Climate of Change Survey

Advanced Webinar

FEBRUARY 7, 2017

CONFIDENTIAL

EcoAnalytics

Shared intelligence for Canada's environment

Outline

- EcoAnalytics objectives and progress
- Segmentation, framing and motivated reasoning
- Key lessons from Climate of Change 2016
- What's next?

Objectives and Progress

Who are we?

- **Innovators**
  - Bridging research & practice (Climate Access; Climate Advocacy Lab)
  - Crossing boundaries: e.g. testing strategies in survey work, and theories, in the field
- **Capacity builders**
  - Generating and utilizing market intelligence
  - Engaging with latest research, testing practitioner/academic ideas
- **Producers of market intelligence for:**
  - Strategic decision-making
  - Audience profiling
  - Communications

What are we doing?

- Building capacity to engage Canadians on the environment
  - Good communication requires detailed understanding of audience
  - Test messaging (A/B) & messengers (1/2) on different target audiences
  - Design campaigns using frames in communication *and* in thought

Framing 101

- **Frames in communication vs. Frames in thought** (Chong & Druckman)
  - Deliberate choice of words, slogans, metaphors & narratives used to communicate about an issue and to promote a particular interpretation
  - Pre-existing interpretations and mental schema that filter incoming stimuli

- **Cognitive science shows frames give meaning to words** (Lakoff)
  - Unconscious structures of the mind, connected directly to emotions, influence our interpretation
  - Frames (moral and conceptual), activated by our language and imagery, help us give meaning to words

Audience segmentation

- Analytical tool to categorize people into relatively homogenous groups based on demographic (e.g. age, gender) and psychographic (e.g. attitudes, values, media use, lifestyles) characteristics

- Allow communicators to tailor and target messages based on unique characteristics of subgroups

Audience characteristics

Figure 2: Engagement by sociodemographics

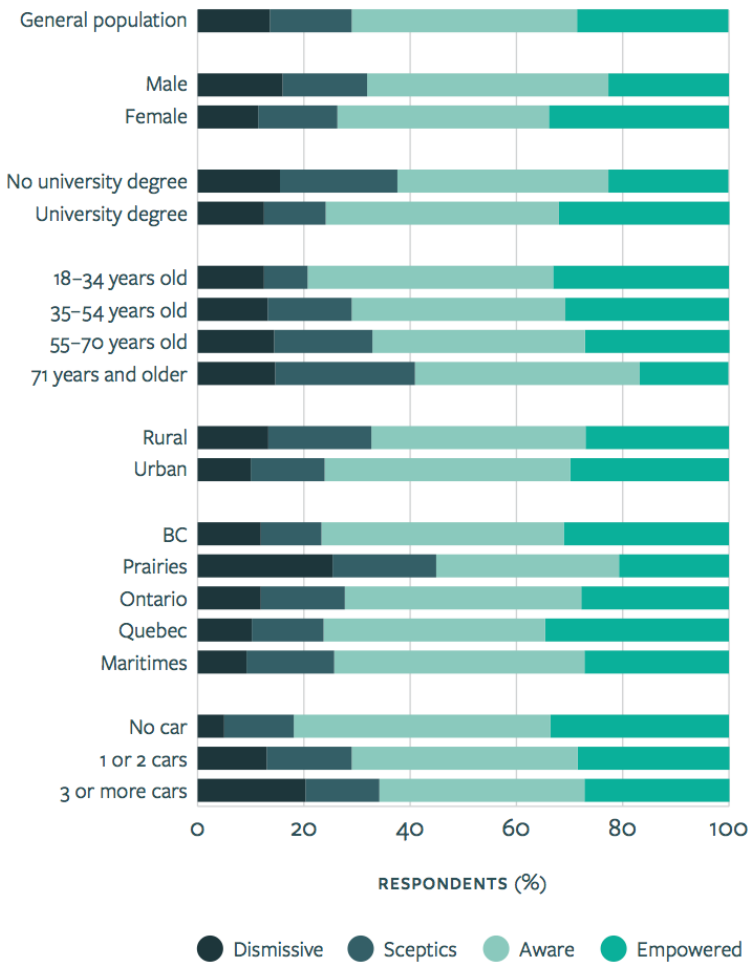
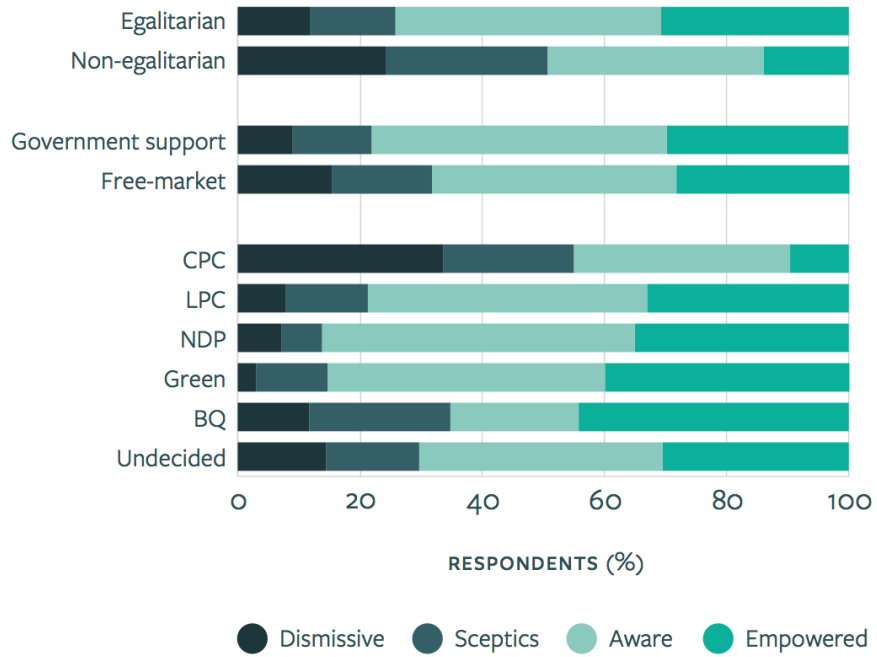


