": Values, Framing, and Voter Decision-Making Strategies', *Communication Research* 23: 509–60.

- Shah, D. V., M. D. Watts, D. Domke, M. Fibison, and D. P. Fan (1999) 'News Coverage, Economic Cues, and the Public's Presidential Preferences: 1984–1996', *Journal of Politics* 61: 914–43.
- Shaw, D. (1992) 'News Often Has To Be Seen Before It Is Heard', *Los Angeles Times*, 26 October: A16.
- Shoemaker, P. (1984) 'Media Treatment of Deviant Political Groups', *Journalism Quarterly* 61: 66–75.
- Small, Melvin (1994) *Covering Dissent: The Media and the Anti-Vietnam War Movement*. New Brunswick, NJ: Rutgers University Press.
- Srull, T. and R. Wyer (1989) 'Person Memory and Judgment', *Psychological Review* 96: 58–83.
- Taylor, S. E. and J. Crocker (1981) 'Schematic Bases of Social Information Processing', in E. T. Higgins, C. P. Herman and M. P. Zanna (eds) *Social Cognition: The Ontario Symposium*, Vol. 1, pp. 89–134. Hillsdale, NJ: Erlbaum.
- Tourangeau, R. and K. Rasinski (1988) 'Cognitive Processes Underlying Context Effects in Attitude Measurement', *Psychological Bulletin* 103: 299–314.
- Tuchman, G. (1978) *Making News: A Study in the Construction of Reality*. New York: Free Press.
- Uslaner, E. M. (1998) 'Social Capital, Television, and the "Mean World": Trust, Optimism, and Civic Participation', *Political Psychology* 19: 441–67.
- Valentino, N. A. (1999) 'Crime News and the Priming of Racial Attitudes during Evaluations of the President', *Public Opinion Quarterly* 63: 293–320.
- Watts, M. D., D. Domke, D. V. Shah and D. P. Fan (1999) 'Elite Cues and Media Bias in Presidential Campaigns: Explaining Public Perceptions of a Liberal Press', *Communication Research* 26: 144–75.
- White, J. D. and D. E. Carlston (1983) 'Consequences of Schemata for Attention, Impressions, and Recalls in Complex Social Interactions', *Journal of Personality and Social Psychology* 45: 538–49.
- Wittebols, J. H. (1996) 'News from the Noninstitutional World: U.S. and Canadian Television News Coverage of Social Protest', *Political Communication* 13: 345–61.
- Woo, J. (1994) 'Journalism Objectivity in News Magazine Photography', *Visual Communication Quarterly* 1: 9–11.
- Wyer, R., and T. Srull (1989) *Memory and Cognition in its Social Context*. Hillsdale, NJ: Erlbaum.
- Zaller, J. (1992) *The Nature and Origins of Mass Opinion*. Cambridge: Cambridge University Press.
- Zaller, J., and S. Feldman (1992) 'A Simple Theory of the Survey Response: Answering Questions Versus Revealing Preferences', *American Journal of Political Science* 36: 579–616.

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