



Validating a Diversity-informed Database of Emotional Images for Affective and Clinical Science

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RATIONALE

- Compassion, fear, and vicarious distress are distinct emotional experiences that can arise from observing threats or harm to oneself or others (King et al., 2023).
- No stimulus set yet exists to specifically differentiate these important empathy-related responses.
- Existing image sets do not categorize images based on their empathy- or fear-related content. Moreover, normative data based on valence/arousal may miss important dimensions of physiology and emotion relevant to compassion or interpersonal processes.
- We developed the **Thematic Affective Picture Set (TAPS)**. Our goals were to a) represent a diverse range of human and emotional content, b) select high-resolution images—ideal for use in eye-tracking or immersive paradigms, and c) organize the image set into themes for use in memory experiments or blocked experimental designs.
- We hope that future studies will use the TAPS to investigate the effects of interventions or individual differences on emotional, physiological, and behavioral responses to suffering, threat, and interpersonal harm.

METHODS

Stimulus Selection: We used search engines (e.g., Bing), curated image databases (e.g., unsplash.com), and photo journalistic essays (e.g., The Guardian) to gather images for set inclusion. We only included high resolution images (suitable for 3 to 4K displays). The images were grouped into one of **90 themes** (i.e., semantic groupings) within 5 global content categories.

Image Curation: For each theme, we selected **12 final images** for set inclusion, for a total of 1,440 images. All images were cropped to fit a 3:2 aspect ratio. All final images were also reviewed and hand-edited for color composition, clarity, exposure, contrast, white balance, etc. The purpose of this editing process was to better normalize image properties within themes and categories, and to increase natural representations of color, lighting, and detail in the depicted scenes.

Focus on Diversity: The TAPS was reviewed by an inclusivity and equity consultant (author KM). Her feedback was used to revise and adjust the content of each theme and category. Focus was placed on reducing or altering representations that may promote stereotyping and to include depictions of individuals, situations, or groups of people in ways that may be less commonly represented in media. We attempted to balance representations of diversity on multiple dimensions, including age, race or ethnicity, gender expression, cultural background, body size and type, socioeconomic status, and representations of differences in cognitive or physical abilities.

Stimulus Norming: To norm the set, undergraduate participants are asked to rate the images on 8 dimensions across two separate sessions. Ratings are made on a continuous visual-analog scale from 0 to 6.

In **Session 1**, participants made **feeling ratings** of their reaction to each image using unipolar valence and approach/avoid dimensions:

Positive feelings, Negative feelings, Approach motivation, Avoidance motivation

In **Session 2**, participants made **content ratings** of the degree to which each image included elements, themes, or aspects of:

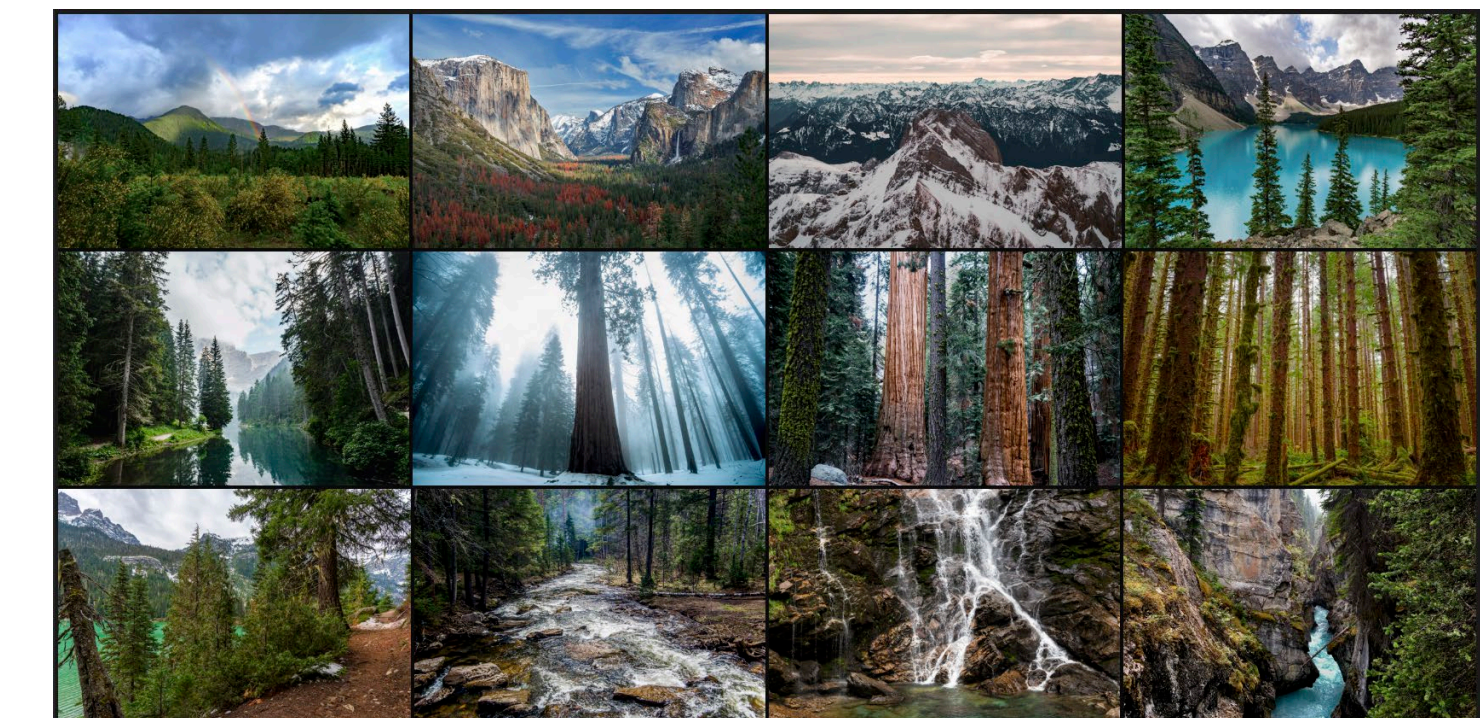
Suffering, Threat, Affiliation, Ease

Initial data from Session 1 are presented here. Data collection to gather population norms for the full TAPS is ongoing.