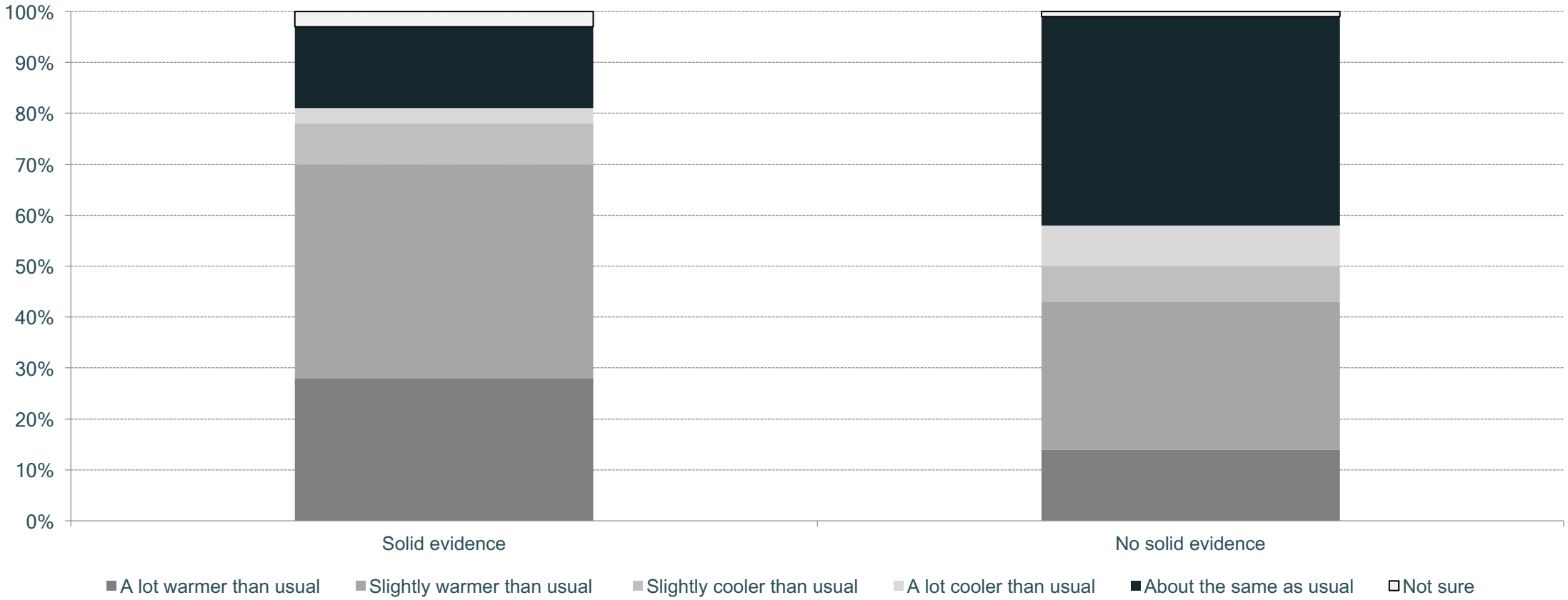
Figure 3: Engagement by sociopolitical dynamics



Motivated reasoning and Biased assimilation (Kahan)

- MR: Unconsciously fitting new information to conclusions that suit an end or goal
  - Perceptive filters; no one is immune from these biases (though we can try to be reflexive)
- BA: Crediting or discrediting evidence/experts selectively to promote or frustrate that goal
  - One of several mechanisms underlying MR
- Note: goal is often to avoid cognitive dissonance; be consistent with our pre-existing beliefs & values; financial interest; in-group status and positive self-image

Motivated reasoning:
Perceptions of local weather by beliefs about global warming



