

# Be a Better Coastal Adaptation Practitioner with Behavior Change



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# Agenda

- ▶ The Behavior Change Process
- ▶ Behavioral barriers to climate adaptation
- ▶ Tools (social norms/identity, efficacy, legacy motivation, nudge)
- ▶ Reaching different audiences with framing

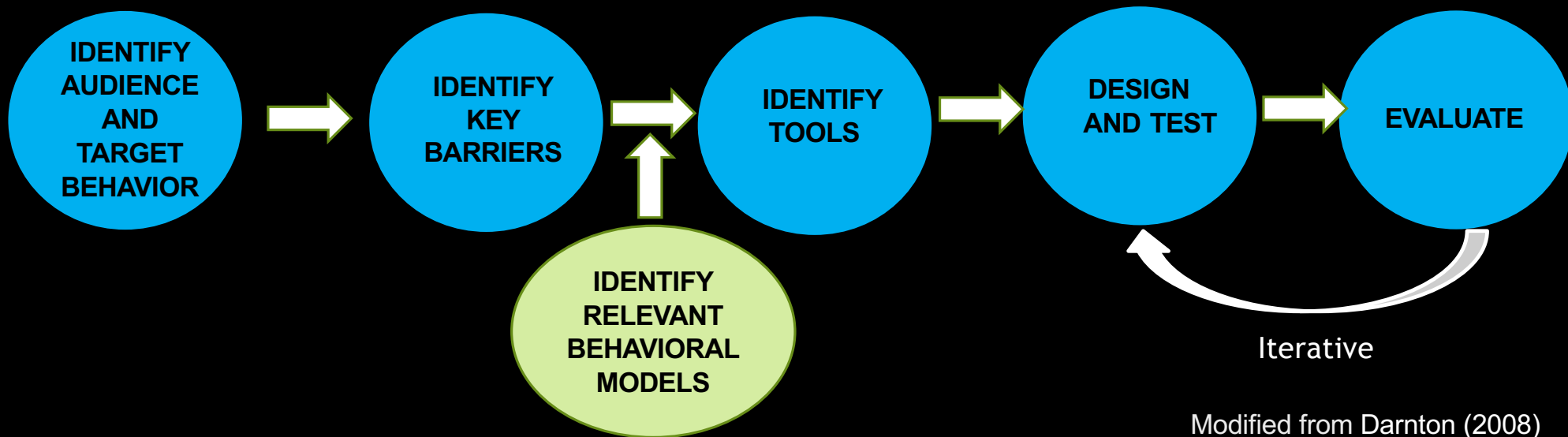


# Why Use Behavior Change for Climate Adaptation?



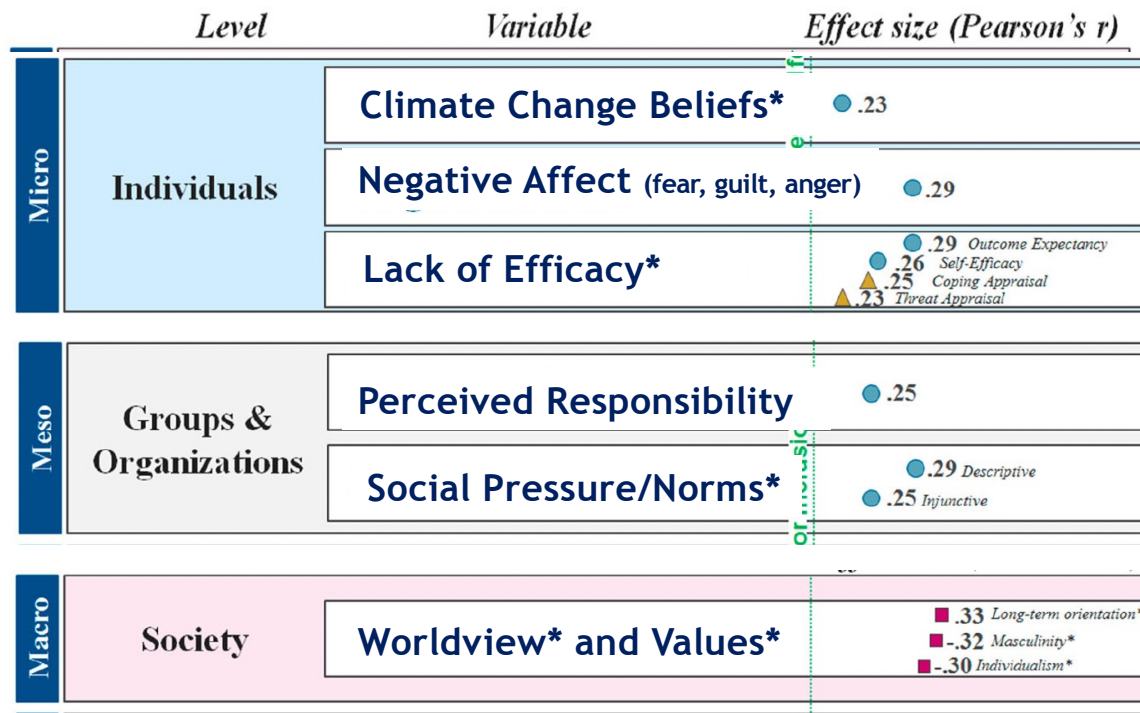
Image credit: Levin et al., 2020

