andlinger center
for energy+the environment

Technology Innovation, Public Policy, Market Forces, and Human Behavior

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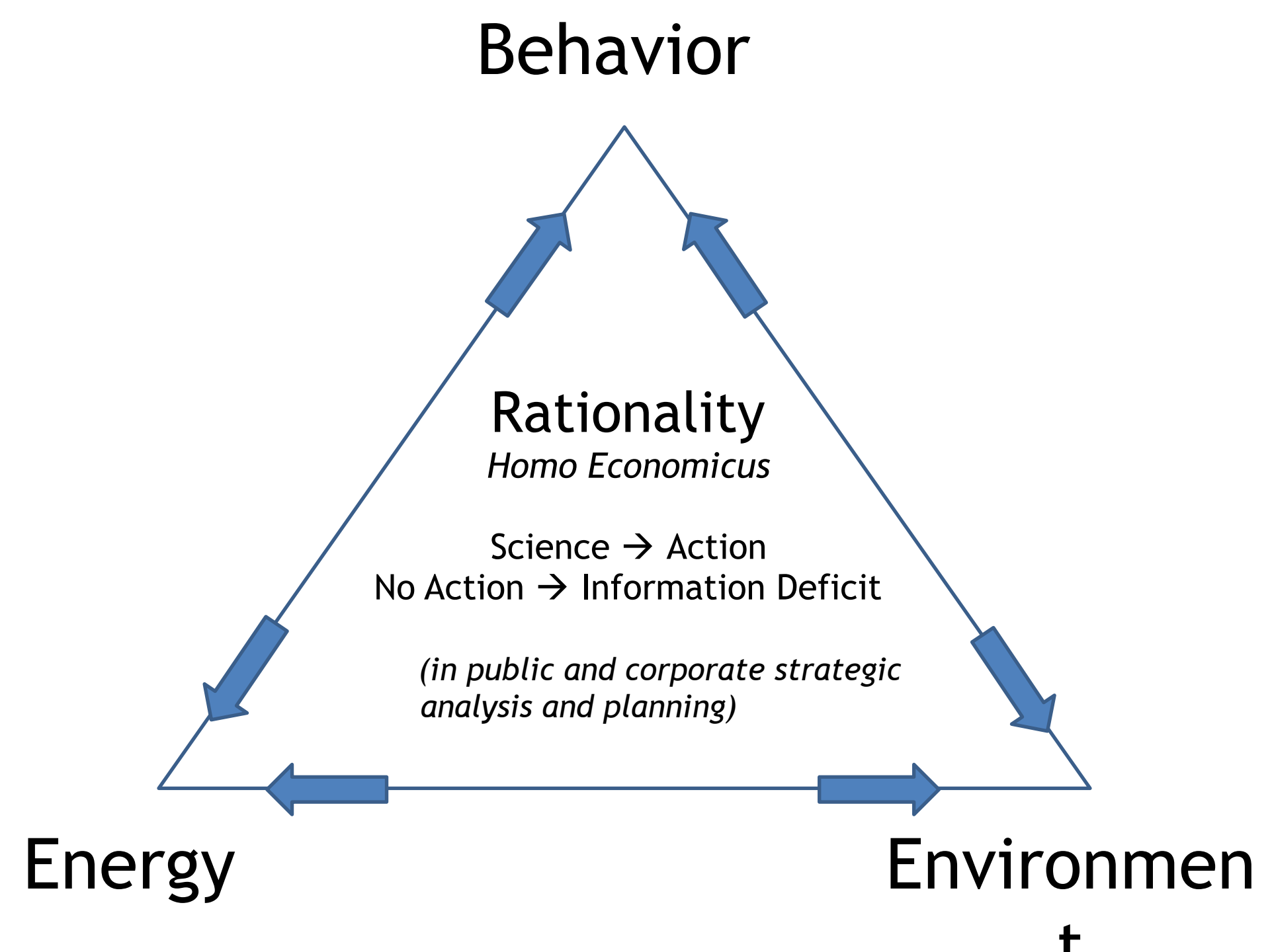
Accelerating Climate Action in the United States:
What Are We Doing and What More Can Be Done?
September 21, 2018


Behavior
Rationality
Homo Economicus
Science → Action
No Action → Information Deficit
(in public and corporate strategic analysis and planning)
Energy
Environmen
t