Source: 2016 Climate of Change

Biased assimilation: Assignment of expert credibility

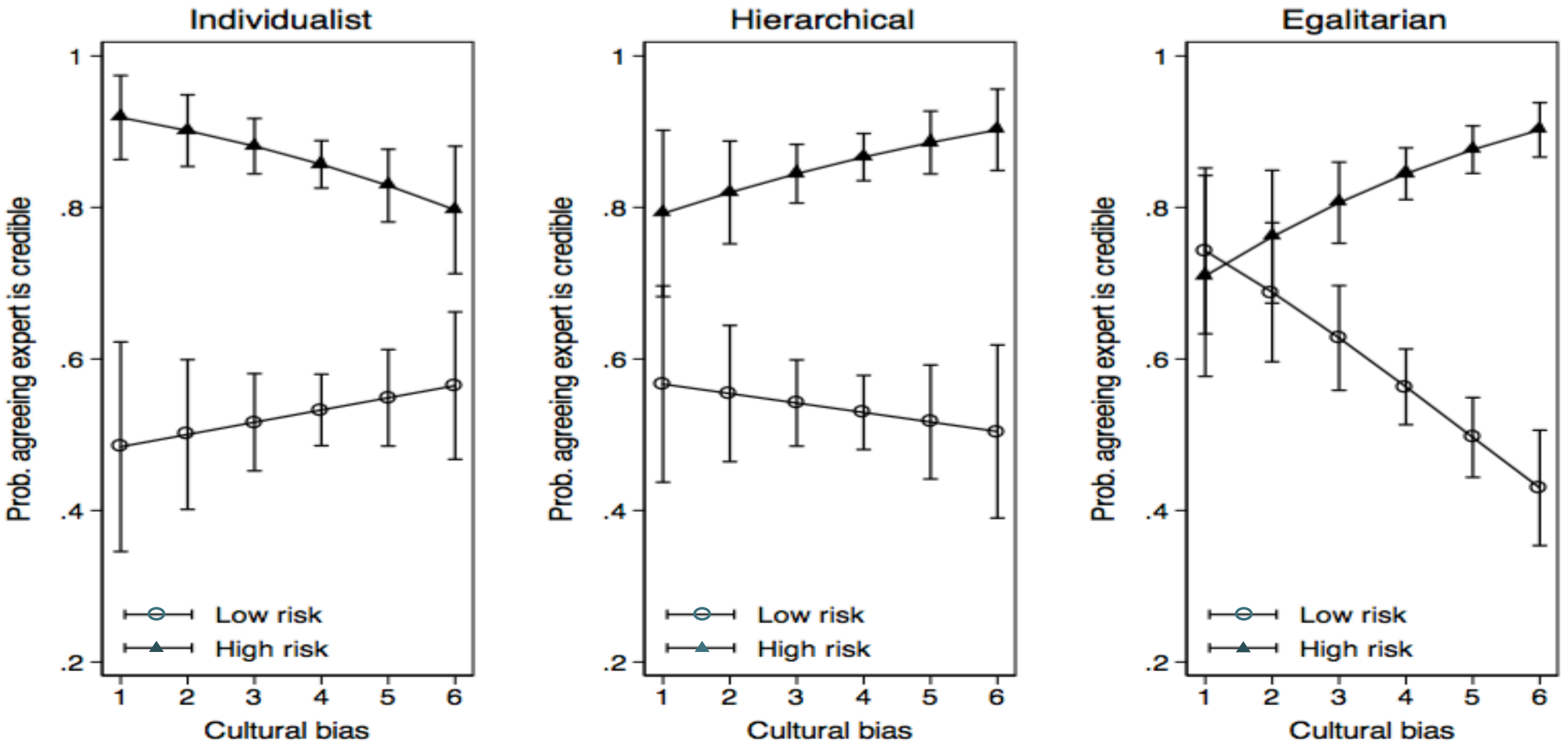
Figure 1: Scientific Profiles with Low and High Risk Treatments

Robert Linden
Title: Professor of Meteorology, Massachussetts Institute of Technology
Education: Ph.D., Harvard University
Member:

- American Meteorological Society
- National Academy of Sciences

Low Risk Treatment
"If standard scientific conventions are any indication, it would be premature to conclude that human activity resulting in emissions of CO2 -called a 'greenhouse gas'- is the cause of global warming. It should be noted that the earth's global temperature has remained stable since 1998, despite an unprecedented increase in CO2 emissions during this period. Moreover, in some areas, the size of glaciers has increased rather than decreased, and the ice around Antarctica has been growing in the last thirty years, i.e., since we have been measuring it systematically. Scientific authorities who predict global warming despite these facts are relying entirely on computer simulations. Yet, these simulations are based on extrapolations from past atmospheric observations. The idea that these simulations can predict the temperature in a world where conditions are very different - particularly in terms of an increase in CO2 - corresponds to an unverified assumption and not rigorous scientific proof."

High Risk Treatment
It is now beyond reasonable scientific dispute that human activity is causing 'global warming' and other dangerous forms of climate change. Over the past century, atmospheric concentration of carbon dioxide (CO2) - called a 'greenhouse gas' because of its contribution to trapping heat - has increased to historically unprecedented levels. Scientific authorities at all major universities agree that the source of this increase is human industrial activity. They agree too that higher CO2 levels are responsible for steady rises in air and ocean temperatures over that period, particularly in the last decade. This change is resulting in a host of negative consequences: the melting of the polar ice caps and resulting increases in sea levels and risks of catastrophic flooding; intense and long-term droughts in many parts of the world; and a rising incidence of destructive cyclones and hurricanes in others."



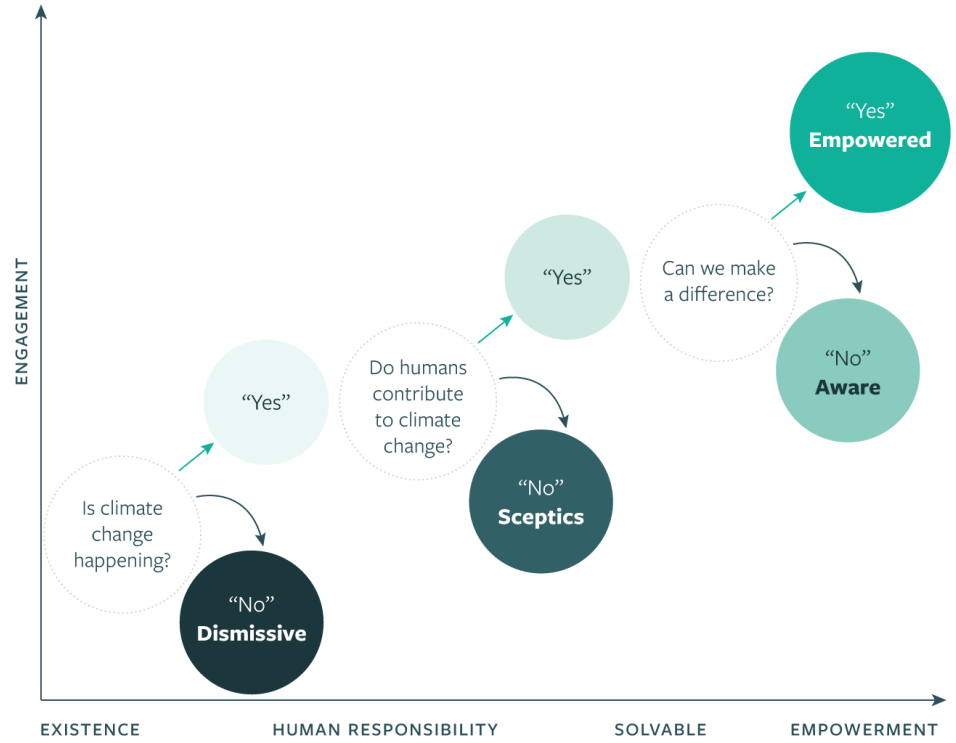
Climate of Change, 2016

What we've learned
(so far)

