Affect-Motivated Reasoning about a Solution to a Threat:
The Brain-Eating Amoeba Study

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INTRODUCTION

- **Affect**, "good" or "bad" experienced feelings towards a stimulus, can **motivate** behaviors and accuracy-aimed deliberation (Peters et al., 2006)
- Directional goals motivate construction of judgments and decisions that align with goals (Kunda, 1990)
- Affect associated with goal attainment transfers to method of attainment (Fishbach et al., 2004)
- Negative affect toward a threat may motivate optimistic judgments and evaluations of a solution (Silverstein et al., 2022)

Naegleria fowleri (the Brain-Eating Amoeba) causes primary amebic meningoencephalitis (PAM). No known cure; only suspected treatment is an investigational drug—Impavido.

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HYPOTHESES

Increasing negative *integral* affect toward the amoeba would:
- Increase Impavido use intentions and perceived effectiveness (**H1 and H2a**)
- Decrease Impavido risk perceptions and negative affect to Impavido (**H2b and H3**)

FOR REFERENCES, SEE HANDOUT

RESULTS

Impavido Results For the Negative and Positive Integral (Amoeba) Affect Inductions

X-axis (Impavido Questions): Treatment Intentions (.57***), Prophylactic Intentions (.46***), Treatment Effectiveness (.18), Prophylactic Effectiveness (.31***), Risk (-.09)

Y-axis: Average Response on 6-Point Likert Scale

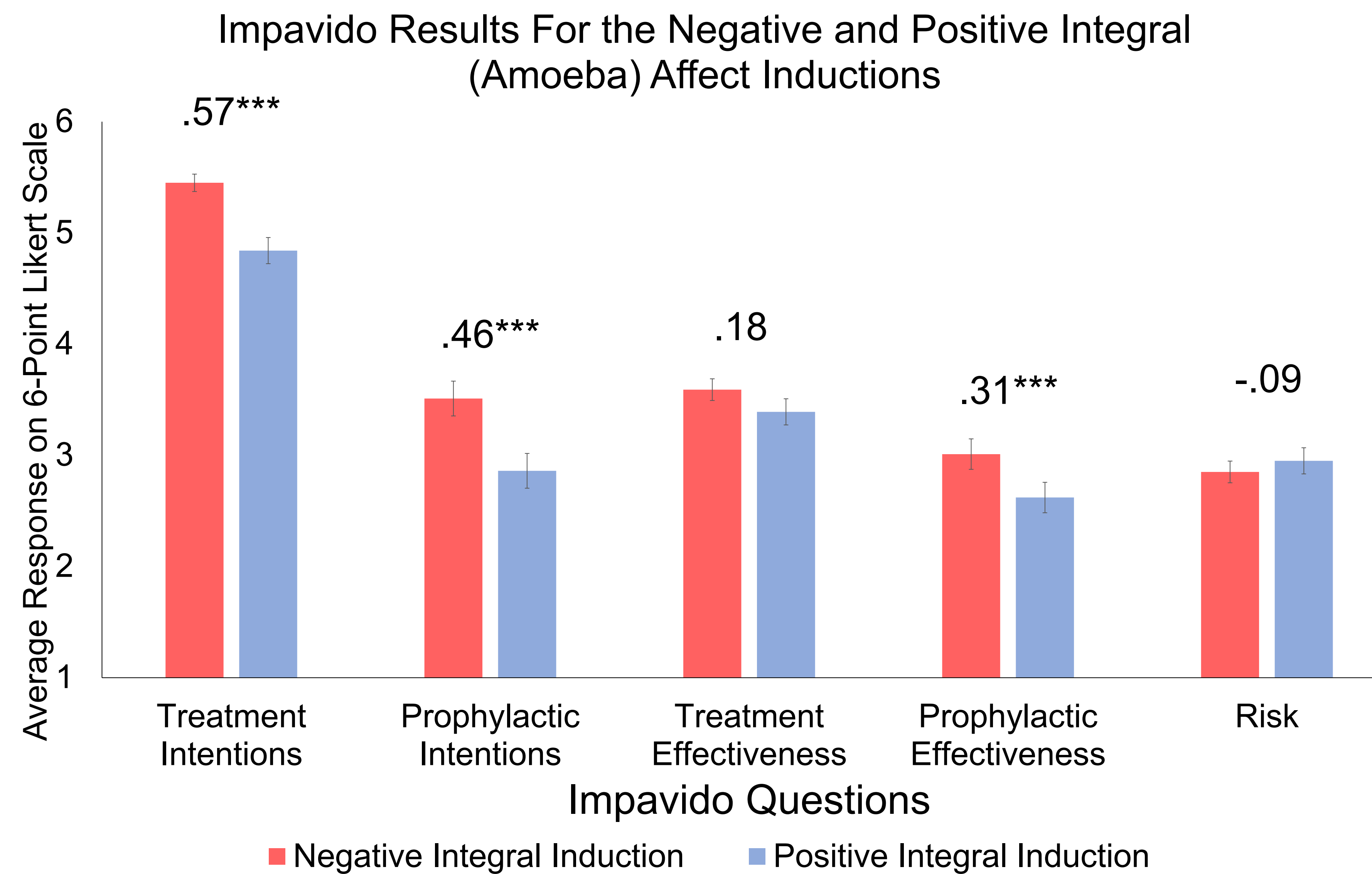Legend: ■ Negative Integral Induction ■ Positive Integral Induction