# The Behavior Change Process



Modified from Darnton (2008)

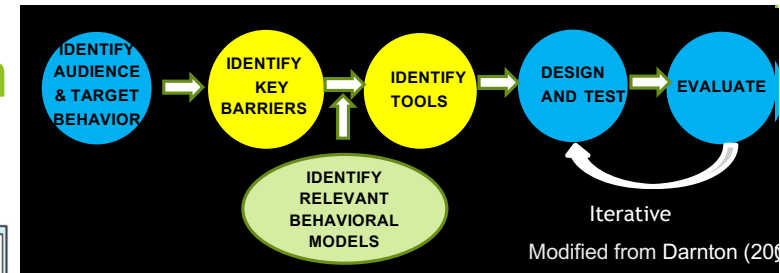
# Behavioral Barriers to Climate Adaptation



\* Regression coefficients were standardised and converted to Pearson's  $r$  with the formula of Peterson and Brown (2005). Correlations refer to the logarithm of *willingness to pay for climate control policies* as dependent variable.



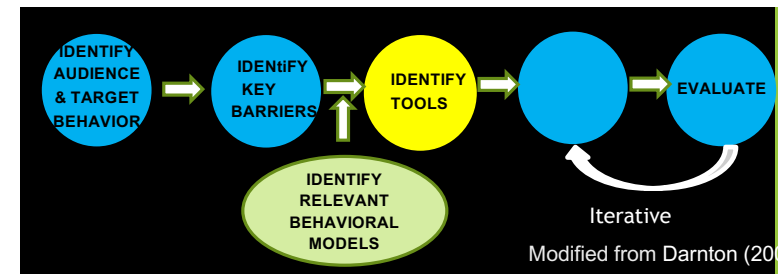
Figure modified from Bechtoldt et al. (2020); also see Tan-Soo et al. (2023); Noll et al. (2022); Ung et al. (2016)



