Decisions Matter:

Understanding How and Why We Make Decisions About the Environment

Elke U. Weber

Center for Research on Environmental Decisions (CRED)
Columbia University

DOE Workshop on Social and Behavioral Insights, Oct. 6, 2009

If…

- human behavior is responsible for many environmental problems (species loss, climate change),

- then changes in human behavior will be required to address these problems
  - different environmental decisions

Environmentally-relevant decisions made every day

- Energy consumption
  - Appliances, transportation, heating and cooling
- Water use
  - Showers, gardening, swimming pools, rice farming
- Land use
  - Deforestation, types of agriculture, city planning

Environmental Decision Characteristics

- Impact broad range of outcomes
  - Economic, political, as well as environmental consequences
- Involve tradeoffs between costs and benefits, often incurred at different points in time
  - Implicit discount rates extremely important
- Involve tradeoffs between individual and collective interests
  - Environmentally-responsible and socially-beneficial decisions typically go against short-term individual interests

Decision Research provides…

some good news

and some bad news

on prospects for better environmental decisions

No visceral reaction to environmental risks ☹

- No worry, no action *(Peters & Slovic 2000)*
  - Risk is a “feeling” *(Loewenstein, Weber, Hsee & Welch 2001)*
  - Analytic concern neither necessary nor sufficient

Analytic evaluations biased towards inaction ☹☹

- Many behavioral effects work against favorable evaluation of life style changes that entail immediate sacrifices for future uncertain benefits
  - Hyperbolic discounting
    - Time delays that prevent immediate consumption are especially disliked
  - Cognitive myopia and loss aversion
    - Excessive focus on self
    - Excessive focus on current decision (now, status quo)
  - Risk seeking in domain of losses
    - i.e., politicians and people are willing to take their chances with climate change rather than locking in “sure-loss” scenarios

Good News

"*Tragedy* of the commons" (Hardin 1968) can safely be downgraded to a "*drama*" (Ostrom et al. 2002)

- Humans are "cognitive misers" (limited attention, memory, and processing capacity), but also blessed with cognitive abundance of three types
  - Multiple goals
  - Multiple ways to represent information (framing)
  - Multiple ways of making decisions

Multiplicity and Mutability of Goals ☺

- Human needs and goals
  - Individual material/economic goals
  - Individual psychological goals
    - Need to feel confident, in control, effective
  - Social goals
    - Need to feel connected, concern for fairness and future generations
- Goals influence decisions only when they are activated at time of decision
- Goal activation both chronic and transient
  - Gender, age, and cultural differences in chronic activation levels of different goals
  - Temporarily activation (“priming”) of goals by choice context and content

Multiple Representations ☺☺

- Group context primes collective interests
  - Choices made in a group less impatient when deciding between immediate vs. delayed benefits *(Milch et al., 2009)*
- New “mental accounts” provide new goals
  - Personal carbon footprint accounts
  - Online fuel-efficiency displays in Toyota Prius
    - Turn behavior change into a “video game”

"Sorry, Harold, but I'm reducing our carbon footprint."

Multiple Representations, cont'd ☺☺

- Power of defaults *(Thaler & Sunstein, Nudge, 2008)*
  - Green technology defaults in building codes
    - Less heavy-handed than legislation outlawing incandescent light bulbs
- Attribute labels matter
  - Carbon *offsets* more palatable than carbon *taxes*, especially for Republicans *(Hardisty et al., in press)*

Multiple Ways of Making Decisions

☺☺☺

- Decisions get made in qualitatively different ways (Weber & Lindemann, 2007)
  - "by the head" → calculation-based decisions
  - "by the heart" → emotion-based decisions
  - "by the book" → rule-based decisions

Encouraging environmentally responsible choices in calculation-based decisions

- Make environmentally-responsible options the decision default
  - Or list them first
- Prime social goals (image of planet earth)
- But, be aware that a *lot of* behavioral effects will work against you

Encouraging environmentally responsible choices in emotion-based decisions

- Tempting to scare people into “right” behavior
- But, problematic *(Weber, 2006)*
  - Finite pool of worry
    - Increased worry about one hazard decreased worry about other hazards (*Linville & Fischer 1991)*
  - Single action bias
    - Tendency to engage in single corrective action to remove perceived threat

Encouraging environmentally responsible choices in rule-based decisions

- Much behavior driven by habits, based on past calculations or (often internalized) rules
- Need to create new habits, by following newly issued rules
  - Get respected authority to issue new rules of conduct (e.g., National Council of Churches mandate of "stewardship of the earth")
    - *"What would Jesus do?"*
  - Behavior prescriptions need to be concrete
    - *"What would Jesus drive?"*
  - Capitalize on social observation and imitation by having celebrities model desired behaviors
    - *"What does Angelina drive?"*

Conclusions

- Broad-based behavior changes discouraged for multiple reasons
  - Egocentric and shortsighted foci of attention
  - Rational incentives to defect in common-pool resource dilemmas
  - Existing behaviors largely automatic

