



**Four Areas for Progress on
Norm Interventions:
An Analysis of a Social Psychology
Approach to Improving
Pro-environmental Behaviors**

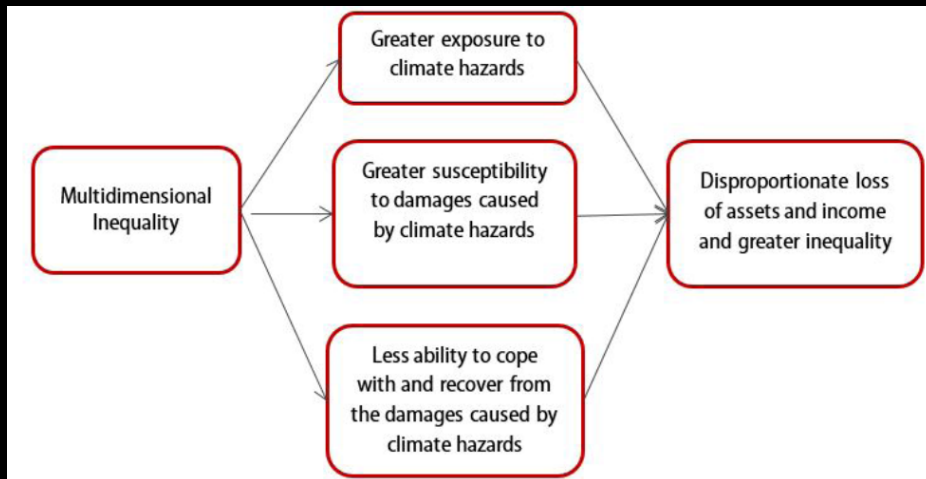
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The Current Climate Crisis



Purpose of the Current Project
Investigate how **psychological** interventions can best be applied to address the climate crisis.

The Physical and Social Threat of Climate Change



Physical threats

- Rising surface temperatures
- Rising sea levels
- Extreme weather conditions

Threat to Social Equity

- Environmental issues especially driven by behavior of most wealthy
- Those with access to the fewest resources will have
 - Greater exposure
 - Greater susceptibility to damages
 - Less ability to recover from environmental disasters

