

The Influence of Cognitive Schemas and Cultural Framing on the Perception of War Photographs in Print and Electronic Media from 1990 to the Present

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Abstract: - This paper examines the role of cognitive schemas and cultural framing in the reception of war photographs. Following a theoretical review of the literature on cognitive bias, framing, and the cultural gaze, the paper presents the results of a questionnaire completed by 30 participants, which recorded individual differences in vigilance toward threat and intercultural sensitivity, as well as emotional and cognitive reactions to five war photographs. The findings show moderate-to-high emotional responses to the images, along with correlations between the tendency toward threat vigilance, the reported influence of cultural background, and the interpretation of images through the lens of pre-existing beliefs — findings consistent with the hypotheses of cognitive bias and cultural framing.

Key-Words: - cognitive schemas, cultural framing, war photography, cognitive bias, framing

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1. Introduction

Perception is an interpretive process through which information from the environment is organized into objects and events, and this process is shaped by context: an appropriate context facilitates perception, an inappropriate one hinders it, and prior images and surrounding stimuli continue to shape how new images are read (Atkinson et al., 2003; Bransford, 1979). The perception of any object, whether moving or static, such as a photograph on a front page, is therefore never purely objective.

Since the 1990s, the spread of digital media, 24-hour news networks, and later social media has transformed how war images are produced, circulated, and interpreted, extending their reach far beyond newspapers and magazines (Schill, 2012).

Smartphone's have further allowed ordinary citizens to record and share war events in real time, creating a new form of citizen photography (Bock, 2017). War photographs function simultaneously as historical records and as cultural and political tools that shape public perception and the moral evaluation of conflict; their reception, however, is never neutral, but is shaped by cognitive, cultural, and emotional processes that influence how viewers interpret what they see.

Several forms of bias condition this reception. Selection bias means that newspapers favor dramatic or emotionally striking images over representative ones while captioned war photographs have been shown to intensify emotional responses such as

sadness, fear, and anger compared to text alone and to reduce public support for military action — a form of affective bias through which images shape attitudes rather than simply conveying information (Zelizer, 2010).

Cognitive biases also shape how war images are read. In-group/out-group bias and confirmation bias mean that readers' pre-existing ideological positions influence how they evaluate war images, so that the selection and presentation of photographs can itself reinforce what audiences already believe (Atkinson et al., 2003). Specific visual motifs, such as the depiction of the dead with covered faces, have also been shown to activate distinct emotional responses — empathy, vicarious trauma, or witnessing — indicating that bias operates not only in what is selected but in how an image is visually coded (Müller & Christ, 2023).

Framing further shapes the narrative power of war images: Western and non-Western media tend to frame conflicts according to different priorities, with photography often reinforcing Western dominance and depicting the "Other" through an Orientalist lens (Hall, 1997) — a pattern that is cognitive as much as cultural, contributing to social stereotypes and political opinion.

Propaganda has historically been one of the most deliberate uses of war photography, employed by states and militaries to shape morale, dehumanize the enemy, and justify military action (Taylor, 2003). Atrocity images, staged scenes, and selectively released photographs have long served to mobilize public support or to discredit an adversary, and contemporary conflicts continue this practice through embedded journalism, state-controlled image releases, and coordinated social media campaigns. As Sontag (2003) argues, the display and suppression of images of suffering is itself a political act, since decisions about which photographs the public is allowed to see, and how they are captioned, actively construct the meaning a conflict is given. Propaganda therefore does not simply distort an otherwise neutral image; it operates through the same selective and framing mechanisms already described, making it difficult for viewers to distinguish documentary intent from strategic persuasion.

The concept of cultural framing captures how photographers' choices of subject, angle, and composition reflect values, ideologies, and power relations rather than neutral facts, while the public's reading of an image depends on the cultural filters through which it is decoded. Some war photographs become iconic, reproduced across history books, museums, and media until they come to stand for an

entire conflict in collective memory (Zelizer, 1998; Hariman & Lucaites, 2007).

Alongside these cultural factors, cognitive schemas guide how individuals categorize information and direct attention, but the same schemas can produce systematic bias: viewers tend to focus on elements of an image that confirm what they already believe about a conflict and to discount elements that challenge it. Because war images are highly emotionally and symbolically charged, these effects are especially pronounced, and cultural context further shapes what is considered ethically permissible to show — for instance, whether images of dead soldiers or civilians are considered acceptable to publish (Sontag, 2003).

News organizations compound these effects by selecting a small subset of available images, guided by journalistic, commercial, or political priorities, and by pairing images with captions and headlines that function as interpretive frames. In today's digital environment, where images circulate rapidly and are often stripped of their original context, this selective process can reinforce misinterpretation, stereotyping, and misinformation.

