

Climate Change is Emotional and Personal: Effectiveness of Framing Interventions on Environmental Attitudes and Donation Behaviours

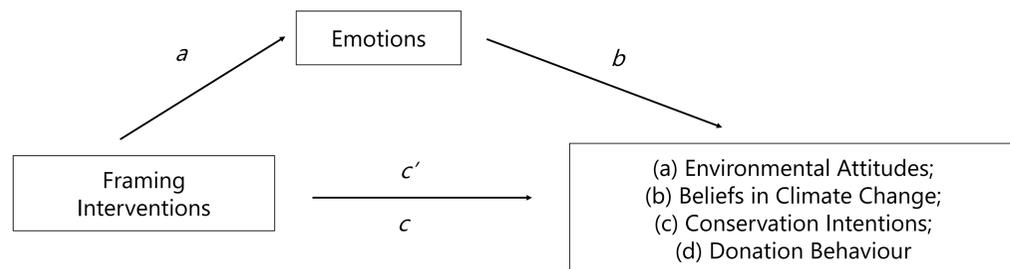
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Background & Research Objectives

Despite over 97% of scientific papers concluding that human activities are causing climate change (Cook et al., 2016), disconnections between science and public opinions continue to persist (Flusberg et al., 2017). As society becomes increasingly divisive and the science of climate change becomes politicized, perceptual and behavioral changes by individuals are vital to advancing practices for the fight against climate change. Existing literature has attributed different climate change frames as a reason for polarizing environmental attitudes (Dunlap et al., 2001; Feinberg & Willer, 2013; Hoffman, 2011) As O'Neill et al., (2015) noted, "framings are never neutral, they define an issue, identify causes, make moral judgments, and shape proposed policy solutions." Therefore, understanding the impact of framing interventions on people's environmental attitudes and behaviours is critical for promoting greater public support, enhancing community engagement, and strengthening environmental stewardship. This study investigated the effect of four framing interventions (scientific, moral, metaphoric, and awe) on conservative and liberal participants' environmental attitudes, climate change beliefs, conservation intentions, and donation behaviour.

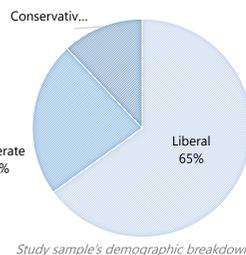
Study Model & Hypotheses

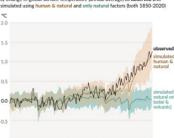


- H₁: Exposure to framing interventions influences (a) pro-environmental attitudes, (b) beliefs in climate change, (c) personal conservation intentions, and (d) donation behaviour. (c pathway)
- H_{1a}: Effects of framing intervention differ amongst conservatives and liberals.
- H₂: Exposure to framing intervention has a significant impact on discrete emotions (i.e., anger, disgust, fear, anxiety, sadness, enthusiasm, relaxation, happiness). (a pathway)
- H_{2a}: Exposure to framing intervention causes different emotional responses amongst conservatives and liberals.
- H₃: Emotion mediates framing effect on a) environmental attitudes, b) beliefs in climate change, c) personal conservation intentions, and d) donation.

Methodology

- An experimental survey that uses randomized controlled trial to understand the effectiveness of framing interventions on people's environmental attitudes, climate change beliefs, personal conservation intentions, and donation behaviour.
- 1,250 Canadian participants were recruited to broaden our current understanding of climate change frames beyond the American context.



Control	Scientific	Moral	Metaphoric	Awe
				
Read an apolitical message to establish a baseline for comparison with treatment groups	Two paragraphs quoted from the most recent IPCC report (2021) to represent scientific framing (Masson-Delmotte et al., 2021a)	A moral message has been written using phrases like 'dirty pollution', 'protect Canada's sacred nature landscape' to appeal to conservative's moral ideal of authority, protection, and purity (Feinberg & Willer, 2013; Wolsko et al., 2016).	Metaphoric framing personifies forests to participants to subconsciously associate the health of the environment to one's own body (Flusberg et al., 2017; Landau & Keefer, 2014).	Awe framing describes a person's experience of awe and wonders from mother nature. This intervention seeks to elicit self-transcendent emotions to increase pro-environmental attitudes (Stellar, 2021; Zhao et al., 2018).