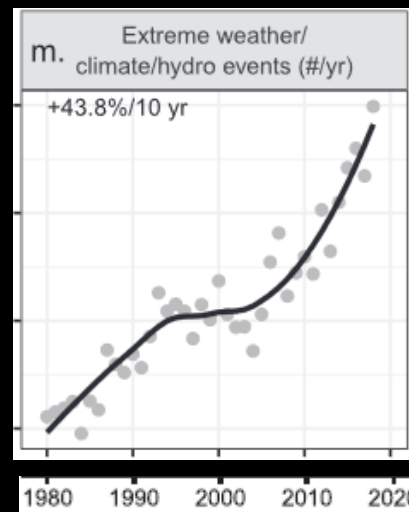
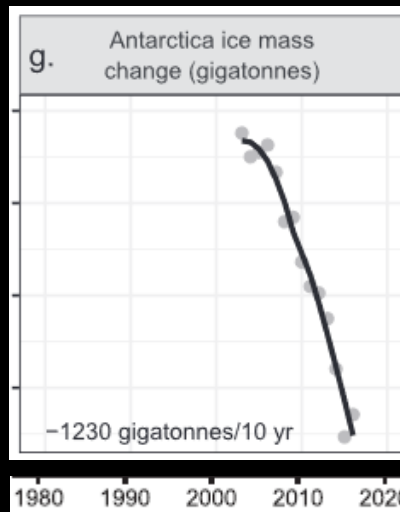
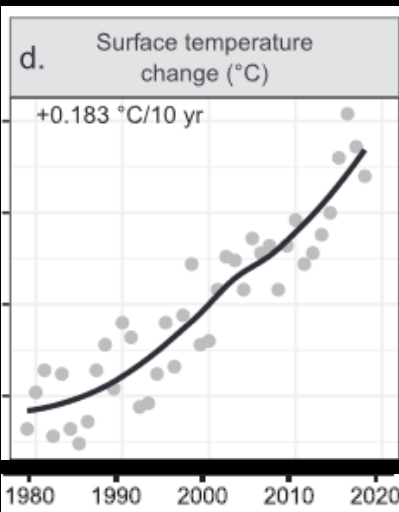
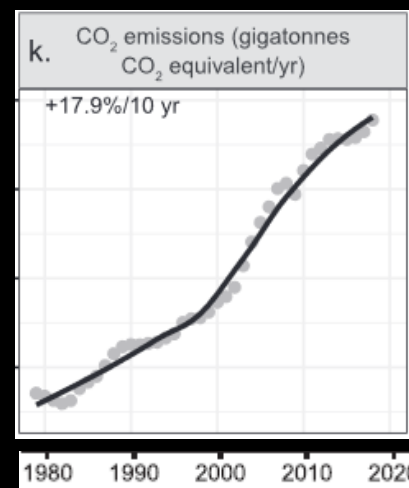
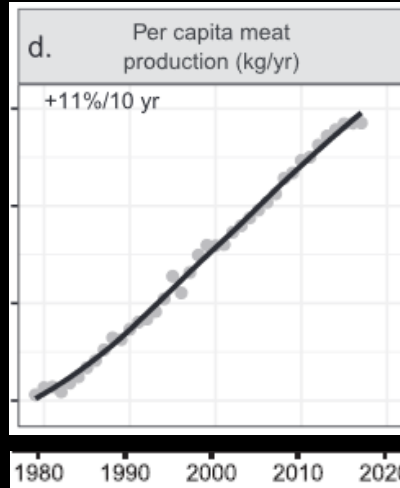
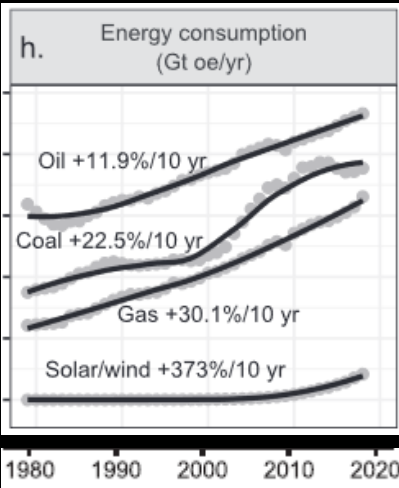
The Unheard Call to Action