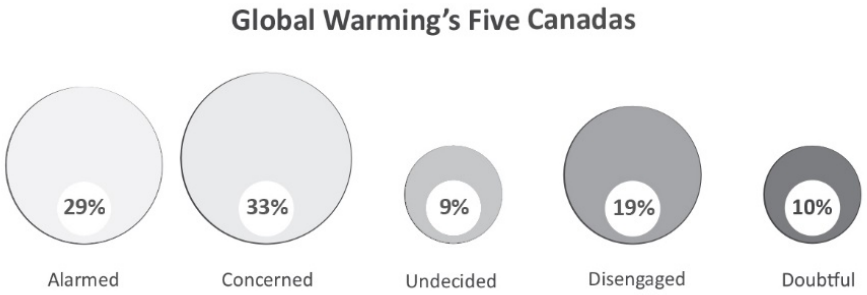
EcoAnalytics
Shared intelligence for Canada's environment

Multiple climate change audiences

Deductive



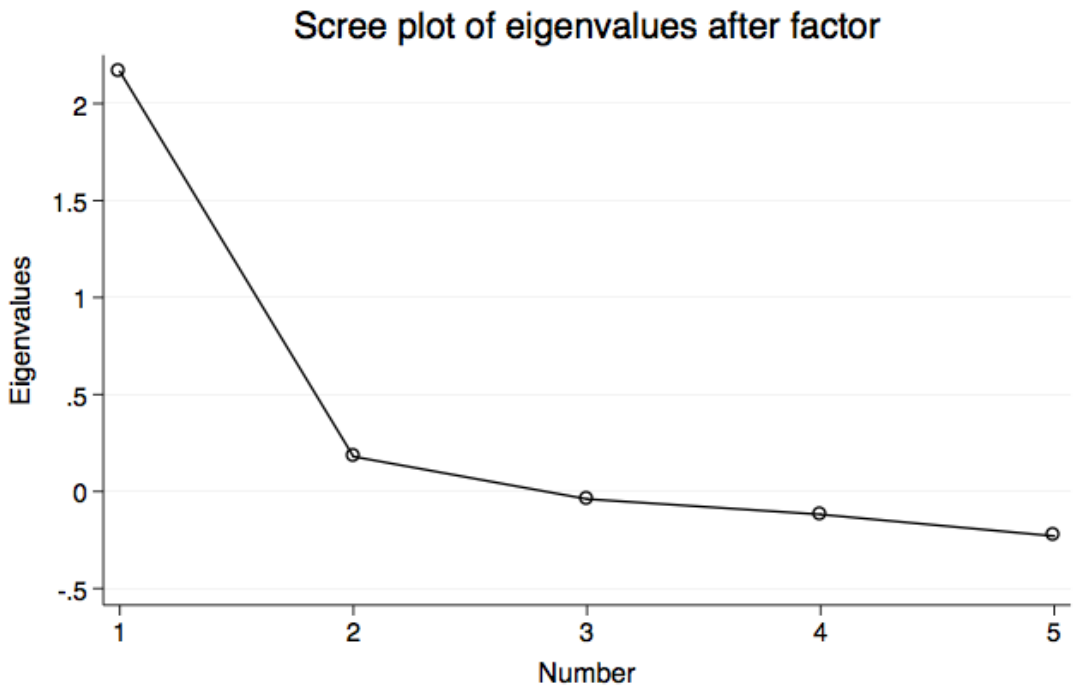
Inductive using LCA



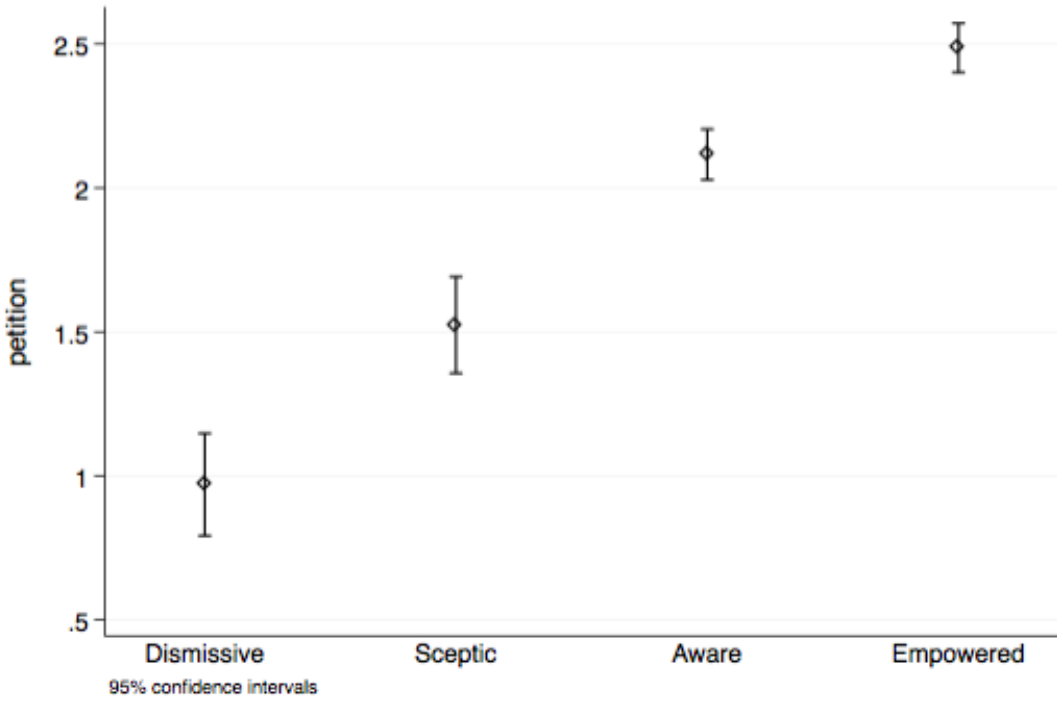
Validating the empowerment scale

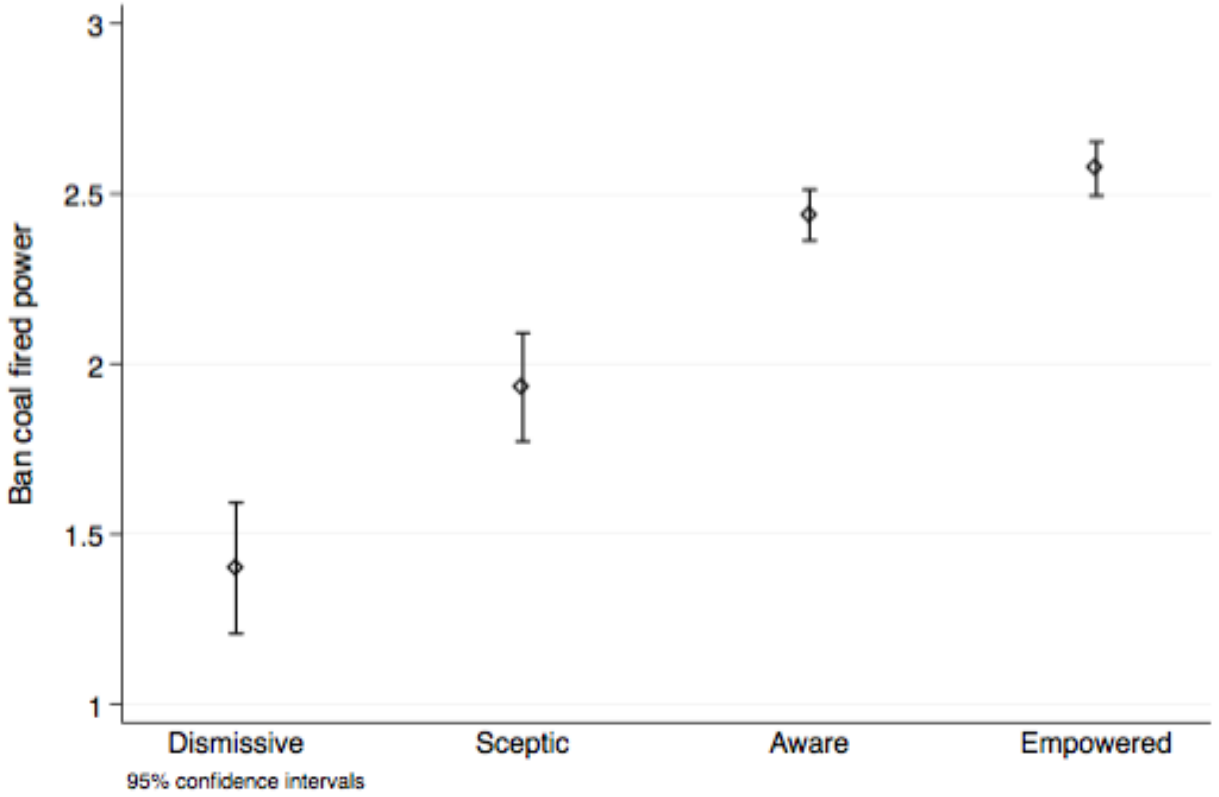
Test scale = mean(unstandardized items)

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
real	1200	+	0.7154	0.5872	.0966616	0.7415
human	1200	+	0.7678	0.6097	.082763	0.7240
optimist	1200	+	0.6821	0.4694	.0927639	0.7731
moralresp	1200	+	0.8320	0.7026	.0733338	0.6897
efficacious	1200	+	0.6837	0.4681	.0923774	0.7744
Test scale					.0875799	0.7822



