Exploring Empathy and a Range of Emotions Towards Protest Photographs

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Abstract

Images are a powerful medium known to induce empathy and emotional response in people. In political protests, it has the power for a people-initiated policy change and signifies the deep symbolism of a political system. In this study, we aim to quantify the range of emotional connection a person experiences for photographs of a farmers' protest.The protest was the headlines in all media at the time this experiment was conducted and had polarized public opinion. Each photograph is identified to have a set of physical and semantic features. The three selected features were presence of police, gender and close-up (vs.long-shot) in the frame. The intensity on a range of emotions (fear, disgust, anger, sadness, optimism, pessimism, surprise, shock, happiness, and respect) experienced by the viewer for each feature was collected. By statistical and dimensionality analyses, we isolate and identify influencing factors in an image. We found that the presence of police in aggressive actions and close-up shots had the highest variation in the emotional responses of participants. Interestingly, the gender of the protesters did not show statistically significant effects. The findings from the exploratory investigation highlights the powerful role photographic features have on emotional responses of people, an understudied but critical factor in a world immersed in social media.

Keywords: Cognitive Neuroscience; Emotion Perception; Empathy; Indian farmers' protest

Introduction

Images are a persuasive way to elicit an emotional response more intensely than other forms of media. Cognitive processing of images has been shown to be faster than text (Barry, 1997), shows higher recall and is subject to higher attention (Keib et al., 2018; Cárcamo Ulloa, Marcos Mora, Cladellas Pros, & Castelló Tarrida, 2015). The highest volume and popular (Li & Xie, 2019) of shared online content is visual media, consumed by people through social media, photo-sharing sites, and video-streaming platforms. In recent years, this information sharing method has played a critical role in the way we interact with the world around us, perceive people, and react to events - political and social. In the digital era, protest movements around the world use a range of strategies to influence public perception and gain a wider reach, one such being strategic photographs. Similarly, the targeted agency (by the protesters) also manages public perception to defend its actions or policies with counter images thus forming powerful contrasting narratives. The pre-digital media era was marked by iconic images like the Tiananmen Square tank man and the 1968 Olympics Black Power salute photograph; both representing the bravery of the protesters and symbolizing the movement for larger citizen representation. Such imagery becomes extremely impactful for an audience that is not necessarily associated with the protest itself. That is, images can be used to sway public and government responses.

A major concern in the era of deepfakes (photographs and videos) is its influence on manipulating beliefs (Nash, 2018) by presenting alternate narratives, and hence it is important to evaluate the emotional responses as a function of perceivable features. There is little in-depth research in this area especially in the Indian political and socio-cultural context. Secondly, an important attribute of one's response to political or social protest is their ability to empathize, a detail that has not been factored into studies.

In this study, we attempt to address this gap with photographs of a protest, captured by popular news (mainstream and digital) media to ensure ecological validity. We limit the context of our study to the 2020-2021 Indian Farmers' protests as it was the most recent and contextual to the predominantly Indian participant pool. We categorize the features in each photograph with the potential to evoke an emotional response. The identification of features is based on the socio-cultural understanding of India especially of farmers (Mehta & Kumar, 2017), the participation of women and children, older citizens, the different perceptions of police (Madan & Nalla, 2015), the political ramifications of a farmers' protest and importantly, the public and news media's responses (Neogi, Garg, Mishra, & Dwivedi, 2021; Fadaee, 2021) which were highly polarised.

Farmers constitute 90-150 million of the total population of India with most of them being tenant farmers and small land-holders and usually have incomes below that of the urban population. The general public share an emotional bonding with farmers as providers of food. The politics of agriculture notwithstanding, a protest by this community is usually perceived to be justified due to compound pressures – debts, famine, market price, government policies etc. Although India witnesses farmers' agitation annually, this particular protest sustained for a longer period of time (2020-2021), was held during a pandemic, was politicised, resulted in violence and hence evoked strong emotions in

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(a) Crowd (b) Groups (c) Single person (d) Night (e) Close-up (f) Banners (g) Provocative

(h) Police (i) Men (j) Women (k) Children (l) Violent (m) Disruptive (n) Old

Figure 1: Data annotation features. Each image depicts a feature used in data annotation for identifying and filtering images.