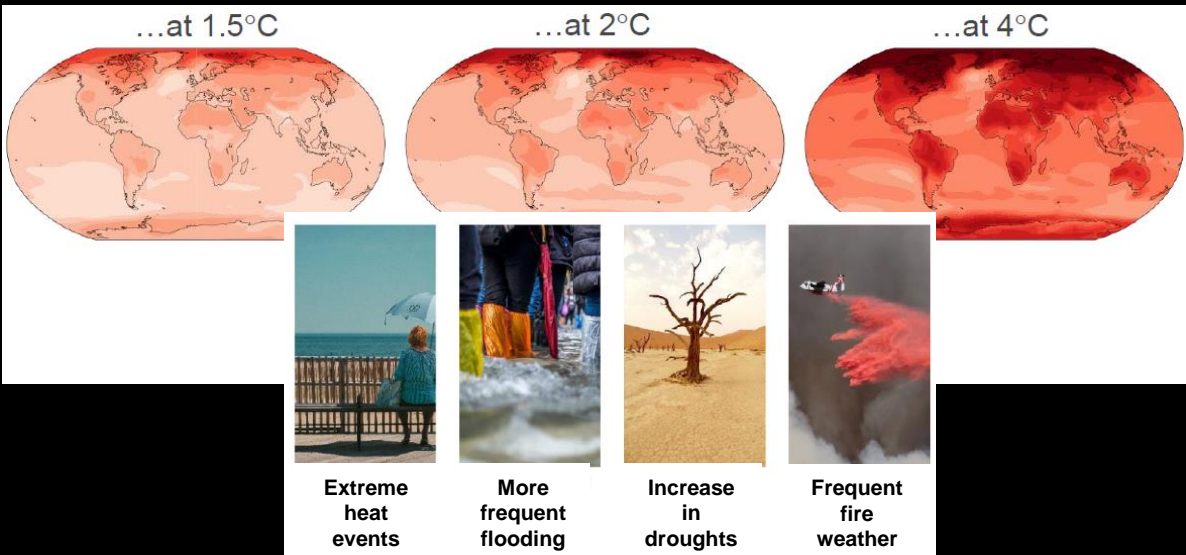
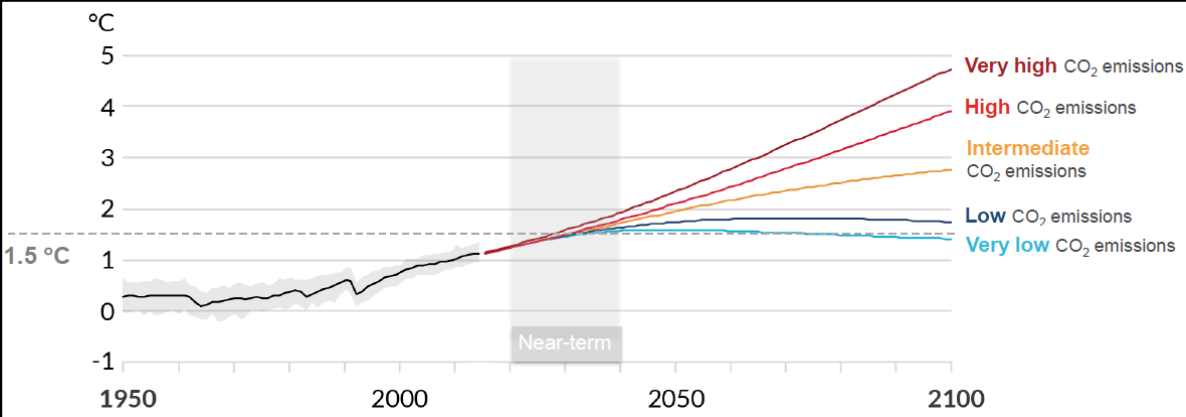
The First World Climate Conference took place in 1979

- Called on all nations to immediately enact strategies for reducing humans' environmental impact

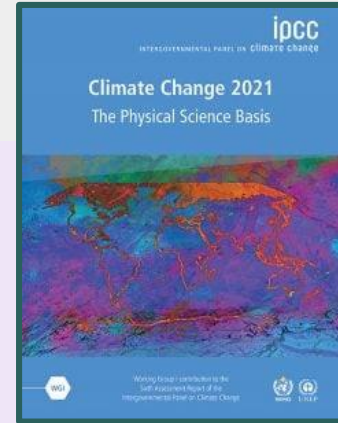
- Human activities that contribute to climate issues have continued to rise
 - Energy & meat production
 - CO₂ emissions
- Along with climate change processes
 - Average surface temperature
 - Loss of ice mass
 - Extreme weather events



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.

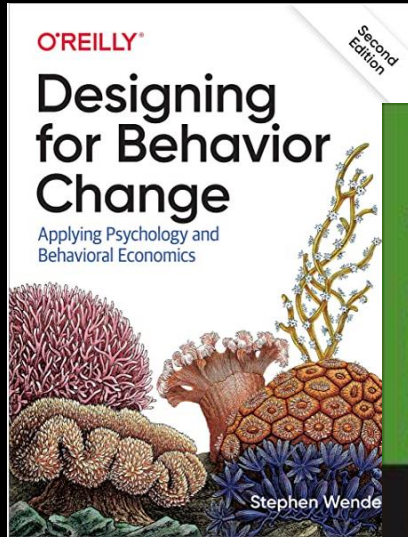


In the IPCC 2021 report:

- Possible to limit rise in global temperatures to 1.5°C
- Must reach zero human emissions of GHGs within the next 20-30 years

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.

A Social Psychology Approach



Social Norms and Pro-environmental Behavior: A Review of the Evidence

Katherine Farrow ^a , Gilles Grolleau ^{a, b}, Lisette Ibanez ^a

Social psychologists uniquely positioned to help address humanity's impact on the environment

- Research how to change people's behaviors

Norm interventions a common approach used in social psychology to encourage people to adopt pro-environmental behaviors.