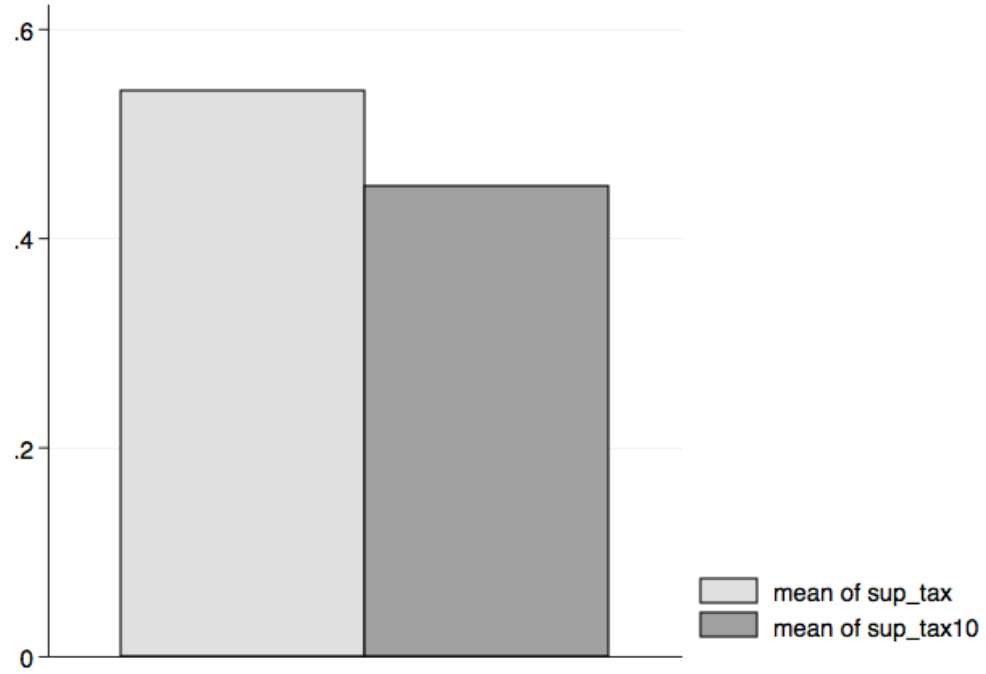
Convergent validity and applications



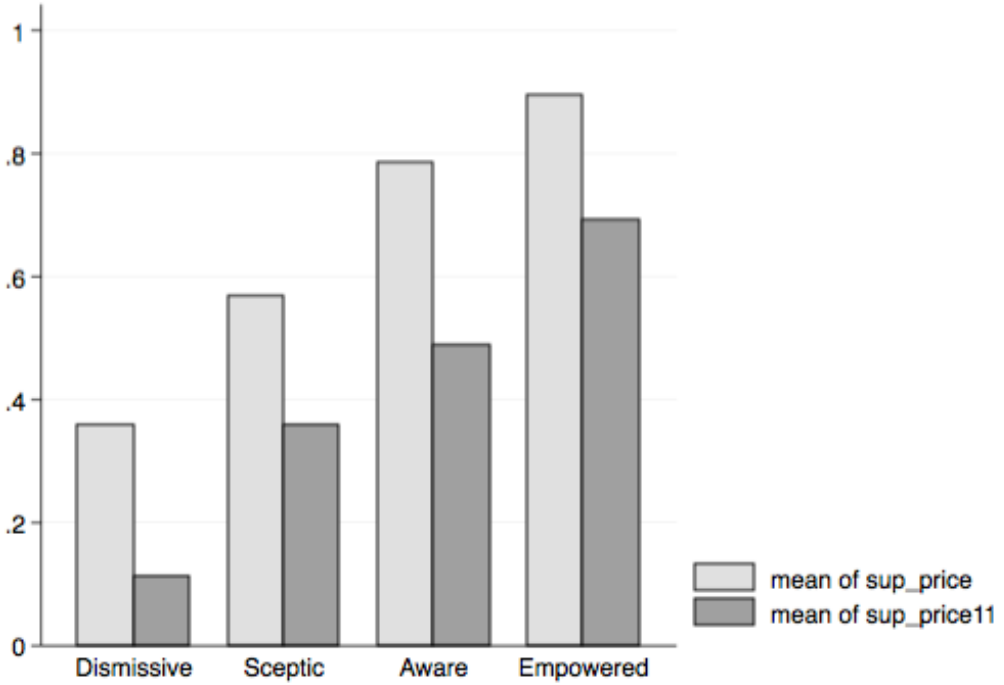


Cost specification

2013 – tax on fossil fuels
[Raise cost of energy by about 10%]



2016 – price on carbon pollution
[Increase price by about 11 cents/l]