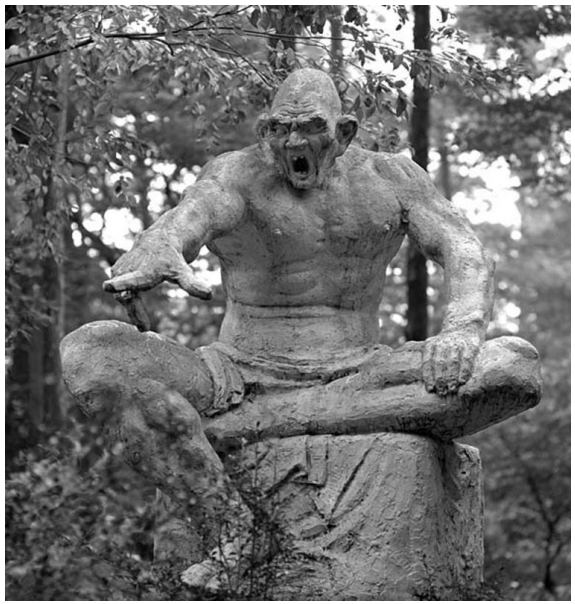
Homo sapiens

- Not primarily a creature of rational deliberation

- Instead, a creature of habit
  - Learn from personal experience

- Use associations, emotions, and rules to guide actions

- Many, often conflicting goals



Sources of Decision Difficulty

- Risk and uncertainty
  - scary, reduce feeling of control
- Tradeoffs
  - desire to have it all, or at least feel that we can
- Longer time horizons
  - cognitive myopia

And yet, Climate Change results in…

- Additional sources of
  - risk/downside
  - uncertainty
- Changes in
  - tradeoffs
  - time horizon
  - scale and quality of challenge

Sources of climate/environmental uncertainty

- Uncertain public sector action
  - International UN/COP negotiations and treaties
  - National carbon pricing, industrial policy, environmental regulation
  - State and local policies
    - PUCs, regional Cap&Trade agreements
- Uncertain private sector action
  - Clean energy technology R&D
  - VC and institutional investors bets on new technologies
  - Financial sector response to carbon risks
- Uncertain consumer/voter behavior
  - Energy efficiency, electric car, and other technology uptake
  - Perception and concern about climate change risks

Breakthroughs Necessary

- Acknowledge and manage carbon risks
- Price GHG pollution externalities
- Stop assuming that all behavior is rational!
  - Understand, predict, and guide perceptions and behavior at all levels
  - Overcome fear of change, limited imagination, and sta

