

Center for Research on
Environmental Decisions
EARTH INSTITUTE | COLUMBIA UNIVERSITY

Advantages of local climate impact forecasts and feedback, with a couple of caveats

Elke U. Weber

Columbia University

Garrison Institute 2013 Climate, Mind, and Behavior Symposium

The Preparedness Path to Engagement for the Long Haul:

Perspectives from the Physical and Social Sciences

Preview

- Adaptation/Preparedness
 - Focus on the local
 - Gateway to concern about global problem and mitigation?
- Two caveats
 - Effect of personal experience with extreme weather impacts
 - Influence of local weather abnormalities on concern/belief/response to climate change

Adaptation/Preparedness

- **Focus on the local**
 - **Concrete problems**
 - Not “climate change” statistics, but extreme weather events and their impacts
 - storm surges, local flooding, droughts, etc.
 - **Already in evidence**
 - Distrust of climate change information sources
 - Personal experience beyond doubt
 - » “seeing is believing”
- **Not restricted to reacting to negative impacts**

Adaptation

- **Bruno Hauswirth**, Grindelwald Switzerland tourism agency
 - “Climate change in the mountains as an opportunity, not just a threat”
 - “Tour guides even profiting from the results of global warming, organizing “warming tours” to explain its effects using local developments as examples”

» NYT, May 29, 2013 (John Tagliabue)

Only Google hit for “Global Warming Tours”



Adaptation/Preparedness, cont'd

- **Assets we care about**
 - People's lives, property, and livelihoods
 - Explains puzzle of why we do not show loss aversion for current climate conditions
 - Too abstract a concept, removed in time and space
- **Incremental risk management**
 - Shorter planning horizons, faster feedback
- **Solvable task**
 - Less of a public-goods and collective-action problem

Adaptation/Preparedness, cont'd

- Makes question of causation a moot issue
 - 2nd line of defense of climate change sceptics
 - Doubt in anthropogenic origin of climate change
 - But, bipartisan support for protective action
 - Trojan-horse or least ideologically-fraught way of getting engagement with climate change consequences
- Gateway to concern/response to global CC problem?
 - Extreme weather events as useful concretization device
 - “Loaded die” metaphor, or die with additional sides (“7”s and “8”s)
 - Depends on attribution of current extreme weather events and extrapolations
 - Mitigation as most effective long-term preparation strategies, as part of portfolio when other options no longer prove cost-effective
 - How long will insurance and re-insurance industry be able to survive? 7

Effect of personal experience with extreme weather impacts

- Personal experience of local climate change impacts has been associated with increased belief in and concern, and greater willingness for mitigation action
 - UK (Whitmarsh, 2008)
 - Florida and Alaska (Leiserowitz & Broad, 2008; Arctic Climate Impact Assessment, 2004)
- Which way causation?
 - Reported personal experience → beliefs?
 - Bayesian updating: evidence-based belief revision
 - Beliefs → selective attention → reported experience?
 - Belief-motivated perception
- Myers et al., *Nature Climate Change*, 2013
 - Data collected on CC personal experience and CC belief at two points in time, 20 months apart
 - American respondents, segmented into “6 Americas”
 - Evidence for both processes
 - Belief motivated perception for climate-change deniers or alarmists
 - Evidence-based belief revision for four groups in the middle