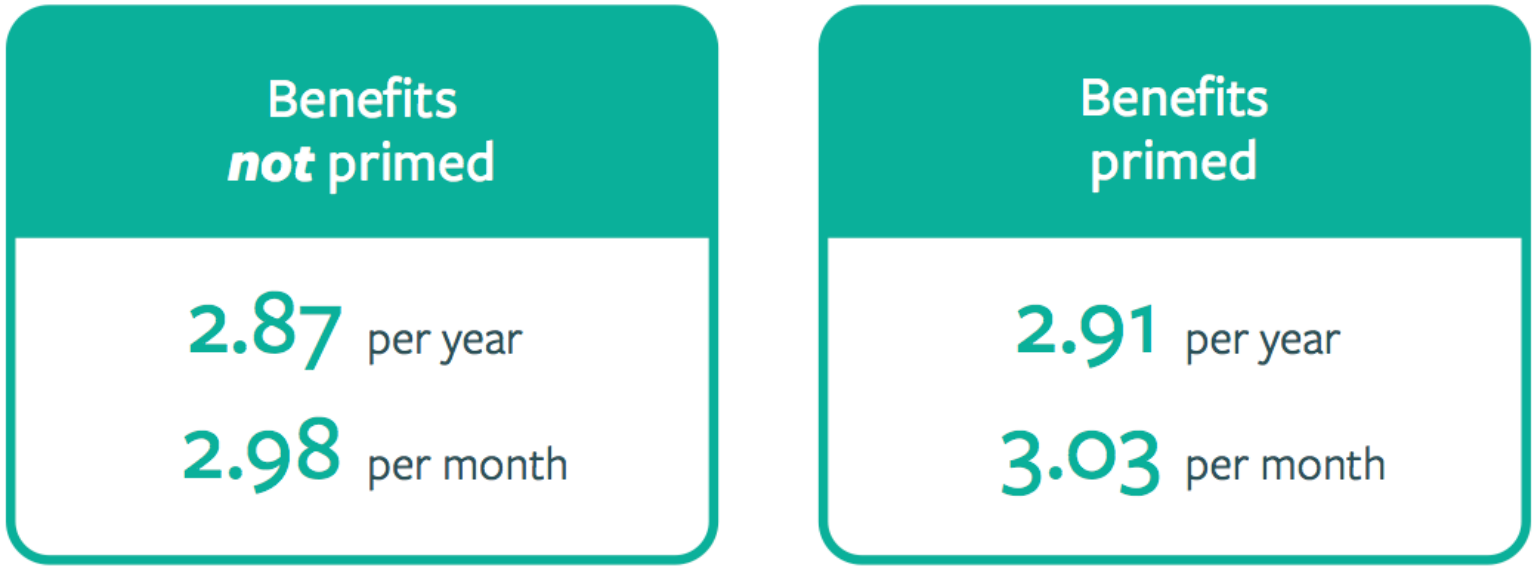


Offsetting the cost frame

- We know the clean energy transition is not free
- We also know language of cost activates the self-interest frame
- We tried to offset this in two ways
  - 2x2 experimental design
  - Breakdown costs per month/year (equivalency)
  - Ask willingness-to-pay question before/after benefits (priming)

Experimental results

Figure 8: Experiment on willingness to pay for more clean energy



If it required you to pay extra money each month/year for more clean energy to be produced, how much would you be willing to pay? Would you be willing to pay: (1) Nothing each m/y; (2) 1 to 50/y [1 to 5/m]; (3) 50 to 100/y [5 to 10/m]; (4) 100 to 250/y 10 to 20/m]; (5) 250 to 500/y [20 to 40/m]; (6) over 500/y [over 40/m]

Risk & benefits framing

- Extensive literature on risk perceptions (prospect theory; construal theory)
  - Losses > gains
  - Proximity > distance
  - Concentrated > diffuse
- Implications for communication
  - Arguments around diffuse gains generated in long term (e.g. avoided future damages from climate change) are least persuasive

Priming experiment

Table 1. Preambules, Experimental Conditions, and Question Wording

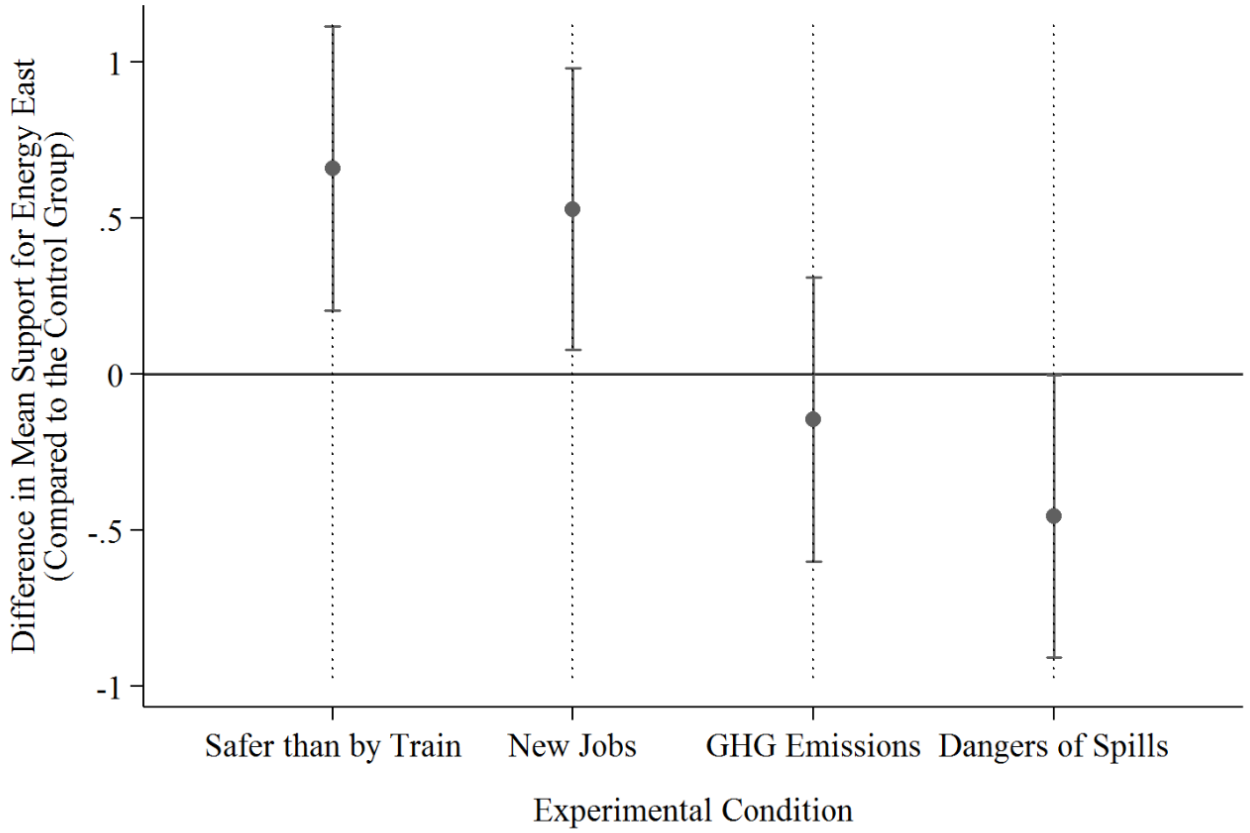
2014 PREAMBLE: As you may have heard, there are a few pipeline proposals now being considered in Canada and the US. One is Trans Canada's Energy East that would transport oil from oil sands in Alberta and Saskatchewan to ports and refineries in Quebec and Atlantic Canada.

