

The Development of Novel Norm Interventions for Promoting Pro-Environmental Consumption Behaviors

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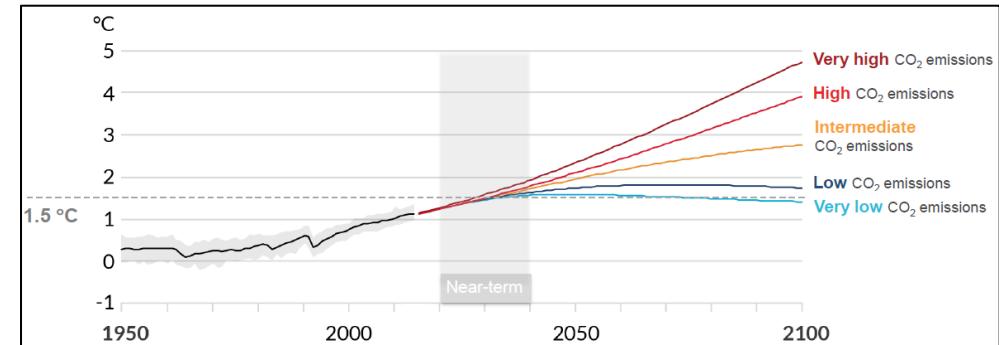
The Current Climate Crisis

- Environmental consequences
 - Rising surface temperatures
 - Rising sea levels
 - More frequent extreme weather events
- Human activities contribute to ongoing climate change processes

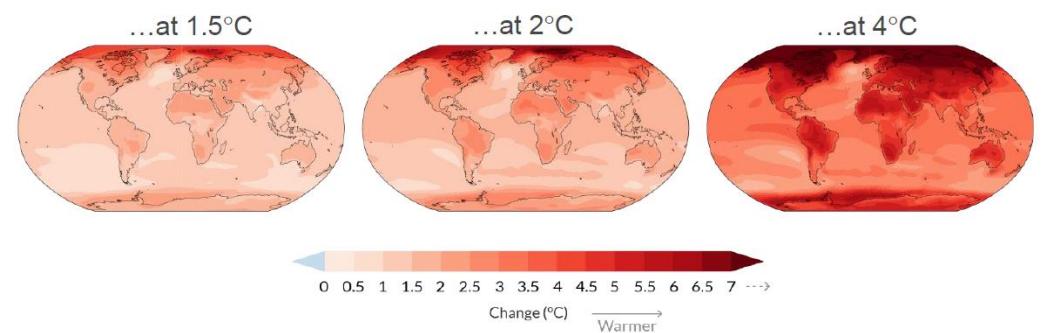


A Window of Opportunity

- The **Intergovernmental Panel on Climate Change (IPCC)** is a United Nations organized body of researchers that reviews the latest climate change research.
- In the IPCC 2020 report:
 - Possible to limit rise in global temperatures to **1.5°C**
 - Must reach **zero** human emissions of GHGs within the next 20-30 years
 - Lifestyle changes, such as **decreased consumption**, can contribute to lowering GHG emissions