Fig 1. H1 was supported and H2a was partly supported. Increasing negative amoeba affect increased Impavido use intentions as a treatment and prophylaxis and increased Impavido effectiveness judgments as a prophylaxis but not as a treatment. **H2b was not supported.** No differences existed in Impavido risk perceptions between participants in the positive v. negative integral conditions. *Note: Error bars represent 95% Confidence Intervals. Top values indicate Cohen's d. *** indicates p < .001.*
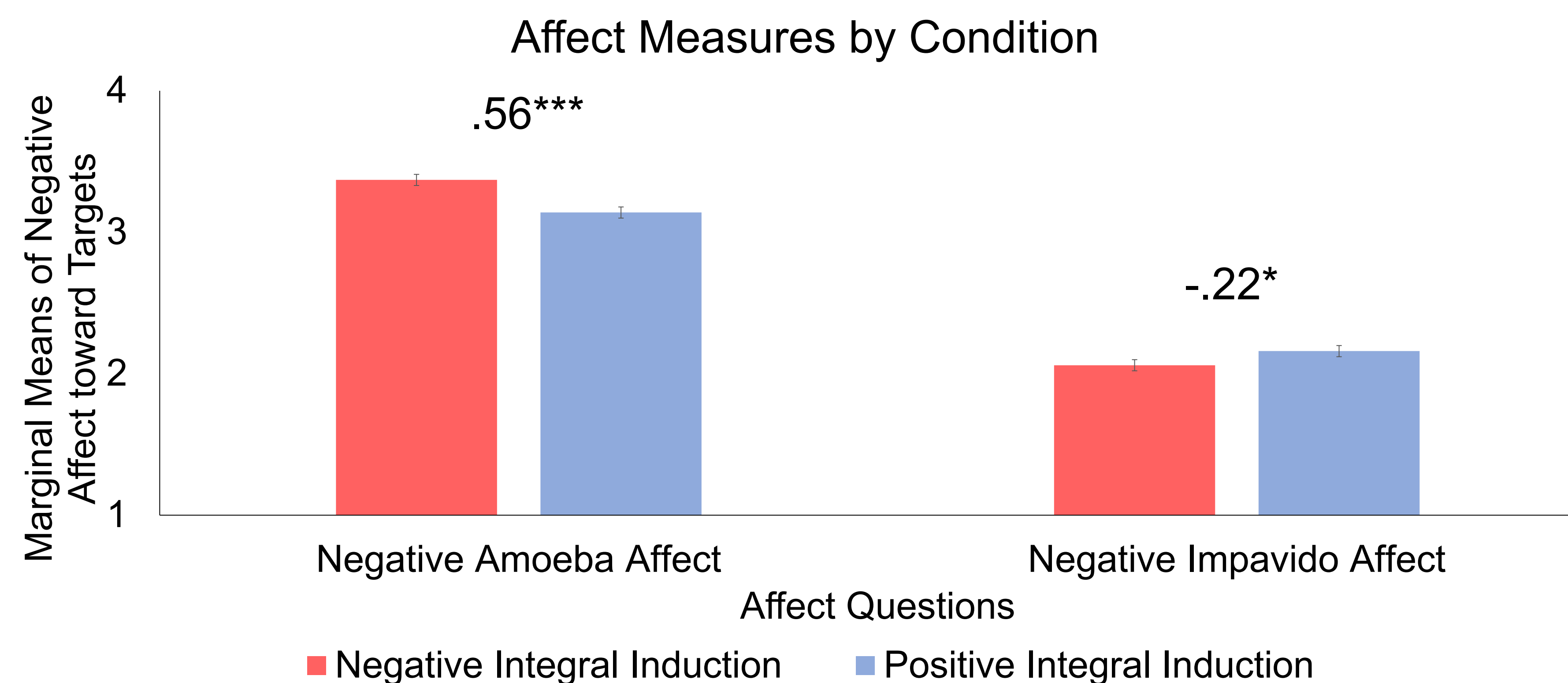
Affect Measures by Condition

X-axis (Affect Questions): Negative Amoeba Affect (.56***), Negative Impavido Affect (-.22*)

Y-axis: Marginal Means of Negative Affect toward Targets

Legend: ■ Negative Integral Induction ■ Positive Integral Induction

Fig 2. H3 was supported. Increased negative amoeba affect decreased negative Impavido affect. *Note: Error bars represent 95% Confidence Intervals. Top values indicate Cohen's d. * indicates p < .05, *** indicates p < .001.*

METHOD

1,393 MTurkers recruited via CloudResearch (48.7% Female, 80.1% White, M_{age} = 43.99)

Participants were randomly assigned to one of four affect inductions—**Negative Integral (toward the Amoeba), Positive Integral, Negative Incidental (toward COVID Pandemic), and Positive Incidental**

They then read about Impavido (e.g., evidence of its effectiveness and side effects)
- No information was provided about Impavido as a prophylactic measure to protect against PAM

No effects existed of the incidental manipulation, and we will not discuss further

Measures	Response Scales
Impavido Questions	
Treatment Use Intentions (After suspected exposure)	Completely impossible [1] to Completely certain [6]
Prophylactic Use Intentions (Before potential exposure)	Completely impossible [1] to Completely certain [6]
Treatment Effectiveness (After suspected exposure)	Not at all effective [1] to Completely effective [6]
Prophylactic Effectiveness (Before potential exposure)	Not at all effective [1] to Completely effective [6]
Risk Perception	Not at all risky [1] to Extremely risky [6]
Negative Affect	Does not apply/describe [1] to Completely Describes [4]*
Amoeba Questions	
Negative Affect	Does not apply/describe [1] to Completely Describes [4]*

*Modified Holistic Unidimensional Emotions Scale (Peters & Slovic, 2007)

DISCUSSION

By increasing negative amoeba affect, we:
- Decreased negative Impavido affect
- Increased Impavido use intentions (treatment and prophylactic use)
- Increased effectiveness judgments (specifically prophylactic use)

We see causal evidence for affect-motivated reasoning. Thus, affect can motivate biased deliberation.