# Tools for Climate Adaptation Action

- ▶ Social Norms
- ▶ Efficacy
- ▶ Legacy Motivation
- ▶ Nudge
- ▶ Frame

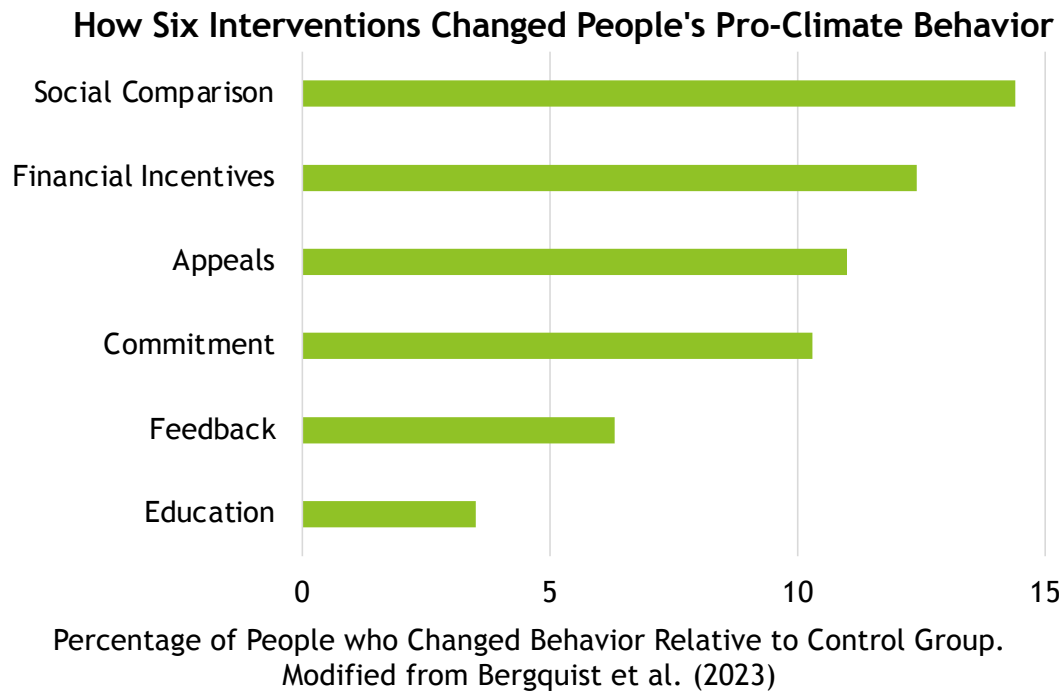
Bechtoldt et al. (2020); Van Valkengoed and Steg (2019); Tan-Soo et al. (2021); Kahneman (2011); Lacroix and Gifford (2018); Adger et al. (2009)





Lo et al. (2013); Faulstich-Hon et al. (2019)

# Social Comparisons: Most Effective Intervention



Berquist et al. (2023); also see Van Valkengoed and Steg (2019);  
Waters et al. (2024)