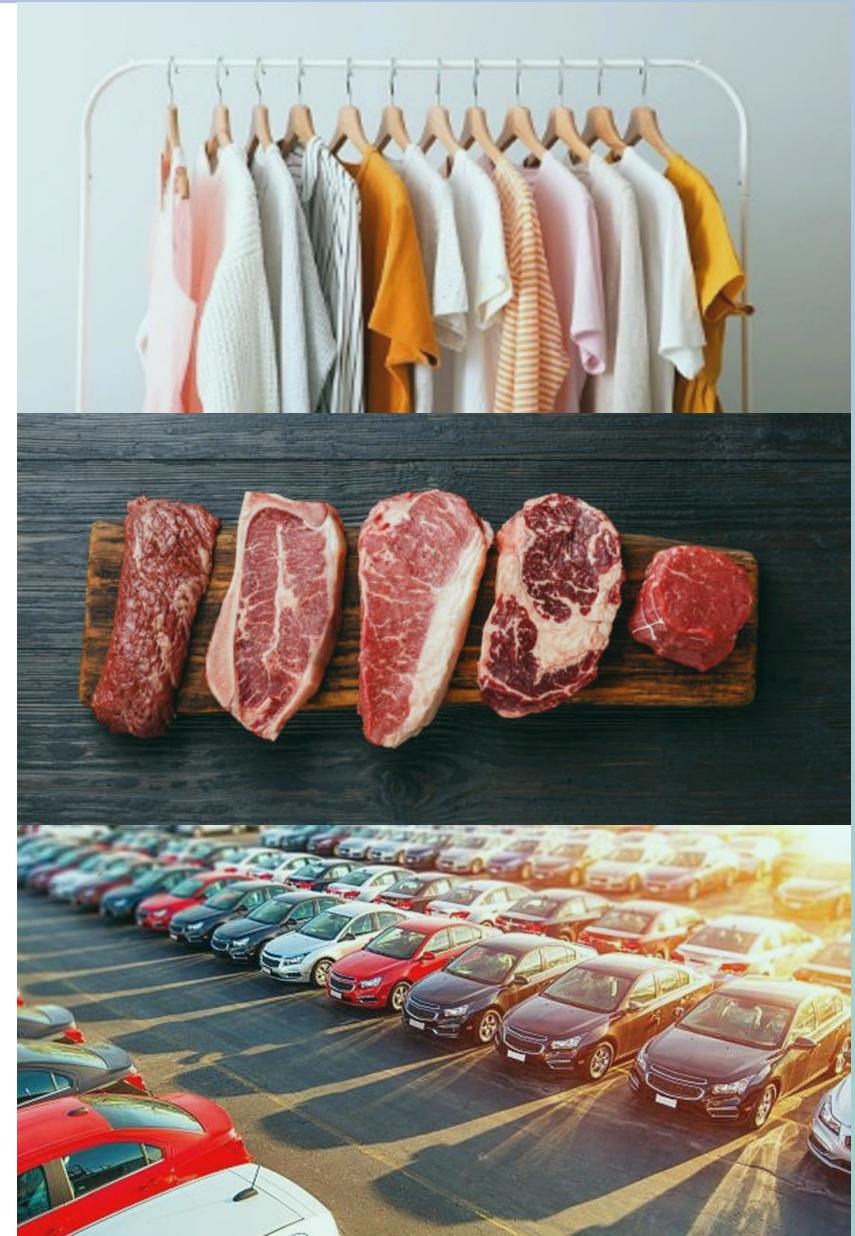


With each incremental increase in average global temperature beyond 1.5°C, the projected environmental realities are increasingly more severe and threatening to human well-being.



Individual Consumption

- **Unsustainable levels of consumption** of GHG-producing goods and services (e.g., meat/dairy, heating/cooling, clothing, cars) widely cited as a major contributor to climate change
- **Norm interventions** have been commonly used to promote the adoption of pro-environmental behaviors
 - Not yet tested on reducing consumption



Purpose of the Current Project

Build off previous work by:

1. Developing **novel norm-intervention conditions** that address potential areas for progress in previous studies
2. Testing the effectiveness of these norm interventions on **consumption behaviors**



Review of Currently Used Norm Interventions

- **Descriptive norms:** people's perception of the behaviors *most* people engage in
- **Injunctive norms:** people's perception of the behaviors *most* people think others should engage in

An Example

Schultz et al. (2008):

- **Descriptive Norm:**

"Nearly 75% of hotel guests choose to reuse their towels each day. To support our guests who want to conserve, this hotel has initiated a conservation program. Please reuse the towels."

- **Injunctive Norm:**

"Many of our guests have expressed to us their approval of conserving energy. Because so many guests value conservation and are in the habit of conserving, this hotel has initiated a conservation program. Please reuse the towels."

- **Combined Descriptive & Injunctive Norm**

- **Control:**

"This hotel has initiated a conservation program. Please reuse the towels.



