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To Shoot or Not to Shoot: Effect of Framing of Threat-Related Imagery on Threat Perception in the Shooter Bias Task

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Abstract:

We investigated whether exposure to threat-related imagery from the 2013 Boston Marathon Bombings influenced threat perception in a shooting task and whether framing of that information matters. To test this, participants first watched one of three videos which all contained still images set to music. The negatively-framed threat video contained images of news coverage from the Boston Marathon bombings combined with ominous phrases such as "Not Since 9/11". The positively-framed threat video contained the same images from the news coverage, but with uplifting phrases such as "Boston Strong". The control video contained neutral images from the International Affective Picture System. Participants then completed a shooter bias task in which they were instructed to 'shoot' individuals shown holding a gun and 'not shoot' individuals shown holding an everyday object (e.g., a wallet or cell phone) by pressing one of two keys on the keyboard. We predicted that participants in the negatively-framed threat condition would exhibit decreased sensitivity (i.e. be less able to distinguish guns from non-guns) compared to those in both the positively-framed threat and the control conditions. Furthermore, we predicted that participants in the negatively-framed threat condition would have a more liberal bias (i.e. be more likely to shoot) resulting in increased false alarms (i.e. mistakenly shooting unarmed targets) compared to participants in the other two conditions. Preliminary results partially confirm our hypotheses. These findings have important implications for how mass media should frame information after traumatic events to help minimize hyper-vigilance in the population

Introduction:

- This study explores how exposure to threat-related imagery from the Boston Marathon bombings influences threat perception in a shooting task, and whether the framing of this information plays a role in its effect on shooting behavior.

- Previous research suggests that as threat-relevant cognitions become more accessible, people believe they are more likely to encounter threats (Lichtenstein et al., 1979).

- However, research also suggests that the affective framing of threat-relevant cognitions may moderate their effect on threat perception (Wormwood, Lynn, Barrett, & Quigley, 2015). Specifically, threat-relevant cognitions have been show to have a more detrimental effect on threat perception when they are framed in an affectively-negative versus affectively-positive manner.

- Based on these past findings, we predicted that participants in the current study would exhibit decreased sensitivity (i.e. be less able to distinguish armed from unarmed targets) in a shooting task when they were prompted to think about the Boston Marathon bombings in an affectively-negative way compared to when they were prompted to think about the same tragedy in a more affectively-positive way or when they were not prompted to think about the bombings at all.

- Furthermore, we predicted that participants in the negatively-framed threat condition would have a more liberal bias (i.e. be more likely to shoot) compared to participants in the other two conditions.

Methods:

Threat Induction Task

Participants from the Boston community (*N*=103) were randomly assigned to watch one of three videos of still images set to music:

- Positively-framed Threat Condition: participants saw Boston Bombing photos and news headlines that were positively framed (e.g. "Boston Strong") with music intended to induce positive affect (See Fig. 1A)
- Negatively-framed Threat Condition: participants viewed the same Boston Bombing photos but with news headlines that were negatively framed (e.g. "Finish Line Turns Gruesome, Deadly") and with music intended to induce negative affect (see Fig. 1B)
- Control Condition: participants viewed Neutral International Affective Picture System (IAPS) images set to music designed to not induce either positive or negative affect.

PITTSBURGH TRIBUNE-REVIEW
BOSTON STRONG
"In the face of cruelty, we will choose compassion."

STATE JOURNAL
FINISH LINE TURNS GRUESOME, DEADLY

Figure 1A   **Figure 1B**

Shooter Bias Task

- In each of 40 trials, participants first saw random backgrounds scenes, and then a Caucasian male appeared in the final background scene.
- Each man held either a gun or an everyday object (e.g., wallet, cell phone).
- Participants used keyboard to try to "Shoot" and "Not Shoot" armed and unarmed individuals, respectively. They had an open-ended response window.
- Images were shown only briefly (1 sec) and were difficult to see clearly (see Fig 2).