people. This study evolves from this background, and the discussions that occupied the media space. The question we asked ourselves was – *What is the role of farmers' protest photographs circulated online, on the emotional responses of people and how does it relate to empathy traits?*

Prior works employ datasets such as OASIS (B. Kurdi, 2017) and IAPS (P.J. Lang, 2008) to elicit a specific range of emotional responses. Our setting rather considers a broad range of emotions studied using photographs with different features. To understand the effect of a feature (e.g. presence of *police*), we compare emotional responses between images with and without that feature. Our contributions in this work include the following:

1. Measuring a range of emotions to image features and and correlation to trait-level empathy.

2. An annotated image dataset focused on the farmers' protest in India. This can be used for further research on the topic. The dataset can be found here: https://bit.ly/3shqalV.

3. A detailed analysis of features that have similar emotional response magnitudes.

Related Work

Prior work on the role of images in framing protests and social movements has shown that it is a tool for creating awareness and mobilisation by eliciting strong emotions (Bas & Grabe, 2016; Bucy, 2020; Arpan et al., 2006). The studies also attempted to understand the role of bottom-up visual information and the top-down imagery process. One such study has established that images trigger stronger emotional reactions than written or spoken information (Grabe & Bucy, 2009). Powell (Powell, Boomgaarden, De Swert, & de Vreese, 2015) performed an experiment studying individual-level framing effects and found that images shape people's opinions and behavioural intentions more than similar textual content. They also discuss the contemporary formats being applied by news organisations to present a powerful and eye-catching story via images. (Marcus, Neuman, & MacKuen, 2002) showed that people first react to new information with an emotional response (first-order thinking), which is followed by the act of perspective-taking (second-order), both processes underlying empathy. However, the immediate reactions to images could vary in both intensity and type of emotion experienced. Examining brain signals from EEG method (Reinka & Leach, 2018), difference in appraisal of photographs showing police force against Black/White targets was observed.

The ability to elicit intense emotional responses through visual media is particularly important due to its influence in shaping political choices, perceptions and activism. For example, (Todorov, Mandisodza, Goren, & Hall, 2005) asked people to evaluate pairs of candidates competing for United States Congress seats based on their visual appearance. Candidates who were rated competent just from their photos often matched the candidate who actually won the electoral seat. More recently, (Casas & Williams, 2019; Geise, Panke, & Heck, 2020) report that images evoking enthusiasm increased attention and diffusion, as did images evoking fear.

(Keib et al., 2018) studied the role of images in driving news consumption. They observed that participants spent twice as long on social media posts containing positive images compared to those with negative or only text, and higher 'click' (also reported by (Ryan, 2011)) and sharing (Lilleker & Koc-Michalska, 2018). Another relevant study by (Zinko, Stolk, Furner, & Almond, 2020) analyzed the effect of images on information quality and load in online reviews and found that when an improper (too much or too little) amount of textual information is provided, adding images increases trust and purchase intention.

The effectiveness of images in aiding awareness campaigns (Sontag, 2018) showed the positive impact of imagery on encouraging young adults to seek mental help. There has also been work on studying the impact of context in images taken during traumatic events. (Iyer, Webster, Hornsey, & Vanman, 2014) found that British citizens who viewed photographs of the 2005 London bombings had increased feelings of sympathy when shown images of victims and had increased feelings of fear and anger when shown images of terrorists. Hence, photojournalism documents events that can have a wide social and political impact as the narrative is from the perspective of the person behind the lens, especially when covering protests or social movements (Owens & Palmer, 2003). A frame can be of an event not intended by the activist, while there are also instances of intentional confrontation with security forces to generate photo narratives for conveying a message (Juris,

2008; Jasper & Paulsen, 1995).

Hypothesis

Main hypothesis: In photographs of a political protest, specific visual features such as capture style (eg. closeup/far-away shots) and content (eg. presence of police, age and gender of the protesters) evoke higher emotional responses. A secondary hypothesis is that individuals with higher empathy quotient or trait have higher emotional responses. Towards validating the above hypotheses, we compare the strength of self-reported emotions to photographs with and without the features of interest (gender, police, and closeup angles).