Norm Interventions



Experimentally manipulate existing norms about environmentally-relevant behaviors

- **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

Environmentally-Relevant Behaviors



Unsustainable Consumption

The acquisition and use of goods and services that produce negative environmental impacts at levels not sustainable long-term by the planet.

The Purpose of the Current Project

- Review the literature on norm interventions used for promoting pro-environmental outcomes
- Analyze strengths and areas for potential progress in previous studies' methodologies
- Propose directions for future studies

Currently used norm interventions...

- 1) Restrict the range of types of norms
- 2) Fail to address motivations
- 3) Conflict with self-interest
- 4) Assume people endorse pro-environmental values

**Four
Areas
for
Potential
Progress**

An Overview of Currently Used Norm Interventions

Why use norm interventions?

Strengths of using norm interventions

- Have an overall, positive effect on pro-environmental behaviors
- Low-cost
- Easy to implement to large audiences

Considerations for future use

- Sometimes ineffective
- Small effect sizes often found
- Effect varies depending on type of norm
- Limited samples from outside of the United States and Europe

Overview of Norm Intervention Studies

Effect of norm interventions on towel reuse behavior

Goldstein et al. (2008)

Sample: Hotel guests in the US

Standard environmental message

- “Help save the environment. You can show your respect for nature and help save the environment by reusing your towels during your stay”

Descriptive norm

- “Join your fellow guests in helping to save the environment. **Almost 75% of guests who are asked to participate in our new resource savings program do help by using their towels more than once.** You can join your fellow guests in this program to help save the environment by reusing your towels during your stay.”

Results

- **Descriptive Norm > Standard environmental message**

Overview of Norm Intervention Studies

Schultz et al. (2008)

Sample: Hotel guests in the US

Low/High Descriptive Norm

- “Nearly [25% / 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.”

Low/High Injunctive Norm

- “[Some / 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: High DN and High IN**

Control:

- “This hotel has initiated a conservation program. Please reuse the towels.”


Results

- **Combined > Control**

Bohner and Schlüter (2014)

Sample: Hotel guests in Germany

Standard Environmental Message

-  “Help to save the environment. Every day we clean a great number of towels, many of them are unused. Please help us to protect the environment. You can join us in this program to help save the environment by reusing your towel during your stay.”

Descriptive Norm (Hotel/Room)

- “Join your fellow guests in helping to save the environment ... 75% of the [guests / guests who stayed in this room] participated in our new resource savings program by using their towel more than once. You can join your fellow guests in this program to help save the environment by reusing your towel during your stay.”

Results

- **Standard Condition > Descriptive Norm**

Overview of Norm Intervention Studies

Effect of norm interventions on conservation behaviors

Lapinski et al. (2007)

Sample: Midwestern University in the US

Low-prevalence

- “Only **3% of people** in the university community took steps to conserve water in the year prior to the study”

High-prevalence (Descriptive Norm)

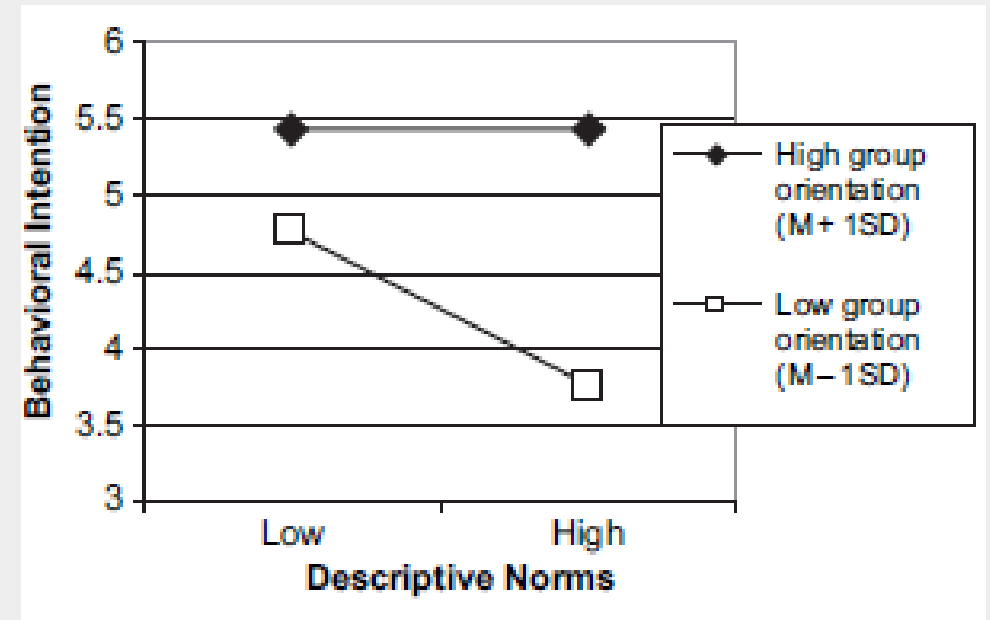
- “About **90% of people** reported taking steps to conserve in the year prior to the study.”