War photography is also an explicitly political tool, used to legitimize military action, reinforce national identity, or expose war's atrocities. Colonial photographers, for example, constructed their subjects through an exotic, often racist lens that reinforced the depiction of the colonized as "Other" (Pinney, 2003), a dynamic that recent work shows persists even within virtual worlds and video games (Mulvey, 1975). This way of seeing is closely tied to the concept of the gaze, through which the male and colonial gaze alike construct the photographic subject as passive and available for the viewer's consumption (Mulvey, 1975), extending even to how the natural environment itself is framed through anthropocentric and Eurocentric filters (Hall, 1997).

In the age of social media and algorithmic platforms, cultural framing is reinforced by technological systems: platforms such as Instagram determine which images are shown and which are ignored, an "algorithmic turn" in visual culture (Uricchio, 2011), while even digital games can embed culturally specific values and codes into how aesthetic experiences are framed (Uricchio, 2011). Framing, in other words, is no longer performed only by the photographer, but jointly by the audience, the algorithm, and the platform.

Overall, the literature suggests that the perception of war photographs results from a complex interaction between visual content, cultural framing, cognitive processing, and propaganda. Despite substantial research in visual communication and

cognitive psychology, there remains limited empirical investigation of how cognitive schemas specifically shape the public reception of war photography — a gap this study aims to address.

2. Theoretical Background

Cognitive schemas are structures that are difficult to change, and people tend to notice things that fit their cognitive schemas and to distort things that conflict with their existing schemas. Thus, although cognitive schemas are necessary for our survival, since they help us perceive our constantly changing environment, on the other hand they often favor the creation and maintenance of stereotypical and often rigid perceptions. Whether it concerns a stereotypical perception or the way we view our environment and others, we rarely change our beliefs and usually filter information in such a way that it fits what we already believe (Fiske & Taylor, 2017). Attention to visual material is strongly influenced by emotional engagement, as viewers focus on elements associated with intense emotions. Photographs that direct attention to emotionally charged elements produce stronger memories and emotional reactions. Selective attention allows the avoidance of cognitive overload by filtering out non-essential elements (Henderson, 2003). Filter Theory explains that attention filters out irrelevant information, allowing only relevant information to be processed (Broadbent, 1958). Several photographers use techniques such as subject placement, perspective lines, and lighting to guide the viewer's attention and create hierarchy within the image (Arnheim, 1974).

Cognitive bias refers to systematic deviations from objective or rational information processing that arise from the way human thought operates. These are mental "shortcuts" or heuristic strategies used by the human brain to quickly process large amounts of information, but which often lead to errors in judgment and decision-making (Tversky & Kahneman, 1974). Cognitive biases affect how individuals perceive, interpret, and remember information, resulting in a tendency to favor data that confirms their pre-existing beliefs while ignoring or downplaying conflicting evidence.

According to cognitive psychology, these biases are an integral part of human cognitive functioning, as they arise from the brain's effort to simplify complex information and make decisions under conditions of uncertainty (Kahneman, 2011). Although these mechanisms often facilitate everyday thinking and rapid information processing, they can also lead to distortions in the perception of reality and to the formation of stereotypical or biased judgments.

In the context of visual communication and image perception, cognitive biases can significantly affect how viewers interpret visual material such as war photographs. Viewers tend to focus on elements of an image that confirm their existing perceptions about a conflict, while they may ignore elements that challenge their expectations or ideological positions (Nickerson, 1998). As a result, the same image can be interpreted differently by different viewers, depending on their cognitive schemas, cultural experiences, and political beliefs.

The concept of global visual memory refers to the body of images that are internationally recognized and associated with significant historical events. These images function as reference points for understanding history and influence how people perceive new war photographs (Zelizer, 1998). For example, images from the Vietnam War have shaped specific visual templates that influence the interpretation of later conflicts.

Framing theory originates from the study of social communication and the media. According to Entman (1993), frames are "selective principles" that organize reality, highlighting certain aspects of an event while downplaying others. The media use frames to determine which elements of an event are considered important and how they should be interpreted.

In the case of visual communication, framing takes on particular significance, as images often function as powerful carriers of emotional and symbolic meaning. Visual framing includes the selection of subjects, the composition of the image, the camera angle, the use of lighting, and the relationship of the image to the accompanying text or headline (Coleman, 2010). These factors influence how viewers understand and evaluate the event depicted.

The cultural framing hypothesis in photography argues that photographic images are not simple or neutral representations of reality. Instead, they are constructed, interpreted, and circulated through culturally determined filters. Photography, as a cultural act, operates within a system of visual codes that are shaped by social, historical, and ideological conditions. As Hall (1997) notes, representation is never free of ideology. In other words, every photograph is the result of an ongoing cultural negotiation. Barthes (1981) points out that the act of photographing always involves a choice — what will be included in the frame, from what angle, with what lighting and framing. These choices are not neutral but are connected to the photographer's cultural horizon and social position.