2015 PREAMBLE: There is some discussion about building new pipelines in Canada. One of these is TransCanada's Energy East pipeline that would transport oil from Alberta and Saskatchewan through Manitoba and Ontario to ports and refineries in Quebec and Atlantic Canada.

CONTROL CONDITION:	No message
SAFER THAN BY TRAIN FRAME:	"An argument for building this pipeline is that it is safer than transporting oil by train."
NEW JOBS FRAME:	"An argument for building this pipeline is that it will create jobs."
DANGERS OF SPILLS FRAME:	"An argument against building this pipeline is that it will put local land and water resources at risk of contamination from spills."
GHG EMISSIONS FRAME:	"An argument against building this pipeline is that it will increase greenhouse gas emissions."

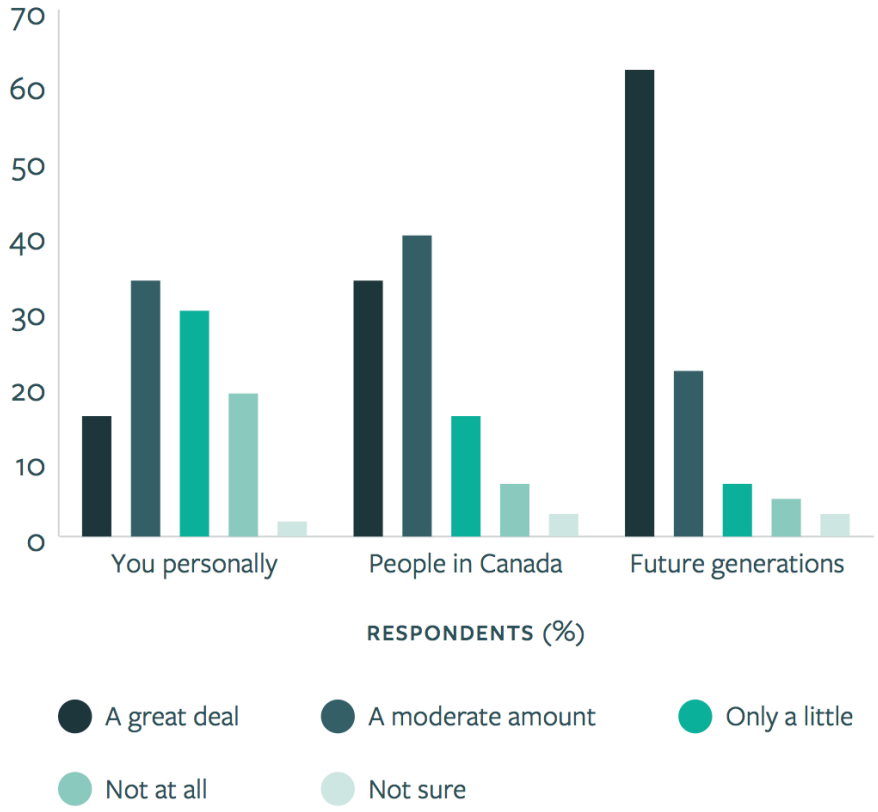
On a scale of 0 to 10, where 0 means strongly oppose and 10 means strongly support, how strongly do you support or oppose the building of the Trans Canada Energy East pipeline?

Most persuasive arguments



Psychological distancing

Figure 11: Risk perceptions by question wording



What's next?

Building on empowerment

- Our results show *potential* to engage audiences; but how?
  - Raise solutions and options in discussions with urban and rural audiences, without being prescriptive
  - Connect to mass movements with similar values (social justice, women, First Nations, labour)
  - Target youth, over long term.

Challenge the cost frame

- Frame around (egalitarian) values
  - Polluter pays
  - Moral responsibility toward unborn
- Frame around (direct, visible) benefits
  - Public health; clean air
  - Innovation; investment
- Research more deeply, using:
  - Open-ended questions on benefits of clean energy transition
  - Same design but use open-ended measure of willingness to pay
  - Same design but use alternative measure (policy support or support for meta-narrative)
  - Focus groups to test meta-narrative (“clean growth century”? Our own?)

Making climate change hot

- Fear won't do it (O'Neil et al., 2009)
  - Cognitive structures are unavailable
  - Fear can be disempowering
- Stay true to science in way that is easy to interpret within existing moral systems and ethical codes
  - Need more research on this; focus groups
- Ideas to test
  - Framing around strengthening our communities;
  - Protecting our children's future

Outstanding questions

- Which approach to segmentation do groups prefer?
- Which segments do groups want to target?
- What more do we want to know about segments?
  - How to reach them? (information needs & sources, chosen media, etc.
  - Who to reach them? Social identities, trusted messengers?
  - Opinion leaders? Social networks, influencers for each segment?

Summing up

What have we learned (so far)?

- Canadians fall into four or five climate change audiences
  - Targeted communication (egalitarian values) but with coherence (meta-narrative)
- The cost frame is a major barrier *for all* segments
  - Benefits framing is promising, but we need to build the appropriate cognitive structures through repeated communication (will require testing and campaigning)
- Climate change activates distant frames; frame around concrete, short-term and local
  - More emphasis on immediate benefits and risks: clean air, safe water, public health, technological innovation
  - Exploit existing cognitive frames: collective/communal responsibility; rights of the unborn
- Need to translate engagement into action
  - Messaging needs to focus on positive opportunities to engage climate solutions/benefits without prescribing choice

Next Steps

- Short term: Panoramic Survey will dig deeper
- Medium term: identify target audiences and behaviours/attitudes to susceptible to change; identify messengers; formulate strategies; use A/B testing
- Long term: Potential focus groups; consider field research; test methods of engaging youth; think creatively!


Questions?
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