# Tool: Dynamic Social Norms

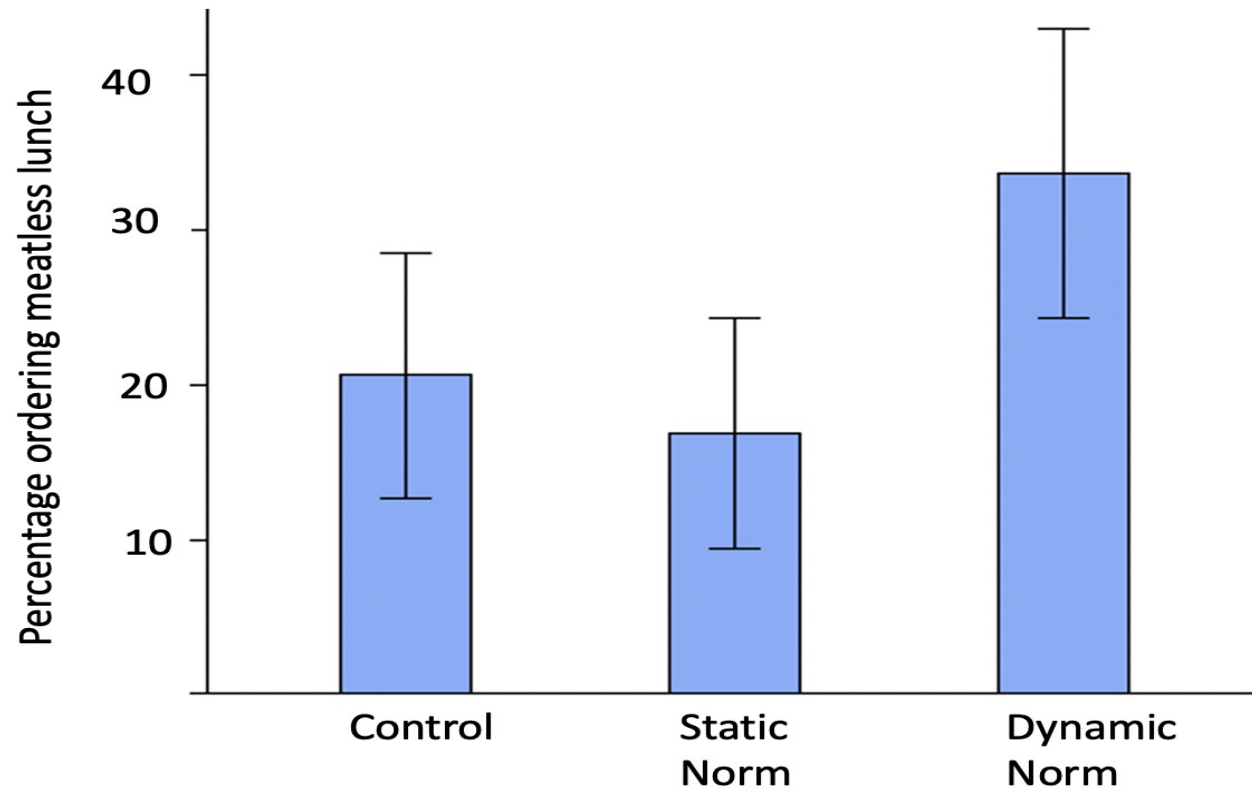


Figure Modified from Sparkman and Walton, 2017; also see Mortinsen et al., 2019; Mackay et al., (2020) ICES J Mar Sci 77(6): 2319-2332.

## Exercise: Dynamic Social Norms

Which ONE message below is best for encouraging people to take hurricane-protection measures around their home that uses a dynamic social norm?

- a. I just put up hurricane shutters on my home, says actress Jennifer Gardner.
- b. In the last two years, more and more people are using hurricane shutters.
- c. 45% of X residents have put up hurricane shutters on their home.

# Consider messaging with social identity to encourage being prepared.



*You only give your baby  
the purest water...*

The plants along the river absorb and capture sediment from polluted runoff, helping to ensure that the water is safe and clean for people and wildlife.

When you protect the land,  
you protect your drinking water.

*Their babies need it too!*  
**SUPPORT LOCAL LAND PROTECTION**

Photo Credits: before/after photo: <http://www.watersheds.org>



Source: NMCOG and MRWC (2014)

# Exercise: Frame with Social Identity

Which message below frames with **social identity**?

- a. “Famous athlete” protects his family from storm surge with dune grass.  
You should, too!
- b. North Carolinians always prepare for hurricane winds. Prepare for storm surge too with dune grass.
- c. More and more people are protecting their homes from storm surge with dune grass.



# LACK OF EFFICACY



Modified from Feldman and Hart (2013); Ripley Hiser and Lynch (2021); Ripley (2022, July 8)



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# How can you Increase Efficacy?



Increase a person's beliefs that they **CAN** make a difference.

Promote first-hand experiences in collective action, or share other's success stories.

Highlight importance of individual actions contributing to a **collective** goal.

*"It only takes a few to move the needle. If we all work towards..."*

Encourage the belief that **working together** we will address or reduce climate risks.

*"Together we CAN make a difference."*

Help people identify with a particular group already taking action.

*"Join the majority and add your support to this climate bill."*

Doherty and Webler (2016);  
Lorenzoni et al. (2007); Waters et al. (2024)



# Cognitive Biases



**We discount the future and favor the present.**

present bias/  
future discounting

**We rationalize behaviors that are inconsistent with our worldview, identity, or behavior.**

cognitive dissonance

**We simplify decision-making with cognitive shortcuts that may prove faulty.**

single action bias;  
availability heuristic



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# Tool: Legacy Motivation





# Exercise: Legacy Motivation

Which ONE message ending below uses legacy motivation?

Will you send this letter supporting the Climate Resilience Act to your politician.....

- a. ... to help protect our community?
- b. ... to reduce the cost of disasters to families?
- c. ...for the sake of your children and childrens' children?

# Legacy Motivation & Coastal Adaptation



Focus group experiment, Nova Scotia. Used 3 frames.