1,440 IMAGES (5 EMOTION CATEGORIES, 18 THEMES PER CATEGORY, 12 IMAGES PER THEME) + 2 NEUTRAL CATEGORIES

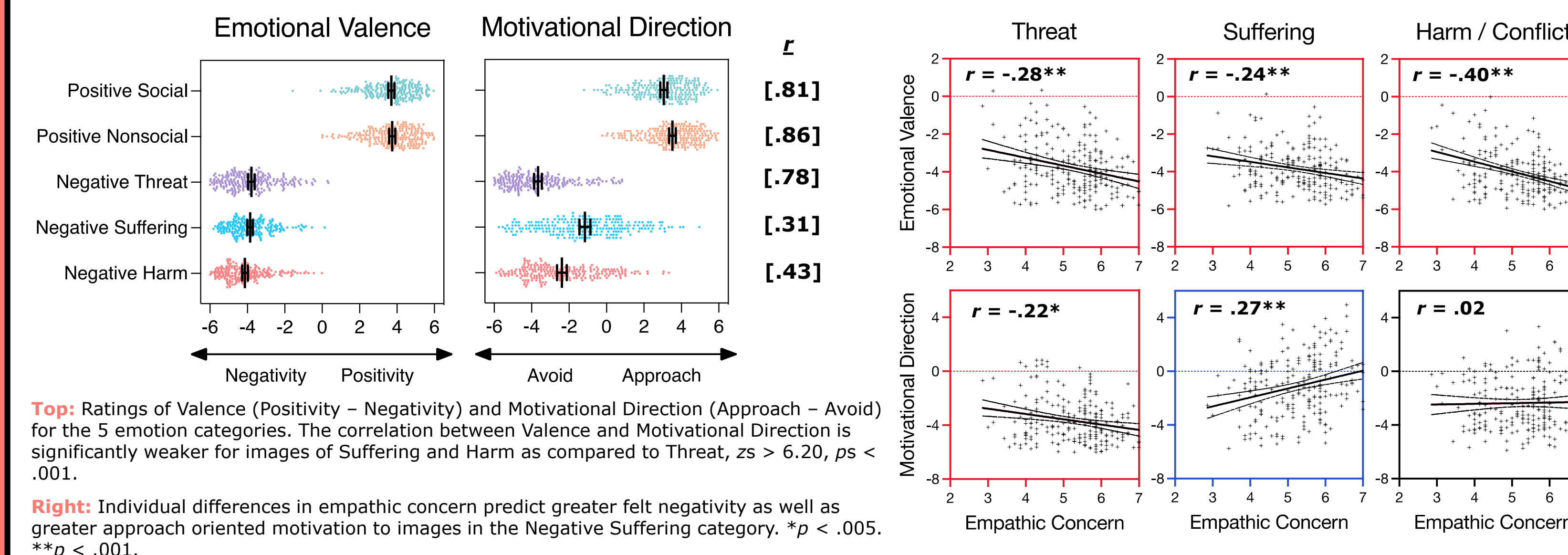
Negative / Unpleasant			Positive / Pleasant		Neutral / Reference	
Suffering	Threat	Harm / Conflict	Social	Nonsocial	Social	Nonsocial
<p>People or animals experiencing physical or emotional pain, distress, loss, injury, or need of material aid. The suffering can be obvious or implied. No active representations of interpersonal violence or agents of harm.</p> <ol style="list-style-type: none"> Poverty Homelessness Addiction / Mental Illness Aging / Loneliness Sadness / Upset Grief / Mourning Natural Disasters Migrants / Refugees Starvation / Famine Severe Injury / Debilitation Violence / Disaster Aftermath Active Crises / Emergencies Environmental Damage Animal Suffering Abuse / Assault Victims Racial Injustice (Protests) Covid-19 Sickness / Disease 	<p>People, animals, objects, or situations that are dangerous, threatening, or scary. The threat can be directed toward or away from the viewer and can be naturally occurring or human-made. No direct representations of victims of danger or harm.</p> <ol style="list-style-type: none"> Snakes Spiders Creepy Insects / Creatures Stinging Insects / Scorpions Sharks Alligators / Crocodiles Canines / Large Carnivores Guns Knives / Handheld Weapons Terror / Hate Anger / Confrontation Fear / Phobias Death / Mortality Skulls / Skeletons Weapons / Combat Fire / Explosions Extreme Weather Wrecks / Crashes 	<p>Individuals or groups of people in direct physical or relational conflict. This includes active or implied representations of violence, disagreement, and interpersonal harm. Images contain elements of both suffering and threat.</p> <ol style="list-style-type: none"> Israel / Palestine Central African Republic Hong Kong Venezuela Ukraine / Russia France / Belgium South Africa Myanmar / Thailand Greece / Turkey Brazil Indigenous Resistance US Police / Black Lives Matter US Political Protests US Capitol Insurrection White Supremacist Rally Immigration Raids / Detainment Animal Abuse / Harm Domestic Violence 	<p>Pleasant or positive scenes of people or animals, including elements of joy, affection, affiliation, celebration, play, material social engagement, and daily life experiences. Images contain obvious social content.</p> <ol style="list-style-type: none"> Active / Outdoors Wild Animals Baby Animals Pets Animal Friends Babies / Infants Children Playing Family Personal Affection Portraits Happiness / Joy Silliness / Fun Friendship Pandemic Living Daily Life Scenes Groups / Gatherings Animal Abuse / Harm Music / Dancing 	<p>Pleasant or positive scenes that do not include people or social animals. The scenes can be of naturally occurring phenomena, like landscapes or flowers. They can also be human-made, like buildings or dwellings.</p> <ol style="list-style-type: none"> Flowers / Meadows Cottages / Cabins Interior Spaces Mediterranean Exteriors Architecture Autumn Scenes Crops / Farms Family Food / Cuisine Hot Air Balloons Boats / Maritime Beach / Seashore Tropical / Rainforest Underwater Scenes Tropical / Rainforest Mountains / Evergreens Iceland Geological Features American Southwest Stars / Auroras 	<p>Low-arousing or "neutral" scenes of individuals or groups of people in various situations and settings.</p>	<p>Low-arousing or "neutral" scenes of objects or settings that do not include people or social animals.</p>

THEME-BASED ORGANIZATION "MOUNTAINS / EVERGREENS"



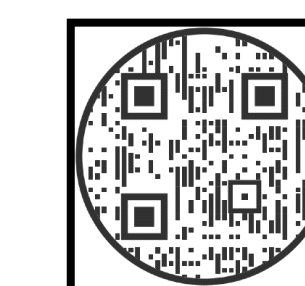
Photos by Dan Meyers, Aniket Deole, Claudio Schwarz, Brandon Jean, Luca Bravo, Mike L. Josh Carter, Yux Xiang, Erik Ringsmuth, Daniil Silantev, Riccardo Chiarini, and Kenny Bittick from Unsplash.com

INITIAL VALIDATION (N = 227 UNIVERSITY PARTICIPANTS)



FEATURES OF THE TAPS

- Emphasis on human and situational diversity
- Distinction between suffering, threat, and harm optimizes set for studies of empathy or compassion
- Theme-based organization
- High-quality images edited for natural color and clarity
- Depictions of contemporary real-world events
- Unipolar norms of valence (positivity/negativity) and motivational direction (approach/avoid)
- Additional norms for thematic representation of suffering, threat, affiliation, and ease



Signup to be notified when the set becomes available
Free to use for research purposes!

Reference: King et al. (2023). *Journal of Experimental Psychology: General*, 152, 2897-2924. <https://doi.org/10.1037/xge0001431>