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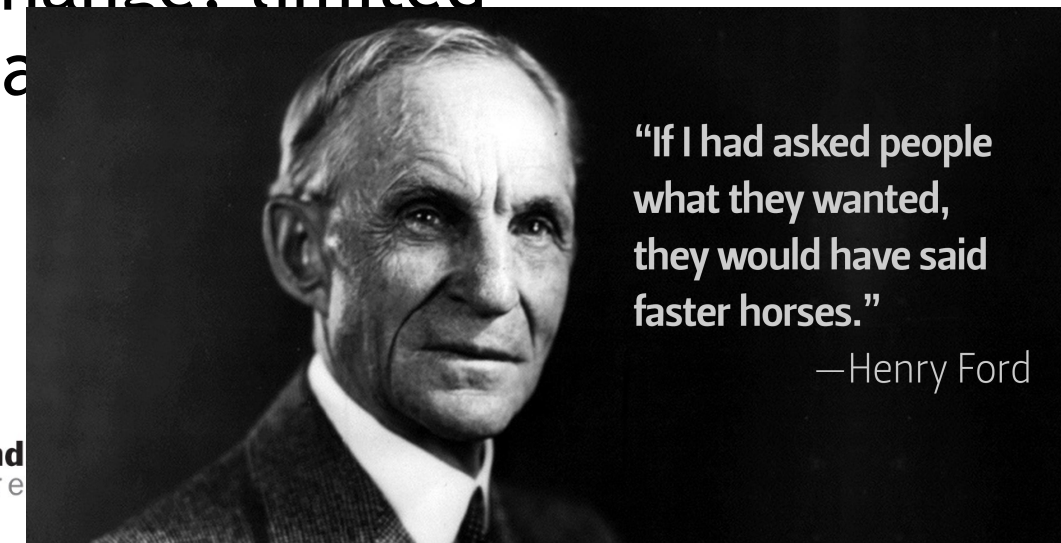
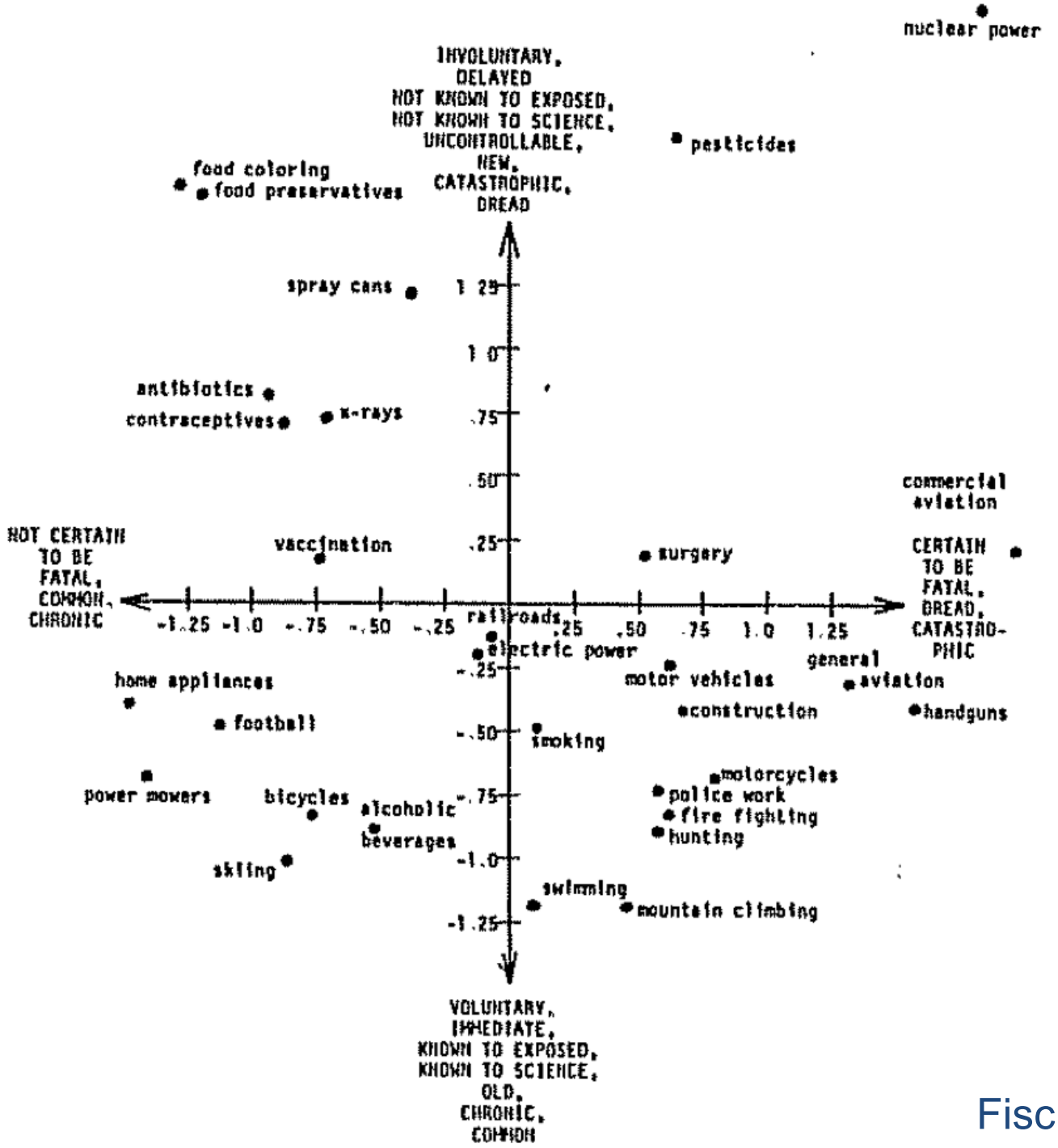


Obstacles better understood at individual than firm level

- Role of emotions
  - Psychological risk dimensions
- Prospect theory and Query theory
  - Predict aversion to change but also its transience