Dataset Collection and Annotation

The image data used in the experimentation procedure was filtered from a pool of 925 images over multiple stages. These images were scraped at random from *Bing Images* using keyword searches linked to farmers' protests in India (keywords provided in the dataset).

The scraped image data was manually cleaned to remove duplicate and irrelevant entries. Images that contained any of the following themes or features were removed from the dataset – children, politicians, flags, banners or other articles that are linked to the *Khalistan protests*, religious themes, watermarked images, news banners and comments. The remaining images were annotated based on semantic features that were identified as relevant by the authors for the experiment. Each feature was annotated using a binary system to indicate the **presence** (1) or the **absence** (0) of that feature. The images, see Figure 1, were annotated for the following list of features – *Crowd*, *Groups*, *Single Person*, *Night*, *Close-Up*, *Banners*, *Provocative*, *Police*, *Men*, *Women*, *Children*, *Violent*, *Agitated/Disruptive*, *Youth*, *Old*.

Post-annotation, we selected 204 representative images from the original image dataset. From this set, 40 images were sampled with no particular selection criteria (as the 204 were filtered) to be validated by research students from the Cognitive Science Lab of our university. The images were annotated on the valence and arousal scales to understand the emotional connect and response to the images. They also identified features in the images that affected their opinion and provided subjective comments on their understanding behind their responses. These annotations were congruent with the research question and affirmed that the features identified were comprehensive.

The experiment design took cognisance of participants' attention limits, and hence the final set was reduced to 6 images (per feature) from the 40 annotated, that is, 3 pairs of complementary images for each of the features in question (close-up/far-away, gender, police). We define a complementary pair of images as two images such that their annotations for 15 features are identical, and only differ for the feature under consideration in the experiment (See Figure 2). Hence, each complementary pair would consist of matching annotations with only a single mismatch for the feature that needs to be studied.

The three features that were used to measure the emotional response in the experimentation stage were **Gender**, **Police** and **Close up**. Gender was an important factor as the agency of women in agriculture has been increasing (Hans & Hegde, 2020). The **Police** force was also an important feature as they were the face of government authorities on the ground and often captured by the media while engaging in provocative acts against the protesters. While the previous two were semantic features, the angle, focus and pan of the captured photo can also have an impact on one's emotional response. For example, perceptions to a close-up shot of single person (or small group of people) can capture emotional expressions vs. long shot of groups (and crowds) that reflect collective anger or resolve. Hence, we decided to keep **Close-up** shots as one of the features to be studied.

Experiment Design and Procedure

To test our hypothesis, the three factors that we aimed to study were (1) the gender of the protesters, (2) the presence of police, and (3) a close-up shot (fewer in a frame but facial expressions are clear) or long shot (a crowd but facial expressions are not distinct). As described in the previous section, we chose three pairs of contrasting images from each category for the experiment.

Experiment Design

The experiment was a single-blind study and responses were to be provided in a fixed time frame. The participant pool predominantly consisted of university students studying in different parts of India. A participant was tested on only one of the three features in question, i.e., gender, police, or close-up. The participants were randomly sampled and randomly assigned to either one of the features. The experiment included a (1) Demographic and background questionnaire, (2) Image task, (3) and the Davis Interpersonal Reactivity Index (IRI) task.

Demographic and Background Questionnaire Each participant was asked to report their age, gender, country, city (location), and native language. The participants were also asked about their familiarity with the current affairs in the Indian news and media.

Image Task In this task, the participants were shown six images (three positive samples with the feature in question present and three negative samples with the feature in question absent) from one amongst the gender, police, and close-up categories. The six images were randomly shuffled for each participant. Each image was shown to the participants for five seconds. The following emotions were asked to be reported – *happiness*, *optimism*, *respect*, *anger*, *disgust*, *fear*, *pessimism*, *surprise*, *sadness*, *shock*.