- 1) a past framing
- 2) a future framing (legacy)
- 3) Meaning framing

**Table 4. Focus group framing question prompts informed by climax thinking dimensions adapted from Sherren (2020)**

Dimensions:	Past	Future <b>Legacy</b>	Space/Place (Meaning)
<b>Framing:</b>	This change is just one in a series of changes your coast has faced over time	The things you love about being on the coast will persist under adaptation.	We have faced big challenges together before and can do so again.
<b>Topics:</b>	How has your coast changed for reasons other than climate change (e.g. infrastructure, economy) and how did that affect your community?	What do you love about this coast that you hope <u>future generations</u> will get to experience, and what is your duty to those future residents?	How did the residents of your community face wartime mobilization and what do you think made it possible for them to do so?

Sutton (2020)



# Tool: Nudge and Choice Architecture

Definition: A deliberate effort to change behavior by steering people in a particular direction while preserving freedom of choice.

A nonprofit encourages purchase of hurricane shutters with website link and coupon

An insurance company uses a default option to automatically include flood insurance with home insurance

## Limitations?

Not long-lasting

Can offend some people: ensure adequate opportunity for choice!

May reduce support for more significant change;  
important to point out not sufficient

Ly et al. (2013); Thaler and Sunstein, Nudge: Improving decisions about health, wealth, and happiness (2008); Little Book of Green Nudges (2022); Hagmann et al., 2019



# Choice Architecture Example

Choosing plant-based meat and chicken helps fight climate change.



Edenbrandt et al. (2021)

## Exercise: Choice Architecture

Which two answers use choice architecture to encourage the purchase of homes on stilts by homeowners?

- a. Send a notice to all residents urging them to consider purchasing homes on stilts
- b. Work with developers to offer fewer homes without stilts
- c. Ask realtors if they can post homes with stilts before those without stilts in realtor magazine and online.

# Summary

## Behavior Change Process

ID audience, target behavior, barriers, tools, test/evaluate

## Tools to increase motivation for climate adaptation

1. Social norms (dynamic); social identity
2. Increase efficacy
3. Legacy motivation
4. Nudge



# Reach Different Audiences with Framing



# Tool: Framing



## Table

5

Summary of messaging recommendations for motivating dismissive, uncommitted, and alarmed audiences to adapt to climate change.

Message attribute	Dismissive	Uncommitted	Alarmed
Refer to climate change	Detrimental	No effect	No effect
Specific adaptation advice	Beneficial	Beneficial	Beneficial
Negative emotive content	Beneficial	Beneficial	Beneficial
Highlight collective responsibility	No effect	No effect	No effect
Highlight local impacts	Beneficial	No effect	No effect
Highlight financial impacts	No effect	No effect	No effect

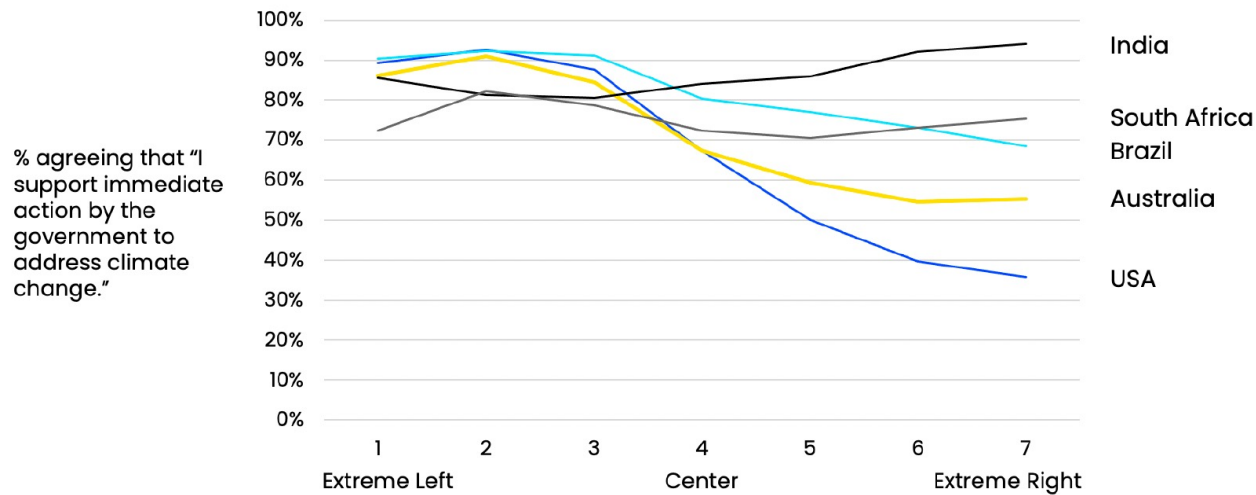
Hine et al. (2016)