2.1 Research Hypotheses

Building on the literature reviewed above concerning threat vigilance, confirmation bias, cultural framing, and media trust, the following hypotheses were formulated:

H1: Participants with higher trait threat vigilance will show greater overall emotional-cognitive engagement (e.g., sadness, alertness, focus on danger cues) when viewing war photographs.

H2: The extent to which participants report that their cultural background influenced their reading of a photograph will be positively associated with interpreting that image on the basis of pre-existing beliefs about the conflict (confirmation bias).

H3: Higher intercultural sensitivity will be associated with a weaker relationship between threat-focused processing and overall engagement with the war photographs, reflecting a reduced reliance on stereotype-consistent, in-group/out-group processing.

H4: Reactions to the photographs (sadness, trust in the reporting outlet, focus on danger/pain cues) will differ significantly across images, consistent with the selection-bias and affective-bias literature on how specific visual motifs shape audience response.

H5: Trust in the media outlet presenting an image will be positively associated with interpreting that image through the lens of pre-existing beliefs, consistent with a media-framing effect.

3. Methodology

3.1 Participants

A total of 30 individuals took part in the study, of whom 29 provided consent to participate. The age of participants ($n=26$) ranged from 19 to 68 years ($M=34.8$, $SD=14.9$). Regarding gender, 15 participants identified as women, 10 as men, and 1 preferred not to answer.

3.2 Instruments and Procedure

The questionnaire consisted of three parts. The first part recorded demographic information (age, gender) and included a consent statement. The second part used a threat-vigilance scale (9 statements, e.g., "I perceive threats quickly"), together with an adapted intercultural sensitivity scale (27 statements, conceptually based on the scale by Chen & Starosta), with responses on a five-point frequency scale (1=Never to 5=Always). In the third part, participants were sequentially presented with five war photographs and asked to respond to 18 statements for each image, concerning emotional reactions (e.g., sadness, anxiety, emotional

overload), cognitive processing (e.g., focusing on danger cues, interpreting meaning), and the influence of cultural background and pre-existing beliefs on the interpretation of the image. Most of these statements used a three-point intensity scale (1=Not at all, 2=A little, 3=A lot), while three statements per image (sadness, trust in the media outlet, influence of personal experiences) used the five-point frequency scale.

To compare across images and variables, responses to the three-point statements were converted to a common 0-1 scale (normalization) so as to be comparable with the five-point statements, and a composite "emotional-cognitive engagement" index was computed for each image as the mean of the 18 normalized statements.

4. Results

4.1 Scale Reliability

The threat-vigilance scale showed satisfactory internal consistency (Cronbach's $\alpha=0.79$, $n=22$), with a mean of $M=3.46$ ($SD=0.62$) on a 1-5 scale. The adapted intercultural sensitivity scale showed lower reliability ($\alpha=0.46$, $n=19$, $M=2.92$, $SD=0.36$), likely due to reverse-worded items that were not reverse-scored prior to computation, a point addressed as a limitation in the Discussion.

4.2 Reactions to the War Photographs

Table I presents the composite emotional-cognitive engagement index for each photograph, together with sub-scores for sadness, trust in the media outlet, and focus on danger/pain cues.

Table 1. Descriptive Statistics by Photograph

Phot o	Engag e- ment Index	Sadne ss (1- 5)	Tru st (1- 5)	Dang er Focus (1-3)	Cultur al Infl. (1-3)
1	0.69 (0.23)	3.83	3.17	2.5	2.67
2	0.62 (0.27)	3.67	3.5	2.17	2.83
3	0.76 (0.16)	4.5	3.33	2.67	2.83
4	0.63 (0.15)	3.6	3.4	2.4	2.6
5	0.57 (0.19)	3.5	2.83	2.56	2.61

Photograph 3 elicited the highest composite emotional-cognitive engagement index and the

highest mean sadness score, whereas photograph 5 showed the lowest overall engagement. Across all images, participants reported moderate-to-high sadness (M roughly 3.5-4.5) and moderate trust in the media outlet presenting the image (M roughly 2.8-3.5), while focus on danger or human-suffering cues remained at moderate levels (M roughly 2.2-2.7 on a 1-3 scale). A Friedman test on the composite engagement index across the five photographs was significant, $\chi^2(4) = 12.21$, $p = .016$; however, this test was based on only $n = 4$ respondents with fully complete data across all five images, so it should be treated as exploratory rather than conclusive evidence for H4.