Group Orientation

- **The degree to which individuals prioritized group goals over individual goals** (e.g., “I usually sacrifice my self-interest for the benefit of the group”)

Results

- No significant main effect of norm condition
- Significant interaction between norm condition and group orientation



Area 1: Currently Used Norm Interventions are Too Restrictive in the Range of Types of Norms Used

Defining Norms

A **definition** of norms informed by the work of the well-known sociologist Cristina Bicchieri:

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

Differs from the common definition of norms in that it...

- Emphasizes the importance that people's perceptions of others' beliefs about a behavioral rule play in upholding the norm itself.

Types of Norms

Common distinction between types of norms in social psychology:

- Descriptive Norms
- Injunctive Norms

Efficacy of norm interventions varies depending on type of norm (Farrow et al., 2017)

- 31 of 39 studies that manipulated descriptive norms significantly improved pro-environmental outcomes
- 12 of 28 studies that manipulated injunctive norms did the same

Worth distinguishing between & testing broader range of norms

- Work from sociology, philosophy, and political science provides theory-informed definitions of:
 - Descriptive norms, conventions, social norms, legal norms, moral norms

Differentiating Types of Norms

Rules for behaving a certain way in a particular situation, 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 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

Personal Norms or Personal Rules?

The term 'personal norms' is often used in the social psychology literature

- Most often defined as **internalized self-expectations about one's behavior** that often manifest in feelings of moral obligation.

Based on the definition of norms I am using...

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

I would not attach the label of 'norm' to behavioral rules that are self-derived and self-enforced.

- Not accompanied with and upheld by people's expectations that the rules are endorsed by others

Personal Norms or Personal Rules?

Instead, I would call these **personal rules**

- Definition: An idiosyncratic, internalized rule for behavior that one sets for oneself that is followed independently of what others do
- Example: Setting a rule for oneself to exercise three times a week
- Importantly, empirical work suggests that personal rules have a very strong association with people's behaviors.

**Area 2: Currently Used Norm Interventions Fail to Address
Motivations to Engage in Environmentally *Un*friendly Behaviors**

How do norms promote behavioral change?

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

Informational motivation

- Descriptive-norm messages communicate which behaviors are most effective and adaptive to a particular situation

Normative motivation

- Injunctive-norm messages communicate which behaviors will receive social punishment and social rewards

Environmentally unfriendly behaviors unaddressed

Currently used norm interventions could be creating competing motivations:

- Normative appeals motivate people to behave more pro-environmentally,
- Self-focused reasons motivate people to continue environmentally unfriendly behaviors

To reduce this tension, future norm interventions could address the factors underlying environmentally unfriendly behaviors.

What motivates people to consume
in the first place?