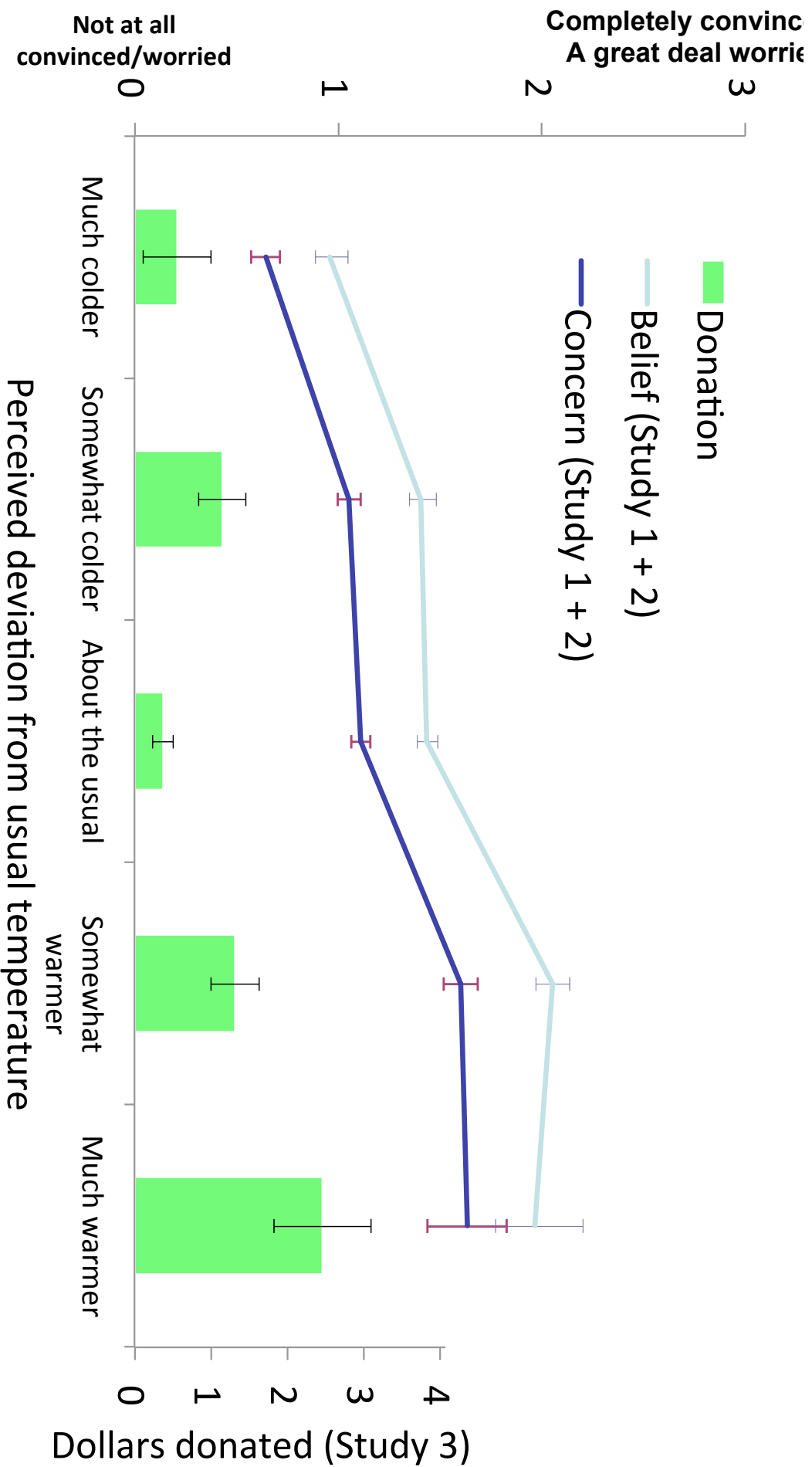
Influence of local weather abnormalities on concern/belief/response to climate change

- **“Local warming”**: Daily temperature deviations affect beliefs and concern about climate change,

Ye Li, Eric Johnson, and Lisa Zaval (Psychological Science, 2010)

- 1123 participants from U.S. and Australia
 - Wide age range (18 to 65+)
 - Highly educated (most completed some college)
 - Mix of liberals and conservatives
- Questions (Q1 & Q2/Q3 order counterbalanced)
 1. Is the temperature in your city colder or warmer than usual today for this time of year?
 2. How convinced are you that global warming is happening?
 3. How much do you personally worry about global warming?
 4. (Study 3) Donation from \$8 pay to *Clean Air-Cool Planet*
 5. Other controls (zip code, demographics, politics, etc)

Results



Take-Away

- Preparedness path as politically feasible and realistic
- Offers many advantages
 - Makes the global local and the abstract concrete
 - Provides non-ideological forum to observe and examine climate change impacts
 - Sets solvable tasks: more control, more feedback, shorter time horizons
- Adaptation and mitigation as complements, not substitutes
- Preparedness action as the gateway drug to mitigation?
 - Possibly so, but probably most effective for segments of the public without deeply held beliefs
 - Possibility of greater confusion and wasted efforts as public attention and concern rises and falls with highly variable local conditions and weather abnormalities