Current norm interventions

Strengths



Very commonly used



Positive overall effect on pro-environmental outcomes



Low-cost and easy to implement

Weaknesses



Inconsistent effects



Small effect sizes often found

3 Methodological Areas for Progress

- **Suggestion 1.** Broaden range of norm-intervention conditions
- **Suggestion 2.** Undermine motivation to engage in environmentally *unsustainable* behaviors
- **Suggestion 3.** Align intervention with values of a broader audience

Suggestion 1:

Broaden range of norm-intervention conditions

Norms

- **Norms** are rules that exist in groups regarding which behaviors are *appropriate*, or *inappropriate*, to engage in where, importantly, these rules are accompanied with and upheld by people's expectations that the rules are endorsed by other members of their group

Current norm interventions

- Most commonly manipulate:
 - Descriptive norms
 - Injunctive norms
- Broader range of potential norm types:
 - Descriptive norms
 - Conventions
 - Social norms
 - Legal norms
 - Moral norms

Rules for behaving a certain way, and...

Descriptive Norms

- People perceive these rules as being commonly followed, and
- Expect a sufficient number of other people to conform with the rule
- **Example:** Following a fashion trend

Conventions

- People perceive these rules as being commonly followed, and
- Mutually expect one another to follow
- Achieve a coordination function
- **Example:** Raising sign at an auction to place a bid

Social Norms

- People perceive these rules as being commonly followed, and
- Believe that others *strongly prefer* one to comply
- Often go against self-interest
- **Example:** Waiting for everyone to be served before eating

Legal Norms

- Established by a third-party body with the power to create and enforce standards for behavior
- Legal sanctions
- **Example:** The rule against drinking while driving

Moral Norms

- People perceive these rules as being commonly followed, and
- Believe that others *strongly prefer* one to comply
- These rules are moralized
- **Example:** The rule against killing

Suggestion 1: Current Project

- Develop novel norm-intervention conditions that capture each norm type
- Test their effectiveness on reducing people's consumption intentions and behaviors



Suggestion 2:

Undermine motivation to engage in environmentally *unsustainable* behaviors

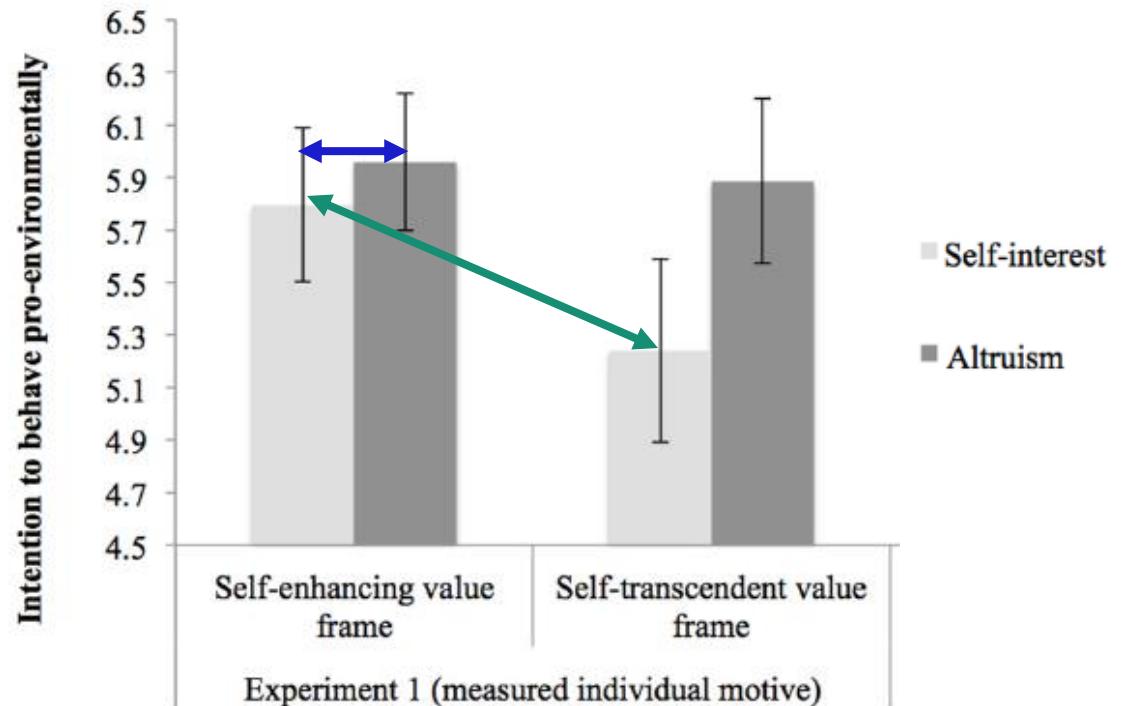
Current norm interventions

- Typical norm interventions may be creating competing motivations:
 - Pressure to “do one’s part” or to “do what is typical/expected”
 - Desire to fulfill one’s own self-interest
- Don’t address what motivates people to engage in an environmentally unfriendly behavior in the first place
- Addition of a **self-enhancing framing** prior to the norm intervention may mitigate this conflict

Self-enhancing Framing

In De Dominicis, Schultz, & Bonaiuto (2017), framing a pro-environmental behavior (reducing energy consumption) as helping one to achieve self-interested goals broadened the appeal of adopting the behavior.

- **Self-enhancing framing:** Conserving energy will reduce your monthly bill
- **Self-transcendent framing:** Conserving energy will reduce your greenhouse gas emissions



Suggestion 2: Current Project

- Identify self-interested goals underlying motivation to consume
- Use self-enhancing framing to align a new pro-environmental behavior with these goals



Motivations Underlying Consumption

- Past studies have found that endorsement of consumerism and materialism are associated with their desire to:
 - Fit in with others
 - Avoid social punishment
 - Gain or display status
- A **self-enhancing framing** can be used to reframe *reducing consumption* as a means for achieving important social goals
 - Example: informing participants that their peers are more impressed or assign greater status to people who *refrain* from overconsuming

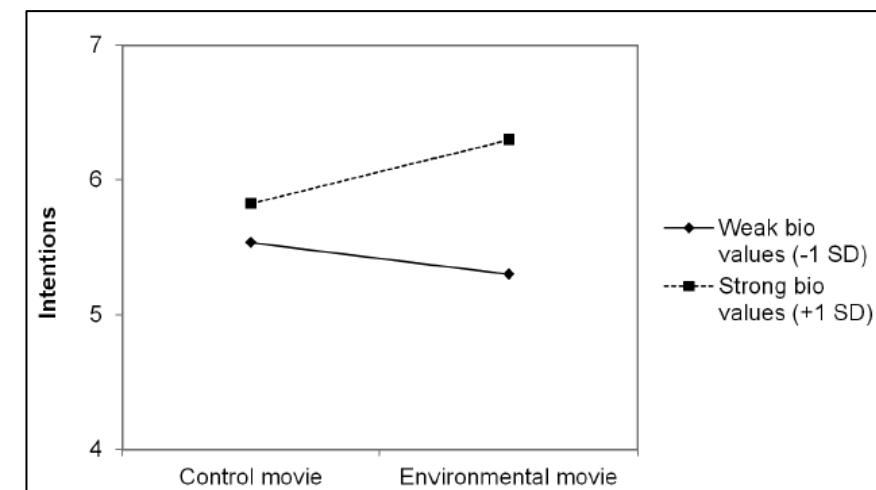
Suggestion 3:

Align interventions with values of a broader audience

Current norm interventions

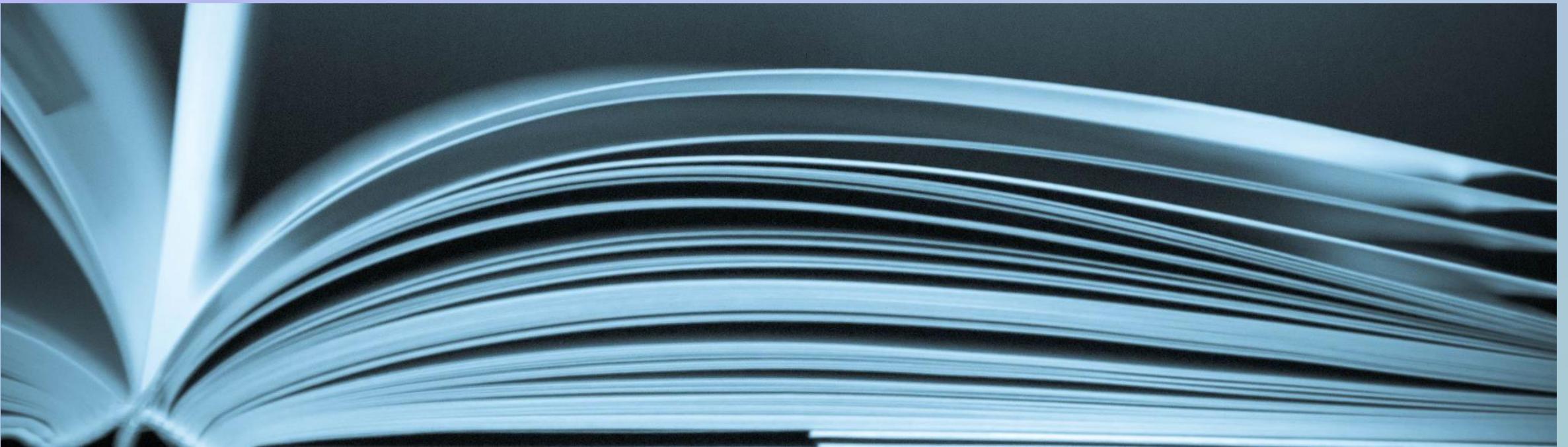
- May appeal most strongly to those who endorse pro-environmental and altruistic values
- **Biospheric and self-transcendence values** positively predict willingness to engage in pro-environmental behaviors
(Ghazali et al., 2019; Hansla et al., 2008; Liobikiene & Juknys, 2016; Nordlund & Garvill, 2002, 2003; Poortinga et al., 2004)

- Bolderdijk et al. (2013) implemented an informational intervention aimed at reducing water bottle use
 - **Environmental movie:** Informed participants about negative environmental consequences of using water bottles
 - **Control movie:** A movie that did not mention water bottles
 - **Results:** Environmental movie ineffective among people weaker on biospheric values



Suggestion 3: Current Project

- Examine whether pro-environmental values moderate the effect of each norm-intervention condition, and
- Whether the moderating effect is weaker when a self-enhancing framing, compared to a pro-environmental framing, is used



Preliminary Study 1

- **Purpose:**

1. Empirically test theoretically-proposed norm types
2. Inform the language of novel norm-intervention conditions (Study 2)

Preliminary Study 1

- **Research Design:**

- **Area of consumption:** Clothing consumption (accessible to college students)

“Think of the last clothing item you can remember getting (either through purchasing it or other means). If you have trouble remembering the last one, think of the last clothing item you can remember getting. Describe it in as much detail as you can.”

- Then, asked to indicate the degree to which several norm-related statements applied

Norm Items

Norm Type	Sample Item
Descriptive Norm	"This clothing item, or clothing similar to it, is worn by many of my peers."
Convention	"Other people expect me to wear clothing similar to the clothing item that I got."
Social Norm	"People would judge me if I failed to wear clothing similar to the clothing item that I got."
Moral Norm	"I feel a moral obligation to wear clothing similar to the clothing item that I got."