Psychological Factors Associated with Materialism & Consumption

Can't buy me friendship? Peer rejection and adolescent materialism: Implicit self-esteem as a mediator

Jiang Jiang ^{a,*}, Yan Zhang ^{a,b,1,2}, Yannan Ke ^a, Skyler T. Hawk ^b, Hui Qiu ^a

The Commodification of Self-Esteem: Branding and British Teenagers

Katja Jezkova Isaksen and Stuart Roper
Manchester Business School

From Labeling Possessions to Possessing Labels: Ridicule and Socialization among Adolescents

DAVID B. WOOTEN*

Social comparison, personal relative deprivation, and materialism

Hyunji Kim ^{1*}, Mitchell J. Callan ¹, Ana I. Gheorghiu ¹ and William J. Matthews ²

Consumer Preference for Status Symbolism of Clothing: The Case of the Czech Republic

Elena Millan
University of Reading

Banwari Mittal
Northern Kentucky University

Protecting the self through consumption: Status goods as affirmational commodities

Niro Sivanathan ^a, Nathan C. Pettit ^b

Predictors of Consumption & Materialism:

- Peer rejection
- Self-esteem
- Social acceptance
- Social comparison
- Perceived relative deprivation
- Seeking higher status

Note: Majority of studies conducted in the US, Europe, and China

Area 3: Currently Used Norm Interventions Conflict with Self-Interest

Currently Used Norm Interventions Conflict with Self-Interest

Currently used norm interventions may rely on compelling people to be pro-environmental at the expense of their own self-interest.

“The choice between acting to protect the environment or not has often been defined as a social dilemma because pro-environmental behavior may require the individual to restrain egoistic tendencies for the benefit of others.”
(Nordlund & Garvill, 2003)

Adopting more environmentally friendly behaviors may be interpreted as having to

- Sacrifice benefits for the **self** in the **short-term**
 - e.g., by sacrificing immediate wants or conveniences
- To gain **long-term benefits** for **others**
 - e.g., an environment that sustains life for future generations

Values and Pro-Environmental Outcomes

Degree to which people perceive they have to self-sacrifice in order to adopt a more environmentally friendly behavior not typically measured.

However, researchers have often studied the relationships between values and pro-environmental outcomes:

- **Biospheric Values**
 - Concern for the environment
- **Self-transcendence Values**
 - Concern for greater principles and others
- **Self-enhancement Values**
 - Concern for self-interested goals

Values and Pro-Environmental Outcomes

- **Biospheric values positively predicted:**
 - Acceptability of implementing energy saving habits
(Poortinga et al., 2004)
- **Self-transcendence values positively predicted:**
 - Willingness to reduce personal car use
(Nordlung & Garvill, 2003)
 - Willingness to pay for green electricity
(Hansla et al., 2008)
 - Engagement in a variety of pro-environmental behaviors
(Ghazali et al., 2019, Liobikiene & Juknys, 2016; Nordlund & Garvill, 2002)
- **Self-enhancement values negatively predicted:**
 - Acceptability of implementing energy saving habits
(Poortinga et al., 2004)
 - Engagement in a variety of pro-environmental behaviors
(Nordlund & Garvill, 2002)

When presented with a pro-environmental behavior people may, by default, associate them with having to put the needs of others before the desires of oneself.

Framing Interventions to Align with Self-Interest

- De Dominicis, Schultz, & Bonaiuto (2017) experimentally manipulated a pro-environmental behavior as being either:
- **Self-enhancing** (e.g., conserving energy will reduce your monthly bill)
 - **Self-transcendent** (e.g., conserving energy will reduce your greenhouse gas emissions)



**Area 4: Currently Used Norm Interventions May Assume
People Endorse Pro-environmental Values**

Not everyone endorses pro-environmental values

There's natural variation in the degree to which people endorse pro-environmental values

(de Groot & Steg, 2007; Ghazali et al., 2018; Kim & Seock, 2019; Poortinga et al., 2004)

- Appeals to behave more pro-environmentally more effective among people who endorse pro-environmental values