Measuring Emotional Response to Images The participants rate emotions on a Likert scale rather than

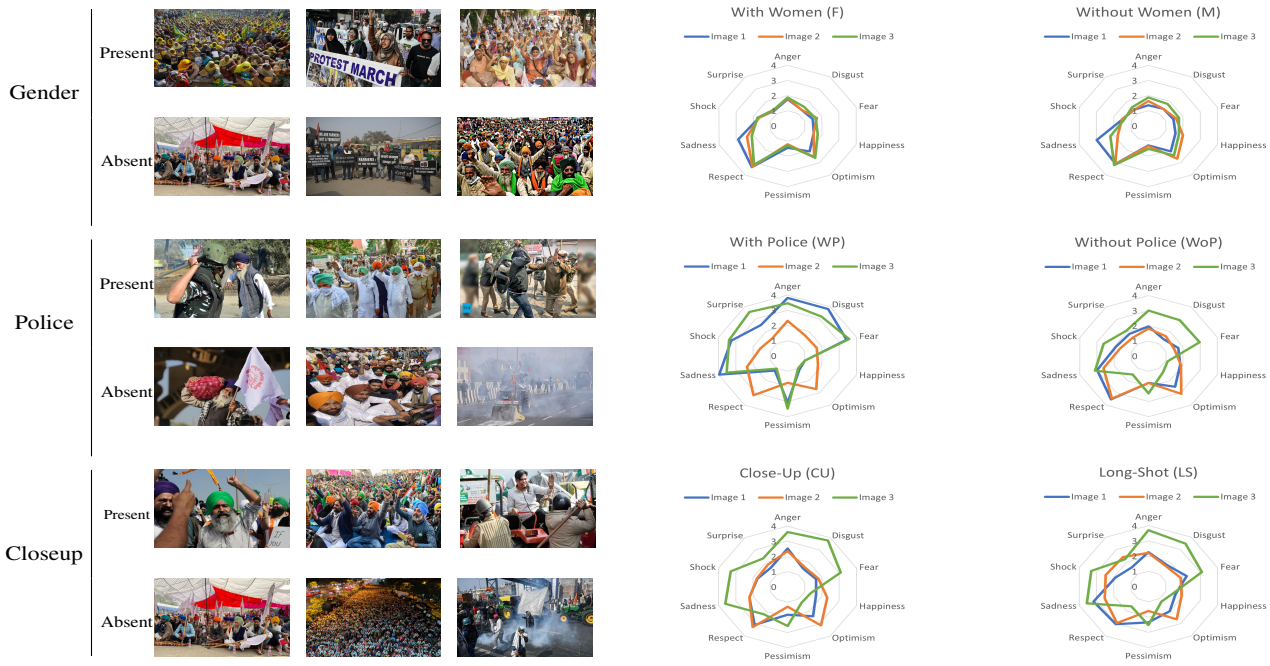

Figure 2: Images used in the **Image Task** of the experiment. Each row presents images with complementary features of a category. The radar plots on the right display average scores of the extent of emotional connect felt by participants.

the Valence-Arousal-Dominance scale. This enables us to measure a range of emotions that a particular feature elicits as opposed to recording a single data-point capturing the dominant emotion only. For our experiment, we chose six primary emotions (Ekman, 1999) and added 4 complex emotions (*respect, optimism, pessimism, shock*) listed by annotators from Cognitive Science Lab with respect to protests.

Davis Interpersonal Reactivity Index (IRI) Task The participants were asked to fill the Interpersonal Reactivity Index (Davis, 1980) to assess multi-dimensional empathy. The IRI questionnaire consisted of 28 questions answered on a 5-point Likert scale ranging from "*Does not describe me well*" to "*Describes me very well*".

Experiment Procedure

The experiment was conducted on the *Labvanced* (Finger, 2017) platform on a web browser. Participants were given URLs to access the experiment. A total of 82 people participated out of which 7 responses had errors in marking and not considered. 75 (52 male, age range: 16-35, average age: 21) experiment responses were considered for the analysis. All participants were of Indian citizenship residing predominantly in different parts of India and majority of them were university students.

Results

We found that each feature evoked varying degrees of emotional responses. The presence of police in the image evoked stronger emotions while the gender feature did not have a statistically significant effect. Close-up shots had stronger responses for positive emotions while long shots evoked negative emotions like fear, disgust, pessimism.