Figure 2

References:

Wormwood, J. B., Lynn, S. K., Barrett, L. F., & Quigley, K. S. (2015) Threat perception after the Boston marathon bombings: The effects of personal relevance and conceptual framing. *Cognition and Emotion, 1-11* doi: 10.1080/02699931.2015.1010487

Lichtenstein, S., Slovic, P., Fischhoff, B., Layman, M., & Combs, B. (1979). Judged frequency of lethal events. *Journal of Experimental Psychology: Human Learning and Memory, 4*, 551–578.

Results:

Data were analyzed using a series of One-way ANOVAs
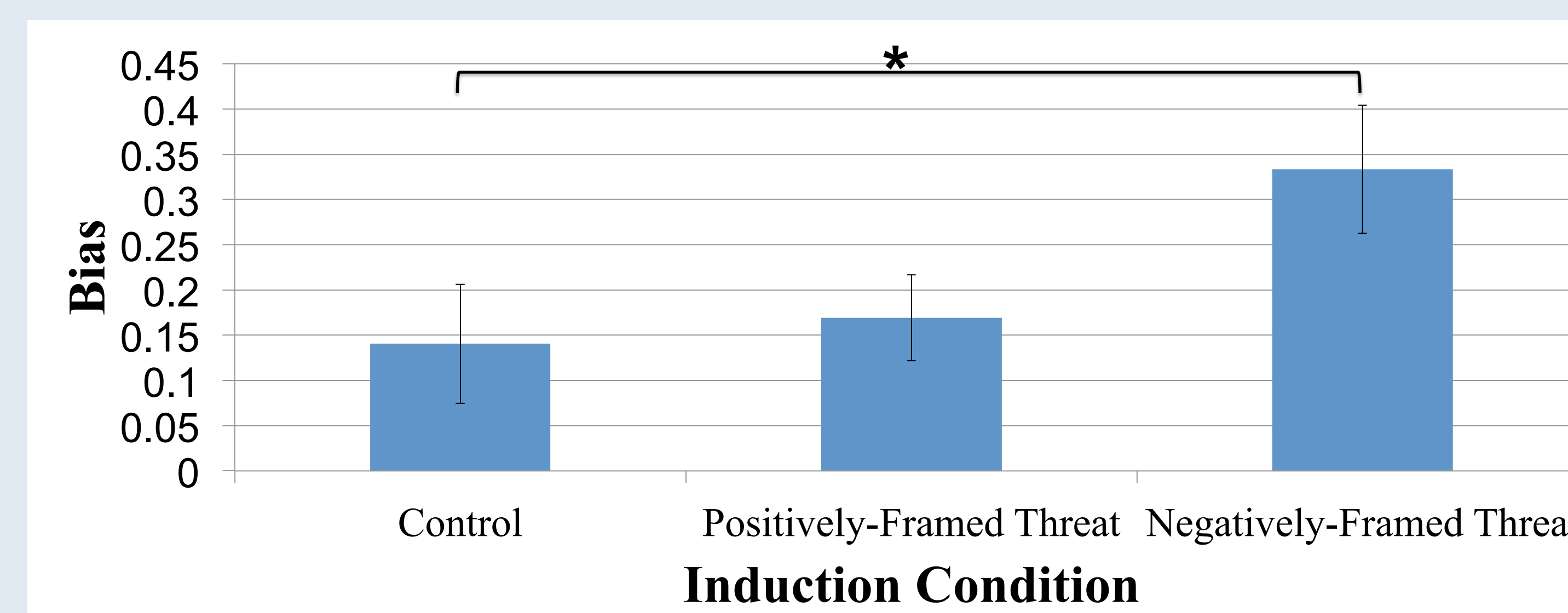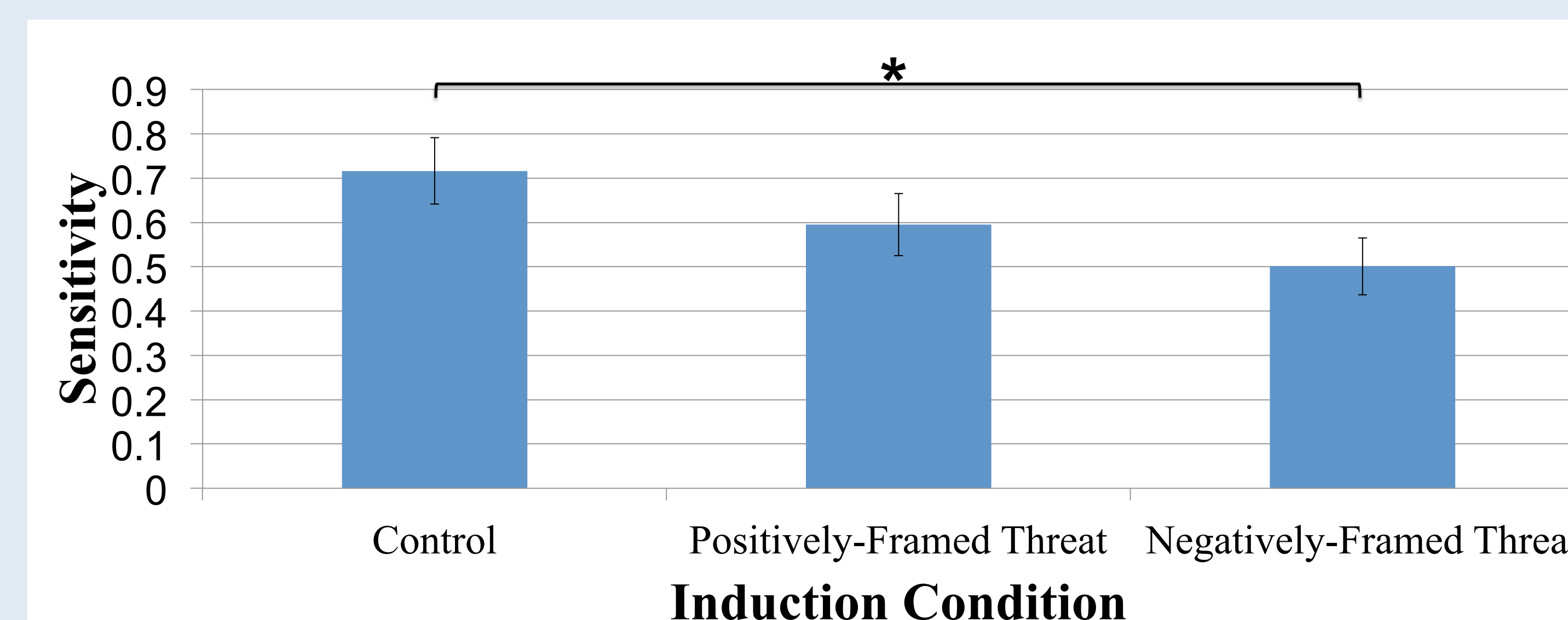
Discussion:

- As predicted, results revealed reduced sensitivity in the negatively-framed threat condition relative to the positively-framed threat condition and the control condition. That is, participants in the negatively-framed threat condition were less able to distinguish armed from unarmed individuals.

- Contrary to predictions, results revealed a significantly more *conservative* bias for those in the negatively-framed threat condition compared to those in the positively-framed threat condition and control condition. That is, participants in the negatively-framed threat condition had a tendency to be less likely to shoot all individuals, whether or not they had a gun.

- One possible reason for the more conservative bias among those in the negatively-framed threat condition is that these participants see the harmful effects of threatening situations in the video, and this may cause them to value human life more. Future studies should test this potential explanation directly.

- In future work, we plan to examine whether being in closer proximity to the bombings might result in reduced sensitivity and a more conservative bias in the shooting task, particularly for those in the negatively-framed threat condition.

- Our findings have important implications for how mass media should frame information after traumatic events to minimize their impact on the population. In particular, framing such events in a more positive manner by highlighting the community coming together may help eliminate the effect the incidents have on threat perception.

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