# We Are the Most Polarized Large Country in the World About Climate Change.

Figure 15. Support across the political spectrum by country



% agreeing that "I support immediate action by the government to address climate change."

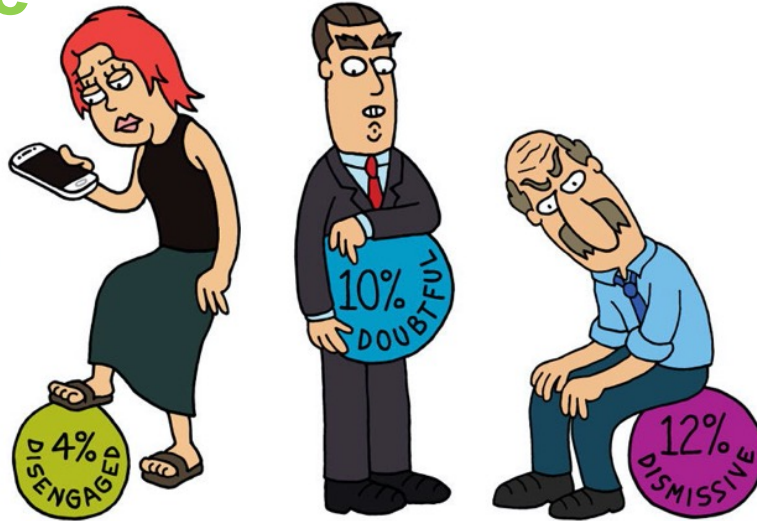
"On a left-right scale from 1 to 7, with 1 indicating extreme left and 7 indicating extreme right, where would you place yourself?"

Potential Energy (2023)



# Reaching the Disengaged, Doubtful, and Dismissive

Image credit: © John Cook, 2020



Lack of knowledge is not a barrier for this group

Guy et al. (2014); Malka et al. (2009); Braman et al. (2012)

Barriers are: [Worldview](#), [morals](#), [social pressure](#), and [psychological reactance](#).

# Barrier: Worldview

- Hierarchists
- Individualists
- Fatalists
- Egalitarians

Cultural theory: Douglas and Wildavsky (1982);  
also see Kahan (2012); Xue et al. (2014); Lacroix and Gifford (2018)



# Frame

**TABLE 1**

## Words That Appeal To Those with Either a Promotion or Prevention Focus<sup>14</sup>

PROMOTION		PREVENTION
ideal		ought
attain(ment)		maintenance
maximize gains		minimize losses
hope		responsibility
wish		necessity ★
advance(ment) ★		protect(ion) ★
eager(ness)		vigilant/vigilance
avoid missed opportunities		avoiding mistakes
promote		prevent
aspire/aspiration ★		duty ★
support ★		obligation ★
nurture ★		defend
add		safety
open		security
		must
		should
		cautious
		careful
		stop

Center for Research on Environmental Decisions (2009)



# Exercise: Frame with Values

Which message taps into the conservative value of **freedom of choice**?

Climate change is heating up our city.

- a. There are lots of ways to prevent heat stress. Consider...
- b. Our city needs to reduce heat stress by regulating....
- c. Protect your family from heat stress!



# Barrier: Moral Foundations

Conservatives' and liberals' moral foundations differ, with some overlap.