Response to Photographs

The radar plot for average emotional connect for the police category (with/without police in the image), as shown in Figure 2, indicates a stronger response for emotions like anger (3.2 vs. 2.3), fear (2.9 vs. 2.1), disgust (2.9 vs. 2.0), pessimism (2.8 vs. 2), sadness (3.3 vs. 2.9), shock (2.7 vs. 2.1) and surprise (2.5 vs. 1.8). While for positive emotions like happiness (1.3 vs. 1.6), optimism (1.6 vs. 2.3), and respect (1.8 vs. 2.8), the response (average of responses on a 5-point scale) is higher in the absence of the police in the images. Statistical significance for each difference estimated from the Paired T-Tests is presented in Table 1.

Close-up shots, as shown in Figure 2, indicates a slightly stronger response for positive emotions like respect (2.9 vs. 2.5) and optimism (2.3 vs. 2.0). For negative emotions like fear (2.2 vs. 2.4), disgust (2.3 vs. 2.3), and pessimism (1.9 vs. 2.2), the responses (average of responses on a 5-point scale) are higher for long shots where a sea of protesting crowds are often observed. Statistical significance was not observed for this category across all emotion responses.

The gender category, as shown in Figure 2, does not show a significant effect of gender, i.e., the distribution of responses in the presence and absence of the gender feature are similar.

Empathy trait and responses to images

The Davis IRI task included the four sub scales - *Perspective Taking (PT)*, *Fantasy (FS)*, *Empathetic Concern (EC)* and

Table 1: Paired T – Tests (checked for normality) for emotion scores of images with/without police. P<0.001 and df = 25; WoP: without police and WP: with police WP>WoP (t = 4.765)

Anger	Disgust	Fear	Happiness	Optimism	Pessimism	Respect	Shock
WP >WoP (t = 4.74)	WP >WoP (t = 4.861)	WP >WoP (t = 5.161)	WP <WoP (t = 3.674)	WP <WoP (t = 4.951)	WP >WoP (t = 4.573)	WP <WoP (t = 6.682)	WP >WoP (t = 4.765)

Personal Distress (PD). For the correlation analysis the four scales were collapsed and averaged to generate an empathy index for each participant. The empathy trait score and disgust ($\rho = 0.44$, $p = 0.025$), sadness ($\rho = 0.578$, $p = 0.002$) and shock ($\rho = 0.511$, $p = 0.008$) for images with police show positive associations, while respect ($\rho = 0.651$, $p = 0.001$) and optimism ($\rho = 0.5$, $p = 0.009$) also have a positive correlation. Empathy and fear ($\rho = 0.479$, $p = 0.021$) and respect ($\rho = 0.552$, $p = 0.006$) responses for close-up images show positive correlations while for long-shot images, respect ($\rho = 0.609$, $p = 0.002$) was only significant. In the gender category, only empathy and optimism comparison ($\rho = 0.286$, $p = 0.042$) for female protesters show significance.

Factor Analysis

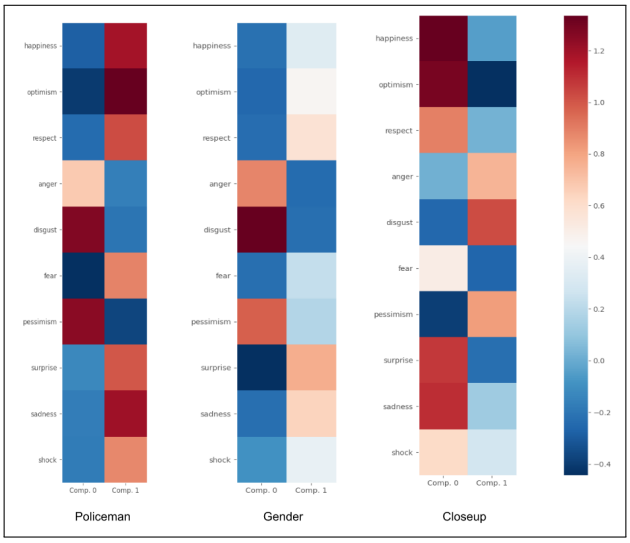

Figure 3: Factor Analysis for the emotions in the police, gender, and closeup features. Note that for the police and closeup features, strong negative emotions like disgust, pessimism, fear can be represented by one hidden component while the remaining emotions can be represented by the second hidden component. For the gender feature, strongly negative emotions can be represented by one hidden component.