Preliminary Study 1

- **Participants:**
 - 492 participants from the UO Psychology/Linguistics Human Subjects Pool
 - $M_{age} = 19.69 (SD = 2.35)$
 - 66% female (66% female, 31% male, 3% other)
 - 66% white, non-Hispanic (12% Asian, 11% Hispanic, Latinx or Spanish origin, 11% other ethnicity)

Preliminary Study 1

- **Results**

- Analyzed norm items using Principal Components Analysis
 - Oblimin rotation
 - Extraction of seven components
- Resulted in the following components:
 - Social Norm (formal)
 - Social Norm (informal)
 - Descriptive Norm/Convention
 - Moral Norm
 - (Not discussed: Personal Rule, Non-norm/Anti-norm, Frugality)

Social Norm (Formal)

I got this clothing item for **events** that I would feel **guilty or shameful** at if I did not wear something similar to the clothing item that I got (e.g., for work, a wedding, a job interview, etc.).

I got this clothing item for a specific **event** that I want to make a **good impression** on others at.

I got this clothing item for **events** that I would **feel impolite** at if I did not wear something similar to the clothing item that I got (e.g., for work, a wedding, a job interview, etc.).

Wearing this clothing item will help me **successfully achieve** one or more of my **goals** (i.e., career, academic, financial).

I feel a **moral obligation** to wear clothing similar to the clothing item that I got.

Social Norm (Informal)

Even if people expect me to wear this type of clothing, no one would **judge me if I failed to wear clothing similar** to the clothing item that I got. (r)

There is no **strict expectation** from my peers for me to wear clothing similar to the clothing item that I got. (r)

People would **judge me** if I failed to wear clothing similar to the clothing item that I got.

Failing to wear this clothing item or clothing similar to it would **go against my principles**.

People would tell me that I am failing to dress appropriately if I failed to wear clothing similar to the clothing item that I got.

Descriptive Norm / Convention

This clothing item, or clothing similar to it, is **worn by many of my peers**.

This clothing item, or clothing similar to it, is **in style** right now.

For a **long time**, people will wear clothing similar to the style of the clothing item that I got.

Other people expect me to wear clothing similar to the clothing item that I got.

I expect my peers to wear clothing similar to the clothing item that I got.

This clothing item, or clothing similar to it, is **unusual** compared to what other people wear. (r)

Moral Norm

I think that getting this clothing item or clothing similar to it is **good for the economy**.

I got this clothing item **to support companies with ethical positions** that I agree with.

I was unexpectedly given this clothing item as a **gift**.

Informing the Language of Study 2

- Descriptive Norm:
 - Describe a behavioral rule regarding a way of dressing that is widely followed and fits with current trends
- Convention
 - Describe a behavioral rule regarding a way of dressing that is widely followed and helps people to coordinate their behavior with one another
- Social Norm (formal):
 - Describe a behavioral rule regarding how it is appropriate, or inappropriate, to dress for a specific event
- Social Norm (informal):
 - Describe a behavioral rule regarding what type of clothing will receive, or avoid, judgments from others

Informing the Language of Study 2

- Legal Norm:
 - Describe a behavioral rule established by an organizing body with the power to create and enforce sanctions that affects ways of dressing
- Moral Norm:
 - Describe a behavioral rule regarding a way of dressing that fits with broad, moralized values

Proposed Study 2

- **Purpose:**

1. Develop novel norm-intervention conditions, and
2. Test their effectiveness at reducing consumption behaviors



Proposed Design

- **IV1: Framing condition**
 - Control
 - Pro-environmental framing
 - Self-enhancing framing
- **IV2: Norm-intervention condition**
 - Control
 - Descriptive Norm
 - Convention
 - Social Norm (informal)
 - Social Norm (formal)
 - Legal Norm
 - Moral Norm
- **DV1 (Intentions):** Intentions to reduce new clothing item purchases (e.g., "I plan on getting brand new clothes this year that fit with current trends." (r))
- **DV2 (Behavior):** A choice of whether to enter oneself into a raffle for a \$100 gift card to spend on new clothing items or a \$100 gift card to spend on secondhand/thrifted clothing items.

Framing Conditions

- **Pro-environmental Framing:**

- "The clothing industry produces substantial greenhouse gas emissions that contribute to the ongoing climate change crisis. Buying or acquiring new clothing items contributes to the need for the clothing industry to produce more, resulting in more GHG emissions. Reducing the amount of brand new clothing items that you purchase or acquire is one way that you can reduce demand for clothing production."