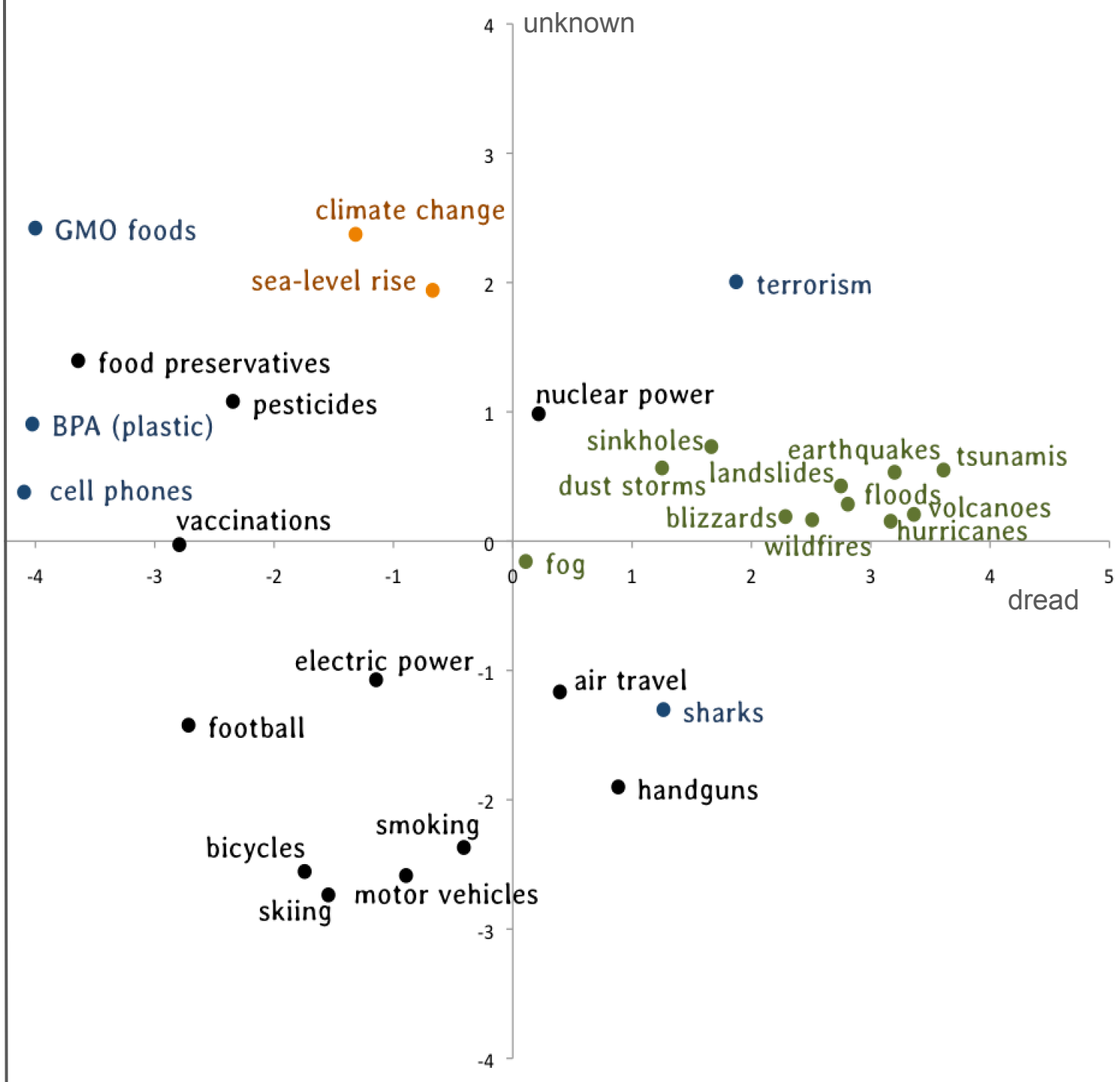


y: unknown factor
involuntary
delayed
unknown
uncontrollable
new

x: dread factor
fatal
dread
catastrophic