The number of observed variables (emotions) can be reduced to a set of underlying hidden variables that influence different groups of emotions similarly. An initial Singular Value Decomposition was carried out to run a Scree test based on the sorted order of eigenvalues. The optimal number of hidden variables was found to be 2 using a Scree plot. Factor analysis was carried out to reduce the 10-dimensional data of each participant to just 2 dimensions.

For the Police feature, strong negative emotions like disgust, pessimism, fear can be represented by one hidden component while the remaining emotions can be represented by the second hidden component. For the Closeup feature, a similar rule applies. For the Gender category, strongly negative emotions can be represented using one hidden component. It is not clear whether maximum variance for the remaining emotions are preserved by the second hidden component. In this case, more hidden components would be required to faithfully reduce the dimensions of the observed variables while maximizing the preserved variance.

Discussion

As a democratic country, protests have a huge political and emotional effect on public response (for example, India's independence movement from British rule was based on non-violent protest marches). The social media era has amplified this emotional effect across millions of people, evoking diverse views and interpretations. To investigate the views of the public during the protest, our study looked at responses when protest images have different elements – women, police and the role of staging – close-up vs. long-shot. The descriptives applied cover raw emotional or affective responses (fear, anger, disgust, and sadness) and an affective-cognitive response (optimism, pessimism, respect, shock, surprise) experienced and evaluated by the self (viewer). The above set of emotions rated on are only a small representation of the range of emotions one experiences, but in this study we explore the above major conditions.

The findings show that photographs containing police evoked complex emotions in the participants. Prospect of injury to a human (protester or police) triggers the human cost equation, which were evident from the photos depicting harm inflicted on the protesters. The findings suggest visuals with police and violence alone is sufficient to evaluate and polarise viewers. The findings validate our hypothesis on presence of police in images. A similar inference was drawn by (Midberry, 2020) who found that participants attributed higher emotional responses to war photographs and those in which the frame showed the human cost-of-war and for police violence (Reinka & Leach, 2018). In particular, there was a significant difference for images with police showing aggression on the protesters, with anger, disgust, and fear being the predominant emotions. This implies that the presence of police alone in a frame is not perceived to be

negative; violence is a critical feature. Images irrespective of the gender of protesters, evoked sadness and respect, the former is likely for the hardships encountered, and the latter for standing up for one's rights. The close-up and long-shot framing did not have significant effects except when the image conveyed violence (attack by police or tear-gassed). Photographs taken of individuals injured (example, the famous photograph of 2-year old Alan Shenu, victim of the Syrian war) or even situated in areas of conflict and natural disasters have shown to evoke acute response from viewers. However, the same effect is not observed in protests, which by definition is a collective action. A point of relevance is the distribution across negative and positive emotion responses, as observed for all image categories, implies that the public considers many factors and are not particularly polarised. In partial support, when analysing tweets covering the farmers protest, (Neogi et al., 2021) found most were neutral, followed by positive sentiments with negative sentiment tweets coming in last. Through factor analysis, we were able to identify image category-specific main and hidden components of the emotional responses, for reliability validation. Although empathy is a complex construct, it is contextual. Emotional response is modulated by perspective-taking of political and cultural dimensions, affiliation with the target population, self-experiences in similar situations, and one's ability to experience empathy. Although we used the Davis IRI trait questionnaire (Davis, 1980) for basic threshold of empathy, we acknowledge its limitations in gauging contextual influence. However, its correlation with emotional responses to image features can predict the role of personal trait. Empathetic participants respond negatively to images with violence, thus supporting the role of personal trait and validating our second hypothesis. The positive correlation of empathy trait with negative/positive response scales for images with police, show that personal characteristics modulate perceptions. For other image categories, significance was observed for respect and empathy traits, implying the application of perspective-taking mechanism.

The role of visual framing found in our study is in adherence to (Arpan et al., 2006) while the role of personal characteristics finds support with (Weikmann & Powell, 2019). The conflicts of feelings within categories, when positive and negative scales show comparable responses requires further studies to isolate empathy and apathy by individuals as a function of ideology. Also, the effect of over-exposure to protests across the country, polarizing media debates and self-identity with a particular religion requires focused studies to isolate the confounds. This study was conducted when the farmers' protest was active in the country, and responses post-protest-closure and media-glare shift will capture long term empathy/apathy to protests. The findings on emotional responses, individual traits and features captured by a camera lens are relevant to journalists to evaluate the implications of their reporting. That is, photographs do play a central role in conveying the legitimacy/illegitimacy of a movement. For example, a visual with police as keepers of social peace can set a positive tone while one which shows excessive use of force sets a negative tone and could change public perception.