- **Self-enhancing Framing:**

- "Students at UO report feeling unimpressed by seeing people wear brand new clothing items. Rather, there is growing positive sentiment toward reducing the number of clothing items one has and toward getting quality, long-lasting clothing items from secondhand shops instead."

- **Control Framing:**

- Participants will not be shown any framing message.

Norm-Intervention Conditions

- **Control Condition:**
 - No additional information to the framing message.
- **Descriptive Norm:**
 - "There is a trend such that a majority of other University of Oregon students have reduced the number of brand new clothing items that they purchase. Rather, it appears to be more in style and normal to wear clothing that is bought secondhand."
- **Convention:**
 - "A majority of other University of Oregon students have reduced the number of brand new clothing items that they purchase in a coordinated effort to help reduce the amount of clothing waste that the community has to handle. Rather, it appears that most UO students are buying clothes secondhand."
- **Social Norm (informal):**
 - "A majority of other University of Oregon students have reduced the number of brand new clothing items that they purchase to avoid judgment from their peers. It appears that most UO students believe that people should buy clothes secondhand instead."

Norm-Intervention Conditions

- **Social Norm (formal):**

"A majority of other University of Oregon students believe that it should not be required to buy brand new clothing items just to wear for special events, such as weddings, job interviews, or graduation. Rather, it appears that most UO students believe that it should be acceptable to buy clothes secondhand for these events."

- **Legal Norm:**

"A governmental policy has been applied that makes brand new clothing purchases more expensive for University of Oregon students by requiring people to pay an additional tax on brand new clothing item purchases. The tax does not apply to clothing that is bought secondhand. The consequence for not paying the additional tax is a fine."

- **Moral Norm:**

"A majority of other University of Oregon students find it morally wrong to *not* reduce the number of brand new clothing items that one purchases. Rather, most UO students think it is more ethical to buy clothing secondhand."

Values (Steg et al., 2012)

- Indicate how important each of the following values are as a guiding principle in your life on a scale from -1 (*opposed to my principles*), 0 (*not important*) to 7 (*extremely important*).

- **Biospheric Values**

- Respecting the Earth
- Unity with nature
- Protecting the environment
- Preventing pollution

- **Altruistic Values**

- Equality
- A world at peace
- Social justice
- Helpful

- **Egoistic Values**

- Social power
- Wealth
- Authority
- Being influential
- Ambition

- **Hedonic Values**

- Pleasures
- Enjoying life
- Gratification for oneself

Hypotheses

H1: Clothing consumption intentions and behaviors will be lower in the **self-enhancing framing condition** than the pro-environmental framing and control conditions.

H2: Clothing consumption intentions and behaviors will be lower in each of the **norm-intervention conditions** compared to the control condition.

H3: There will be an interaction between norm-intervention and framing condition such that the effect of the norm-intervention condition will be stronger when paired with a **self-enhancing framing** compared to a pro-environmental framing.

H4: When a pro-environmental framing is used, **pro-environmental values will moderate** the effect of each norm-intervention condition. When a self-enhancing framing is used, there will be **no moderating effect** of pro-environmental values.

		IV1: Framing		
IV2: Norm Condition		Control	Pro-Environmental	Self-Enhancing
	Control	Control only	Pro-environmental only	Self-Enhancing only
	Descriptive Norm	Descriptive Norm	PE + Descriptive Norm	SE + Descriptive Norm
	Convention	Convention	PE + Convention	SE + Convention
	Social Norm (Informal)	Social Norm (informal)	PE + Social Norm (informal)	SE + Social Norm (informal)
	Social Norm (Formal)	Social Norm (formal)	PE + Social Norm (formal)	SE + Social Norm (formal)
	Legal Norm	Legal Norm	PE + Legal Norm	SE + Legal Norm
	Moral Norm	Moral Norm	PE + Moral Norm	SE + Moral Norm

Exploratory RQ: Which combination of framing & norm-intervention condition produce the strongest effect on clothing consumption intentions and behaviors?