Fischhoff et al., 1978

Fox-Glassman & Weber, 2016



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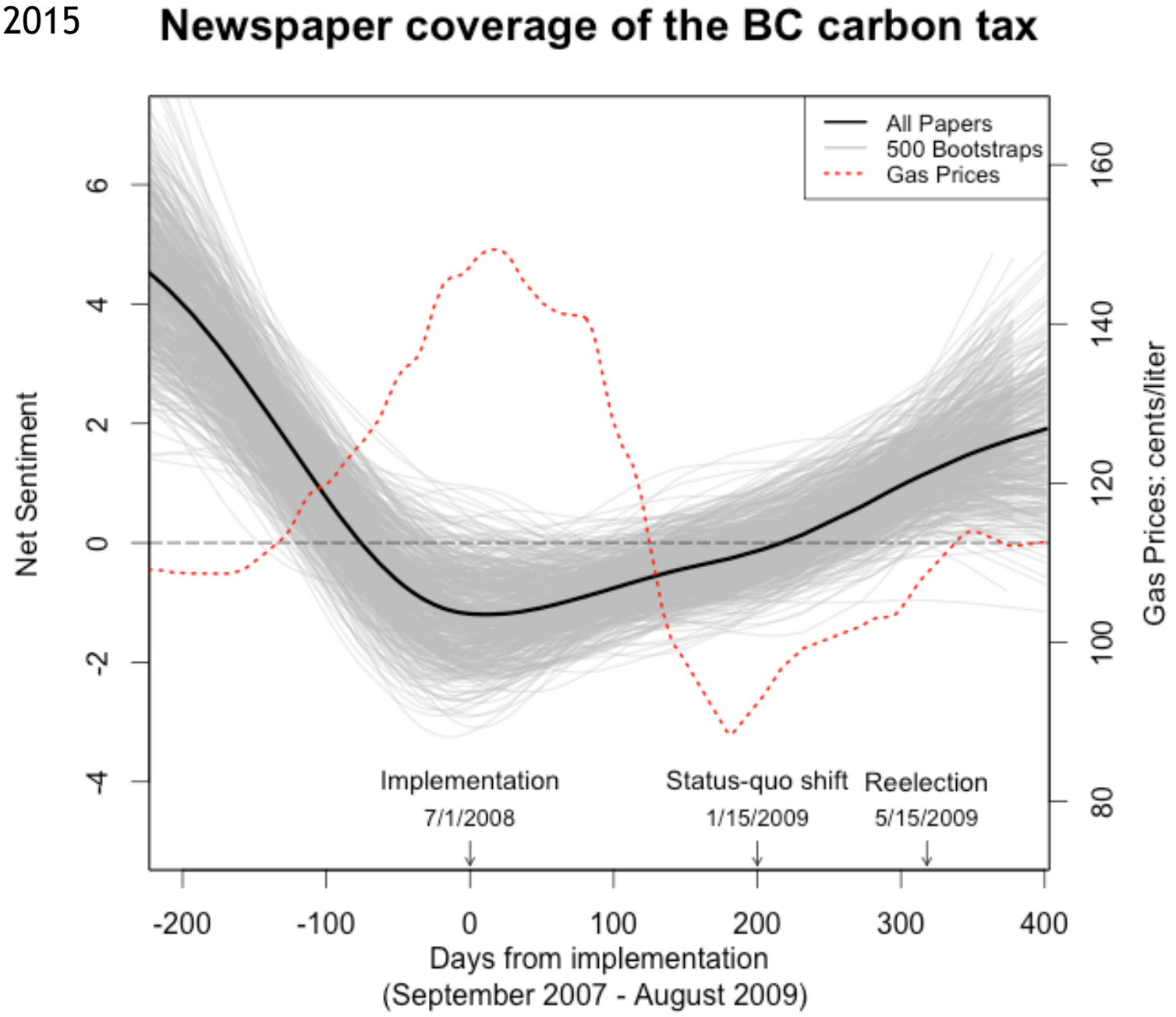
Opposition to Change