Findings and Discussion

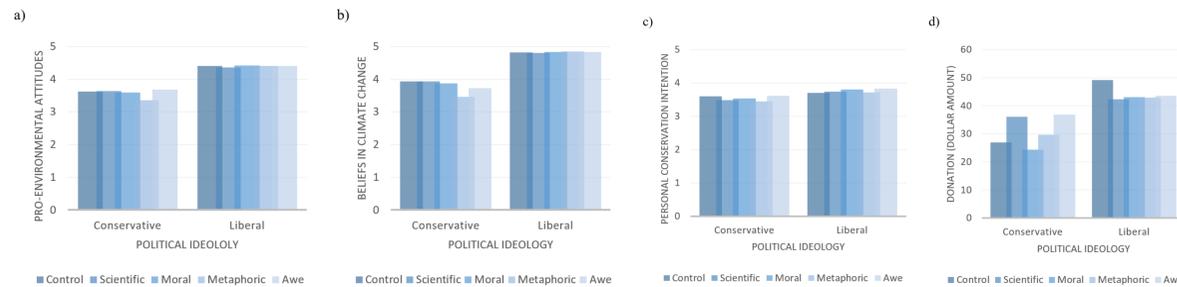


Figure 1: Mean (a) pro-environmental attitudes, (b) beliefs in climate change, (c) personal conservation intention, and (d) donation as a function of political ideology and experimental framing conditions

Implication: As established by our general findings and numerous studies (Dunlap et al., 2001; Hornsey et al., 2016), beliefs in climate change and environmental attitudes and behaviours are highly correlated with the individual's political ideology. As a result, a brief framing intervention is unlikely to have a significant persuasive effect on people's environmental attitudes and behaviours that are motivated by ideological reasonings. The stickiness of ideological beliefs is exemplified in our findings as liberals and conservatives continue to exhibit environmental attitudes and beliefs that are consistent with their political affiliation despite being presented with a brief message about the reality and urgency of climate change.

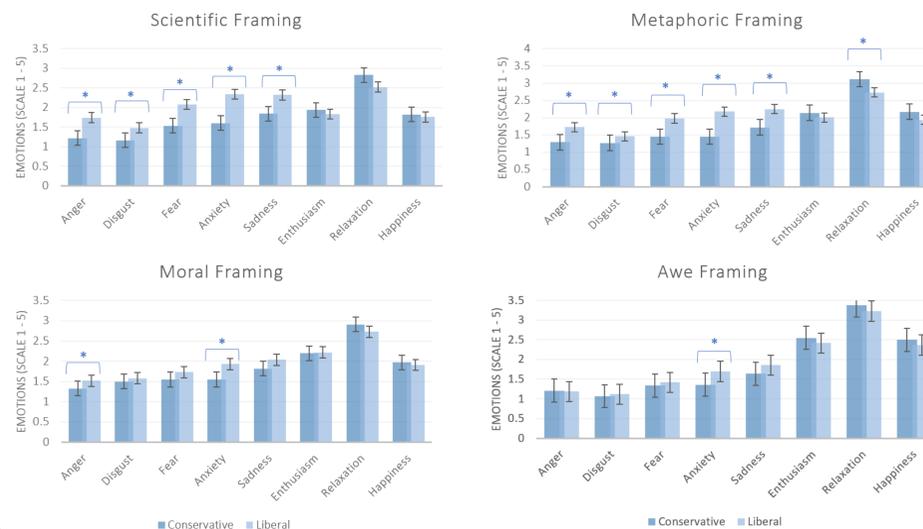


Figure 2: Mean emotions as a function of political ideology and experimental framing conditions. Asterisks indicate significant differences between groups ($p < .05$). Error bars represent ± 1 SEM.

Recommendations

- The insignificant framing effects observed in our study suggest that reliance on brief framing interventions is unlikely to yield significant persuasive results nor mobilize greater public support for pro-environmental policies. We recommend that future interventions should consider employing a more comprehensive range of instruments to generate sustainable changes in environmental attitudes and behaviours.
- Both positive and negative emotions play a role in effective climate change communication. Future communication and interventions designs must strike a balance in provoking positive and negative emotions in order to promote constructive and sustainable public engagement on the issue of climate change.
- Interest and enthusiasm emerged as the strongest predictor and mediator for environmental attitudes and prosocial behaviours. Therefore, we suggest cultivating enthusiasm and sustaining interest in climate change is key to facilitating more profound dialogues between individuals on both sides of the political spectrum.

General Finding: political orientation is one of the strongest predictors of people's environmental attitudes, beliefs in climate change, personal conservation intentions, and donation behaviour.

Key Finding #1: Framing interventions were ineffective at changing conservative and liberal's environmental attitudes, climate change beliefs, personal conservation intentions, and donation behaviour.

Key Finding #2: Different climate change frames lead to different emotional reactions. For instance, scientific framing is associated with higher levels of fear, while awe framing is associated with lower levels of fear.

Key Finding #3: Conservatives and liberals experience different emotional reactions to climate change messages. On average, liberals expressed significantly greater negative emotions after reading a climate change message.

Social Identity Theory
Our identification as members of specific social groups informs our values and beliefs, as well as the way we think, feel, and act (Ashforth & Mael, 1989).

Key Finding #4: The Mediating Role of Negative Emotions – Anxiety mediates framing effect and is associated with higher pro-environmental attitudes, beliefs in climate change, and personal conservation intentions. Fear is associated with stronger beliefs in climate change while sadness is associated with lower personal conservation intentions.

Key Finding #5: The Mediating Role of Positive Emotions – Enthusiasm emerged as the strongest mediator for framing effects on pro-environmental attitudes, climate change beliefs, personal conservation intentions, and donation behaviour.

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