4.3 Correlations

Table II presents Pearson correlations, 95% confidence intervals (Fisher z), and two-tailed p -values ($\alpha = .05$) between individual differences (threat vigilance, intercultural sensitivity) and selected reaction indices to the photographs (averaged across the 5 images, pairwise complete observations).

Table 2. Correlations Among Key Variables (95% CI, $p < .05$)

V1	V2	<i>r</i>	95% CI	<i>p</i>	<i>n</i>
TV	ICS	0.45	[0.03, 0.74]	0.040*	21
TV	ENG	0.42	[-0.02, 0.73]	0.062	20
TV	CULT	0.40	[-0.05, 0.72]	0.078	20
CULT	PRIOR	0.60	[0.22, 0.82]	0.005*	20
CULT	MEAN	0.52	[0.10, 0.78]	0.018*	20
ICS	ENG	0.13	[-0.33, 0.54]	0.590	20
TR	PRIOR	0.29	[-0.17, 0.65]	0.210	20

* $p < .05$ (two-tailed). TV = threat vigilance; ICS = intercultural sensitivity; ENG = composite emotional-cognitive engagement index; CULT = reported influence of cultural background on interpretation; PRIOR = interpretation via pre-existing beliefs about the conflict; MEAN = focus on interpreting the meaning of the image; TR = trust in the media outlet presenting the image.

Threat vigilance correlated significantly and positively with intercultural sensitivity, $r(19) = .45$, 95% CI [.03, .74], $p = .040$. Its correlations with the composite engagement index, $r(18) = .42$, 95% CI [-0.02, .73], $p = .062$, and with the reported influence of cultural background, $r(18) = .40$, 95% CI [-0.05, .72], $p = .078$, were positive but did not reach the .05 significance threshold, so H1 was not statistically supported, although the direction and size of the effect are consistent with the hypothesis and may reflect the study's limited power ($n = 20-22$). The strongest and clearest effect was the correlation between the influence of cultural background and

interpreting the image based on pre-existing beliefs about the conflict, $r(18) = .60$, 95% CI [.22, .82], $p = .005$, which was significant and supports H2; a related, significant correlation was also found between cultural background and focusing on the meaning of the image, $r(18) = .52$, 95% CI [.10, .78], $p = .018$. By contrast, intercultural sensitivity was not significantly related to the overall engagement index, $r(18) = .13$, 95% CI [-0.33, .54], $p = .590$, so H3 was not supported. Trust in the media outlet was not significantly associated with interpretation via prior beliefs, $r(18) = .29$, 95% CI [-0.17, .65], $p = .210$, so H5 was likewise not supported at the 5% level.

5. Discussion and Conclusions

At the 5% significance level, only H2 was clearly supported by the data ($p = .005$). H1 showed a positive correlation of similar magnitude to H2 but did not reach significance ($p = .062$), likely reflecting the small sample size rather than the absence of a true effect. H4 received only tentative, exploratory support from a repeated-measures comparison based on just 4 fully complete cases, and should not be treated as confirmatory. H3 and H5 were not supported ($p = .590$ and $p = .210$, respectively). The results are broadly consistent with the theoretical view that the reception of war photographs is not neutral but is shaped by individual cognitive tendencies and cultural filters, most clearly through the strong link between cultural background and interpretation based on pre-existing beliefs (H2), which confirms the role of confirmation bias and cultural framing (Entman, 1993; Hall, 1997) in the reading of war images. The positive, near-significant association between threat vigilance and emotional-cognitive engagement is consistent with the literature on emotional attention to threatening stimuli (Henderson, 2003; Broadbent, 1958), though it warrants replication in a larger sample before it can be considered a reliable effect. The lack of support for H3 suggests that, in this small sample, intercultural sensitivity did not translate into weaker threat-focused processing of the images, which may reflect the limited reliability of the sensitivity scale itself rather than the absence of a genuine effect.

The study has notable limitations. The sample was small ($N=30$, with partial completion on several variables), which limits generalizability and the statistical power of the analyses; several correlations approached but did not reach significance, and a larger sample would be needed to determine whether these are true effects. The seven correlations reported in Table II were not corrected for multiple comparisons, so the two significant results involving

cultural background (H2) should be interpreted with some caution pending replication. The low reliability of the intercultural sensitivity scale suggests the need to revise or reverse-score the negatively worded items in future use. Furthermore, the mixing of three-point and five-point scales within the same set of statements per image limited the ability to compare responses directly without normalization. Future research with a larger and more representative sample, unified measurement scales, and an experimental design could further our understanding of how cognitive schemas and cultural framing shape the reception of war photography. Beyond examining emotional responses to war photographs, this study contributes to the literature by integrating cognitive psychology and visual communication within a single empirical framework. Rather than examining cognitive bias or media framing independently, the study investigates how both mechanisms jointly influence the interpretation of contemporary war photography.

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