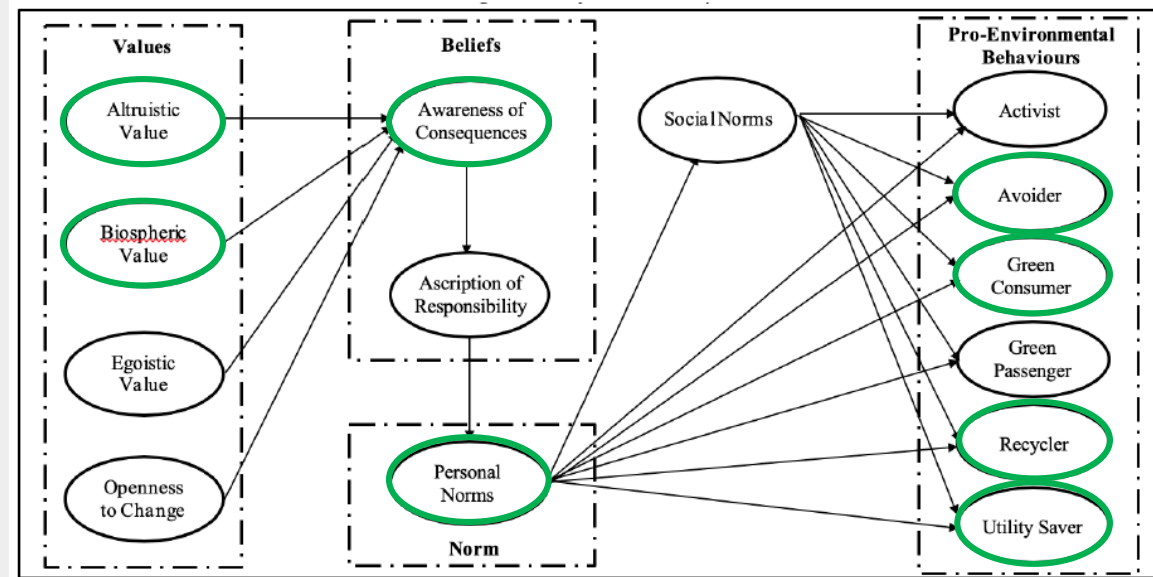
Value-Belief-Norm Theory proposes that social movements are successful to the extent they are able to create an **internalized sense of obligation**

- Precipitated by perceiving that the things one values are being threatened
- Norm interventions may be especially effective among people with pro-environmental values
 - Bring attention to threats to the environment and ways to reduce the threat

Pro-environmental values predict internalized sense of obligation

Ghazali et al. (2019) found that

- **Altruistic** and **biospheric values** positively predicted **awareness of environmental goals being threatened** (awareness of consequences)
- Which positively predicted **internalized sense of obligation** to act toward achieving pro-environmental outcomes (personal norms)
- Which positively predicted **engagement in a variety of pro-environmental behaviors**



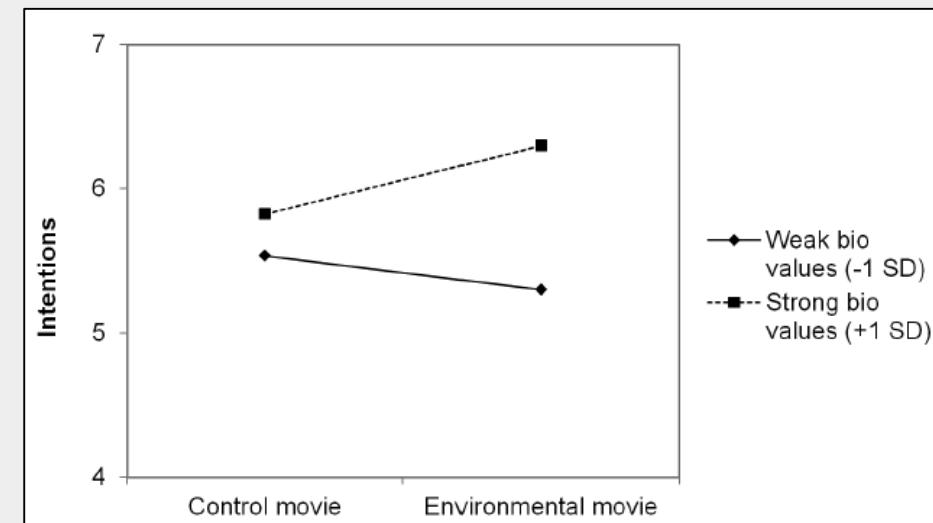
The moderating effect of pro-environmental values