It is important to consider the limitations when using naturalistic photos selected from an existing media database. Firstly, we acknowledge that the responses could be influenced by confounding factors in the images which we attempted to control as much as possible given the naturalistic state of our images. The most prevalent image features were accounted for and *noisy* images were eliminated from the dataset. But as an exploratory study a controlled experiment setup would not have provided as rich responses as from a naturalistic one given the nature and scale of the farmers' protest. Secondly, the analyses with empathy should be viewed in context of the demographics of the participant pool.

We also acknowledge that to make a strong inference from empathy trait, action responses like willingness to donate, participate in the protest, or support the police action etc. has to be collected and evaluated. Though the results have to be interpreted with caution, the preliminary study is unique and relevant, as there are no empirical investigations on the effect of photo framing on Indian readers and the role of context.

Conclusion

In this study, we aimed to analyze the range and strength of emotions and empathetic responses of participants to images of protests while varying three features that include gender, police, and frame type (close-up/long-shot). Owing to the broad scope of the study and its naturalistic setup, the implications should be evaluated in context. The nature of the protests, the reason for the agitation, the demographics of the activists, political ramifications and an individual's knowledge of the agricultural economy are all factors influencing response from civil society and political machinery. While photographs showing violence during protests have the same features, our response is biased by socio-cultural aspects of the environment and willingness to respect diverse view points and hence requires further research with stimuli presenting local conditions.

References

Arpan, L., Baker, K., Lee, Y., Jung, T., Lorusso, L., & Smith, J. (2006, 02). News coverage of social protests and the effects of photographs and prior attitudes. *Mass Communication & Society*, *9*, 1-20. doi: 10.1207/s15327825mcs0901_1

Barry, A. M. (1997). Visual intelligence: Perception, image, and manipulation in visual communication.

Bas, O., & Grabe, M. E. (2016). Personalized news and participatory intent: How emotional displays of everyday citizens promote political involvement. *American Behavioral Scientist*.

B. Kurdi, . M. R. B., S. Lozano. (2017). Introducing the open affective standardized image set (oasis). *Behav Res*, *49*, 457–470. doi: 10.3758/s13428-016-0715-3

Bucy, E. P. (2020). Invitations to participation how immersive presentations and emotional displays promote political involvement. *Reimagining Communication: Action*.

Cárcamo Ulloa, L., Marcos Mora, M. C., Cladellas Pros, R., & Castelló Tarrida, A. (2015, January 1). News photography for facebook: Effects of images on the visual behaviour of readers in three simulated newspaper formats. *Information Research*, *20*(1).

Casas, A., & Williams, N. W. (2019). Images that matter: Online protests and the mobilizing role of pictures. *Political Research Quarterly*, *72*, 360-375. doi: 10.1177/1065912918786805

Davis, M. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology*, *10*, 85.

Ekman, P. (1999). Basic emotions. In T. Dalgleish & M. J. Powers (Eds.), *Handbook of cognition and emotion* (pp. 4–5). Wiley.

Fadaee, S. (2021). Politics of alliance in the farmers' march to parliament in india. *International Sociology*, *37*, 31 - 49.

Finger, H. (2017). Labvanced: a unified javascript framework for online studies. *International Conference on Computational Social Science (Cologne)*.

Geise, S., Panke, D., & Heck, A. (2020). Still images—moving people? how media images of protest issues and movements influence participatory intentions. *The International Journal of Press/Politics*, *26*, 92 - 118.

Grabe, M. E., & Bucy, E. P. (2009). *Image bite politics: News and the visual framing of elections*. Oxford University Press. doi: 10.1093/acprof:oso/9780195372076.001.0001

Hans, V. B., & Hegde, S. (2020). Feminisation of agriculture: Insights. *International Research Journal of Management Sociology & Humanities*.