Proposed Analysis

- The 3x7 experimental conditions will be examined using a **regression analysis**:
 - Main effect of framing
 - Main effect of norm-intervention condition
 - Post-hoc tests using Tukey's HSD
 - Interaction between framing and norm-intervention condition
 - Unpacked using simple slopes analysis
 - 3-way interaction between framing, norm-intervention condition, and values
 - Unpacked using simple slopes analysis
 - Using planned contrasts to compare each combination of framing- and norm-intervention condition to the control condition

Brainstorming Conditions

- **3x7 = 21 conditions (original design)**

- **IV1: Framing condition (3)**

- Control
- Pro-environmental framing
- Self-enhancing framing

- **IV2: Norm-intervention condition (7)**

- Control
- Descriptive Norm
- Convention
- Social Norm (informal)
- Social Norm (formal)
- Legal Norm
- Moral Norm

IV1: Framing				
IV2: Norm Condition		Control	Pro-Environmental	Self-Enhancing
	Control	Control only	Pro-environmental only	Self-Enhancing only
	Descriptive Norm	Descriptive Norm	PE + Descriptive Norm	SE + Descriptive Norm
	Convention	Convention	PE + Convention	SE + Convention
	Social Norm (Informal)	Social Norm (informal)	PE + Social Norm (informal)	SE + Social Norm (informal)
	Social Norm (Formal)	Social Norm (formal)	PE + Social Norm (formal)	SE + Social Norm (formal)
	Legal Norm	Legal Norm	PE + Legal Norm	SE + Legal Norm
Moral Norm	Moral Norm	PE + Moral Norm	SE + Moral Norm	

Brainstorming Conditions

- **3x6 = 18 conditions**
- **IV1: Framing condition (3)**

- Control
- Pro-environmental framing
- Self-enhancing framing

- **IV2: Norm-intervention condition (6)**
- Control
- Descriptive Norm
- Convention
- Social Norm (combined formal & informal)
- Legal Norm
- Moral Norm

IV1: Framing				
IV2: Norm Condition	Control	Control	Pro-Environmental	Self-Enhancing
	Control	Control only	Pro-environmental only	Self-Enhancing only
	Descriptive Norm	Descriptive Norm	PE + Descriptive Norm	SE + Descriptive Norm
	Convention	Convention	PE + Convention	SE + Convention
	Social Norm	Social Norm	PE + Social Norm	SE + Social Norm
	Legal Norm	Legal Norm	PE + Legal Norm	SE + Legal Norm
	Moral Norm	Moral Norm	PE + Moral Norm	SE + Moral Norm

Brainstorming Conditions

- **2x6 = 12 conditions**
 - 11 codes (estimated parameters)
- **IV1: Framing condition (2)**
 - Pro-environmental framing
 - Self-enhancing framing
- **IV2: Norm-intervention condition (6)**
 - Control
 - Descriptive Norm
 - Convention
 - Social Norm (combined formal & informal)
 - Legal Norm
 - Moral Norm
- **Sample Size**
 - $500/12 = 42$
 - $600/12 = 50$
 - $750/12 = 62$
 - $900/12 = 75$

		IV1: Framing	
		Pro-Environmental	Self-Enhancing
IV2: Norm Condition	Control	Pro-environmental only	Self-Enhancing only
	Descriptive Norm	PE + Descriptive Norm	SE + Descriptive Norm
	Convention	PE + Convention	SE + Convention
	Social Norm	PE + Social Norm	SE + Social Norm
	Legal Norm	PE + Legal Norm	SE + Legal Norm
	Moral Norm	PE + Moral Norm	SE + Moral Norm

H1: Clothing consumption intentions and behaviors will be lower in the **self-enhancing framing condition** than the pro-environmental framing and control conditions.

H3: There will be an interaction between norm-intervention and framing condition such that the effect of the norm-intervention condition will be stronger when paired with a **self-enhancing framing** compared to a pro-environmental framing.

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