- Correlational evidence from Ghazali et al. (2019) consistent with possibility that norm interventions could have a weaker effect among people lower on pro-environmental values
- Values potentially important moderator of the effect of norm interventions on pro-environmental outcomes
 - Often not included in norm intervention studies
- Investigated as a moderator in a study that implemented an informational intervention

The moderating effect of pro-environmental values

Bolderdijk et al. (2013) implemented an informational intervention aimed at reducing water bottle use

- **Environmental movie:** Informed participants about negative 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



- Suggests that interventions aimed at promoting pro-environmental behaviors may have weaker effects among people who weakly endorse pro-environmental values

In Conclusion

Future Research Directions

1. Construct norm interventions for a broader range of norms
 - Theory-informed definitions of **descriptive norms, conventions, social norms, legal norms, and moral norms**
2. Construct norm interventions that target motivations to engage in environmentally unsustainable behaviors
 - Behaviors like unsustainable consumption motivated by social goals
3. Frame norm interventions to be consistent with people's self-interest and to appeal to the values of a broader audience
 - Self-enhancing framings persuasive both to people with selfless and self-enhancing values

Areas for Potential Progress

- 1) Restrict the range of types of norms
- 2) Fail to address motivations
- 3) Conflict with self-interest
- 4) Assume people endorse pro-environmental values

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Effect of norm interventions on towel reuse behavior

Reese et al. (2014)

Sample: Hotel guests in Central Europe

Standard environmental message

- “Please help us to protect our environment by re-using your towels”

Descriptive Norm (Hotel)

- “Follow your fellow hotel guests and please help us to protect our environment: **75% of our hotel guests re-use their towels**. You can join the other hotel guests by also re-using your towel.”

Descriptive Norm (Room)

- “Follow your fellow guests and help us to protect our environment: **75% of our guests who were in this room re-use their towels**. You can join the other guests of this room by also re-using your towel.”

Results

- No significant difference between the DN conditions and the standard condition

Bohner and Schlüter (2014)

Sample: Hotel guests in Germany

Standard Environmental Message



- “Help to save the environment. Every day we clean a great number of towels, many of them are unused. Please help us to protect the environment. You can join us in this program to help save the environment by reusing your towel during your stay.”

Descriptive Norm (Hotel/Room)

- “Join your fellow guests in helping to save the environment ... **75% of the [guests / guests who stayed in this room] participated in our new resource savings program by using their towel more than once**. You can join your fellow guests in this program to help save the environment by reusing your towel during your stay.”

Results

- Standard Environmental Message > DN

Values and Pro-environmental Outcomes

Study	Location	Predictor	Pro-environmental Outcome (PEO)	Result
Poortinga et al. (2004)	The Netherlands	Biospheric values, Self-enhancement values	Acceptability of implementing energy saving habits	Biospheric values positively predicted PEO; SE negatively predicted PEO
Nordlund & Garvill (2003)	Sweden	Self-transcendence values	Willingness to reduce personal car use	ST positively predicted PEO
Nordlund & Garvill (2002)	Sweden	Self-transcendence values, Self-enhancement values	Engagement in a variety of pro-environmental behaviors	ST positively predicted PEO; SE negatively predicted PEO
Liobikiene & Juknys (2016)	Lithuania	Self-transcendence values, Self-enhancement values	Engagement in a variety of pro-environmental behaviors	ST positively predicted PEO; SE was non-sig
de Groot & Steg (2007)	Austria, Czech Republic, Italy, Netherlands, Sweden	Biospheric values, Egoistic values	Felt sense of moral obligation to behave pro-environmentally	Bio values positively predicted PEO in all five countries; Ego values negatively predicted PEO in Czech Republic and Netherlands, but was non-sig in Austria, Italy, and Sweden
Hansla et al. (2008)	Sweden	Self-transcendence values, Self-enhancement values	Willingness to pay for green electricity	ST positively predicted PEO; SE was non-sig
Ghazali et al. (2019)	Malaysia & China	Altruistic values, Biospheric values, Egoistic values	Engagement in a variety of pro-environmental behaviors	Altruism & Bio values positively predicted PEO; Ego was non-sig