<u>Moral</u>	<u>Definition</u>	<u>Importance to Group</u>
<b>BINDING</b>		
In-group Loyalty	Loyalty to the group	Conservatives only
Purity/Sanctity	Physical/moral cleanliness	Conservatives only
Authority/Respect	Respect for one's leader	Conservatives only
<b>INDIVIDUALIZING</b>		
Fairness/Reciprocity	Concern for whether actions are fair	Shared
Harm/Care	Concern for whether actions harm others	Shared

Haidt and Graham (2007); also see Kidwell et al. (2013)



## Exercise: Frame with Morals

Which two messages uses **in-group loyalty**, a moral foundation favored by conservatives?

- a. We should all encourage heightening dykes to protect from flooding.
- b. A real American protects their neighborhood. Will you support heightening our dyke?
- c. A patriot would protect this town and nation any way they could. That's why I am asking you to support dyke heightening to protect us from flooding.



# Use Credible Messengers

- Choose your messenger wisely
- Types of messengers
  - Authority figures
  - Change agents





# Change Agent

Richard Mode, Outdoorsman, Conservationist



<https://youtu.be/ELPynt1EUAw?si=mM7CNNREuFKW9GcR>

Video credit: Climate Stories NC  
Dave Salvesen, Producer



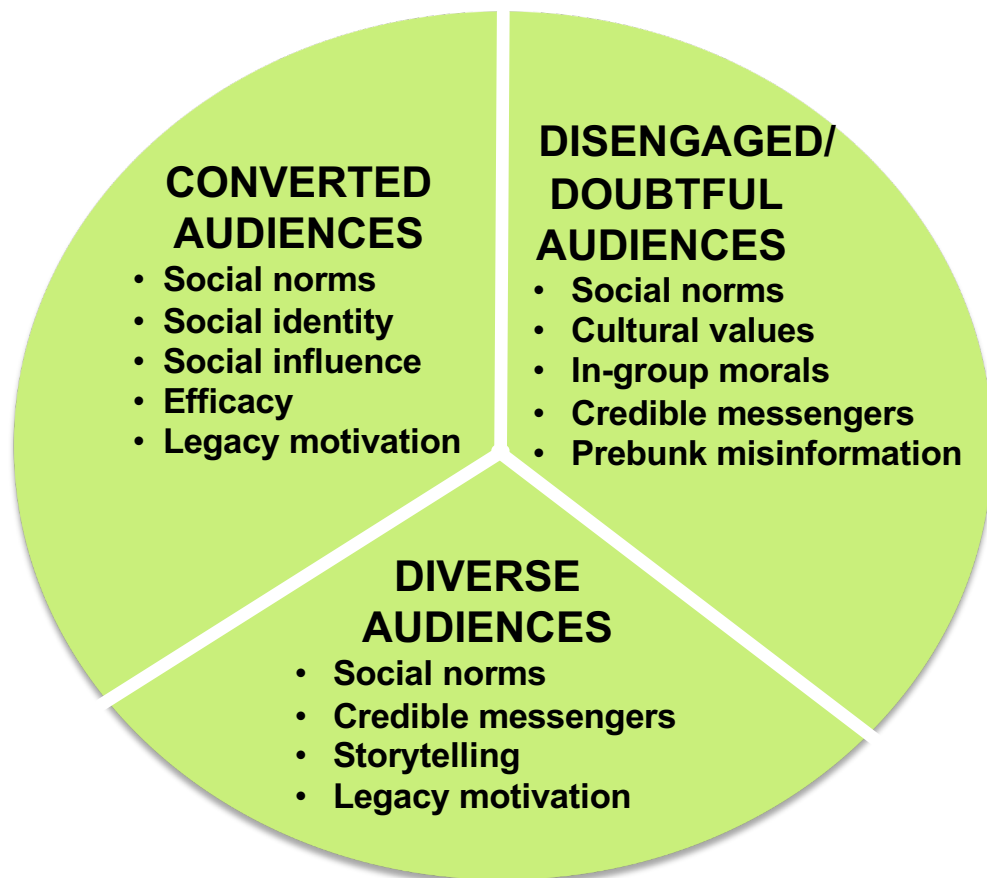
# Reaching Frontline Communities



inspired from Park et al., 2022



# Summary: Reaching Different Audiences



Modified from Nan et al., 2022

Thank you!

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