Iyer, A., Webster, J., Hornsey, M. J., & Vanman, E. J. (2014). Understanding the power of the picture: the effect of image content on emotional and political responses to terrorism. *Journal of Applied Social Psychology*, *44*, 511-521. doi: https://doi.org/10.1111/jasp.12243

Jasper, J. M., & Paulsen, J. D. (1995). Recruiting strangers and friends: Moral shocks and social networks in animal rights and anti-nuclear protests. *Social Problems*, *42*(4), 493–512. doi: 10.1525/sp.1995.42.4.03x0129y

Juris, J. S. (2008). Performing politics: Image, embodiment, and affective solidarity during anticorporate globalization protests. *Ethnography*, 61–97.

Keib, K., Espina, C., Lee, Y.-I., Wojdynski, B. W., Choi, D., & Bang, H. (2018). Picture this: The influence of emotionally valenced images, on attention, selection, and sharing of social media news. *Media Psychology*, *21*, 202-221. doi: 10.1080/15213269.2017.1378108

Li, Y., & Xie, Y. (2019). Is a picture worth a thousand words? an empirical study of image content and social media engagement. *Journal of Marketing Research*, *57*, 1 - 19.

Lilleker, D. G., & Koc-Michalska, K. (2018). What drives political participation? motivations and mobilization in a digital age. *Digital Politics: Mobilization, Engagement and Participation*.

Madan, M., & Nalla, M. K. (2015). Exploring citizen satisfaction with police in india: The role of procedural justice, police performance, professionalism, and integrity. *Policing-an International Journal of Police Strategies & Management*, *38*, 86-101.

Marcus, G. E., Neuman, W. R., & MacKuen, M. (2002). Affective intelligence and political judgment. *Political Psychology*, *23*, 205–208.

Mehta, S., & Kumar, A. (2017). Deconstructing the enigma of recent farmers' protests in india..

Midberry, J. (2020). Compassionate horror or compassion fatigue? responses to human-cost-of-war photographs. *International Journal of Communication*, *14*, 22.

Nash, R. A. (2018). Changing beliefs about past public events with believable and unbelievable doctored photographs. *Memory*, *26*, 439 - 450.

Neogi, A. S., Garg, K., Mishra, R. K., & Dwivedi, Y. K. (2021). Sentiment analysis and classification of indian farmers' protest using twitter data..

Owens, L., & Palmer, L. K. (2003). Making the news: Anarchist counter-public relations on the world wide web. *Critical Studies in Media Communication*, *20*(4), 335-361. Retrieved from https://doi.org/10.1080/0739318032000142007 doi: 10.1080/0739318032000142007

P.J. Lang, . B. C., M.M. Bradley. (2008). International affective picture system (iaps): Affective ratings of pictures and instruction manual. *Technical Report*, *A*(8), 457–470.

Powell, T. E., Boomgaarden, H. G., De Swert, K., & de Vreese, C. H. (2015). A clearer picture: The contribution of visuals and text to framing effects. *Journal of Communication*, *65*, 997-1017. doi: https://doi.org/10.1111/jcom.12184

Reinka, M. A., & Leach, C. W. (2018). Racialized images: Tracing appraisals of police force and protest. *Journal of*

Personality and Social Psychology, *115*, 763–787.

Ryan, T. J. (2011). What makes us click? demonstrating incentives for angry discourse with digital-age field experiments. *Randomized Social Experiments eJournal*.

Sontag, J. M. (2018). Visual framing effects on emotion and mental health message effectiveness. *Journal of Communication in Healthcare*, *11*, 30-47. doi: 10.1080/17538068.2018.1435017

Todorov, A., Mandisodza, A. N., Goren, A., & Hall, C. C. (2005). Inferences of competence from faces predict election outcomes. *Science*, *308*, 1623–1626. doi: 10.1126/science.1110589

Weikmann, T. E., & Powell, T. E. (2019). The distant sufferer: Measuring spectatorship of photojournalism. *International Journal of Communication*, *13*, 22.

Zinko, R., Stolk, P., Furner, Z., & Almond, B. (2020). A picture is worth a thousand words: how images influence information quality and information load in online reviews. *Electronic Markets*, *30*, 775-789. doi: 10.1007/s12525-019-00345-y