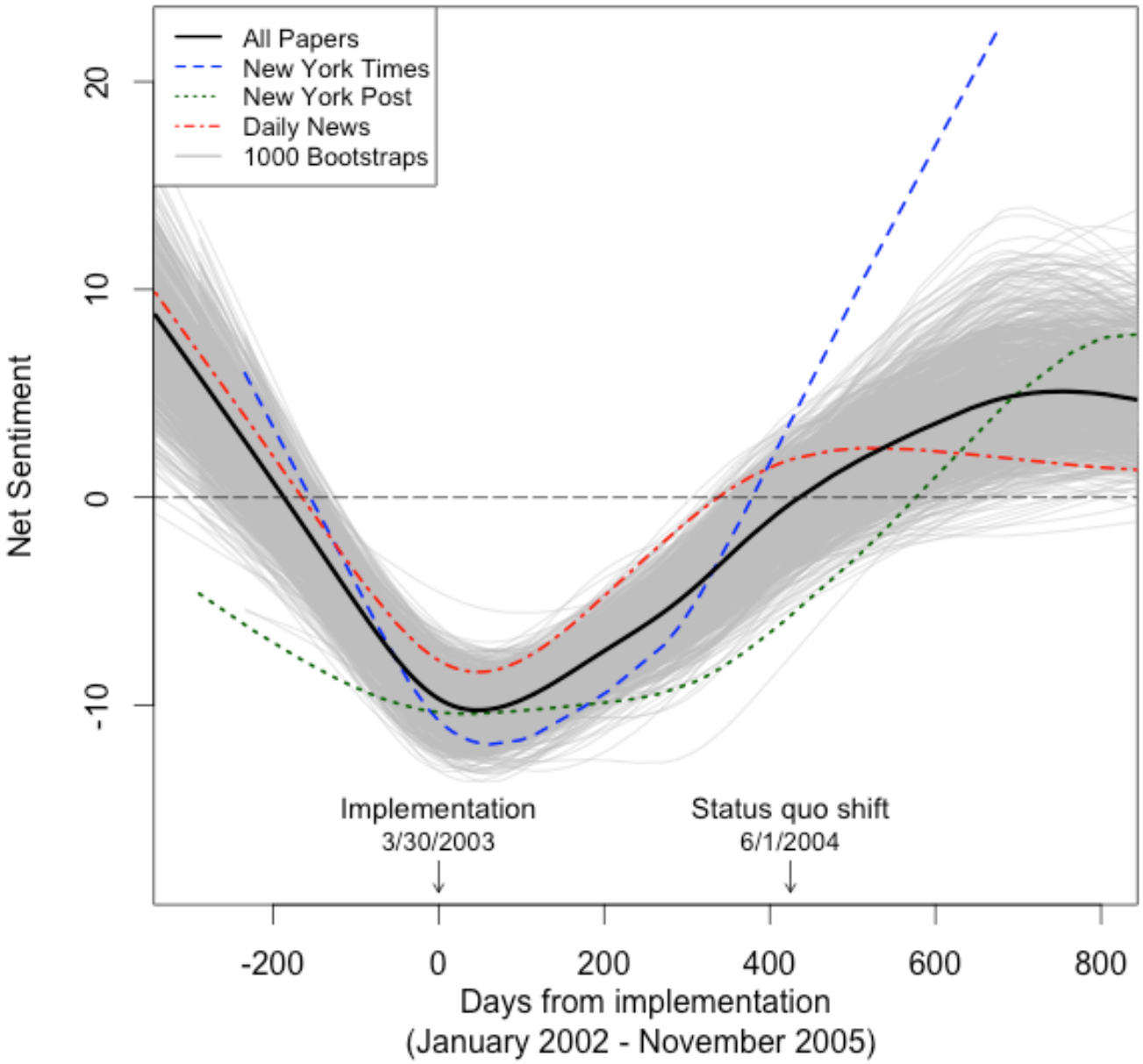
- 2008 British Columbia carbon tax
  - Revenue neutral tax on greenhouse gas emissions
- 2002 New York City smoking ban
  - Smoking banned in all public buildings in NYC

Weber, 2015


Newspaper coverage of the BC carbon tax
All Papers
500 Bootstraps
Gas Prices
Net Sentiment
Gas Prices: cents/liter
Implementation
7/1/2008
Status-quo shift
1/15/2009
Reelection
5/15/2009
Days from implementation
(September 2007 - August 2009)

Weber, 2015

Newspaper coverage of the NYC smoking ban



Solutions

- Aspirations matter, but implementation is key!
- Focus on “middle-out” and choice architecture can help
  - Smart decision defaults (opt-out vs. opt-in)
  - Judicious labeling
  - Change in rules, norms, standard-operating procedures that favor change
    - Building/construction codes
    - Rating systems
    - Safety standards, testing protocols