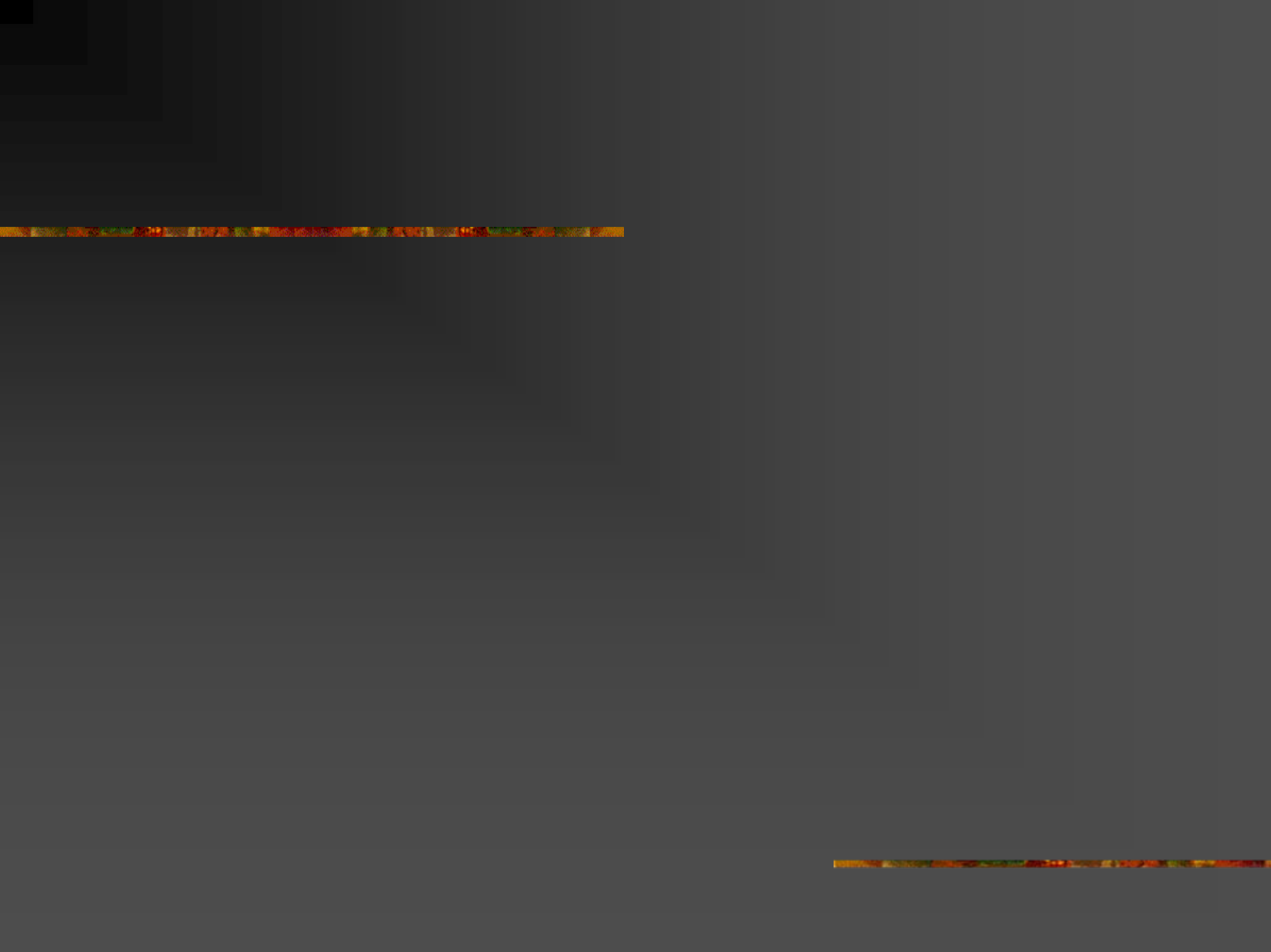
Conclusions, cont'd

- "Nudges" preferable to mandated behavior change
  - Rule-based decision processes to overcome myopia
  - Use of social learning and imitation to change undesirable automatic behavior
  - Use of group contexts to prime collective goals
  - New mental accounts and metrics to focus attention on environmental states and goals and measure progress

Acknowledgements

- National Science Foundation grants SES-0352062, SES-0720452, SES-0345840

- Colleagues at Center for Research on Environmental Decisions (CRED), in particular Eric Johnson and David Krantz



An environmental decision study

(Hardisty, Johnson, Weber, Psychological Science, 2009, in press)

- Broad agreement among economists and climate scientists on carbon tax as effective measure to curb CO_2 emissions and encourage alternative energy development
- Politicians loath to mention such a tax
- A carbon offset (and credit) industry has sprung up for people wishing to *voluntarily* pay more for CO_2 producing activities

Political Ideology

- Strong, reliable individual differences based on political conservatism (Jost, 2006)
- Conservatives sensitive to the labeling of financial options as "conservative" or "risk-tolerant" (Morris, Carranza & Fox, in press)
- Perhaps conservatives are uniquely sensitive to the “tax” label

Participants

- 373 US residents, recruited and run online
- 39% Democrats, 21% Republicans, 40% Independents or None of the Above

Information Provided

- 1-page description of a proposal that would increase the cost of certain products believed to contribute to global warming through energy use and resulting CO2 emissions
- Price increases described to be used to fund programs designed to decrease the level of carbon dioxide in the environment, through funding alternative energies or carbon sequestration
- Proposal described as either a carbon ***tax*** or a **carbon *offset***

Choice

Suppose you are purchasing a round trip flight from Los Angeles to New York city, and you are debating between two tickets, one of which includes a carbon tax [offset]. You are debating between the following two tickets, which are otherwise identical. Which would you choose?

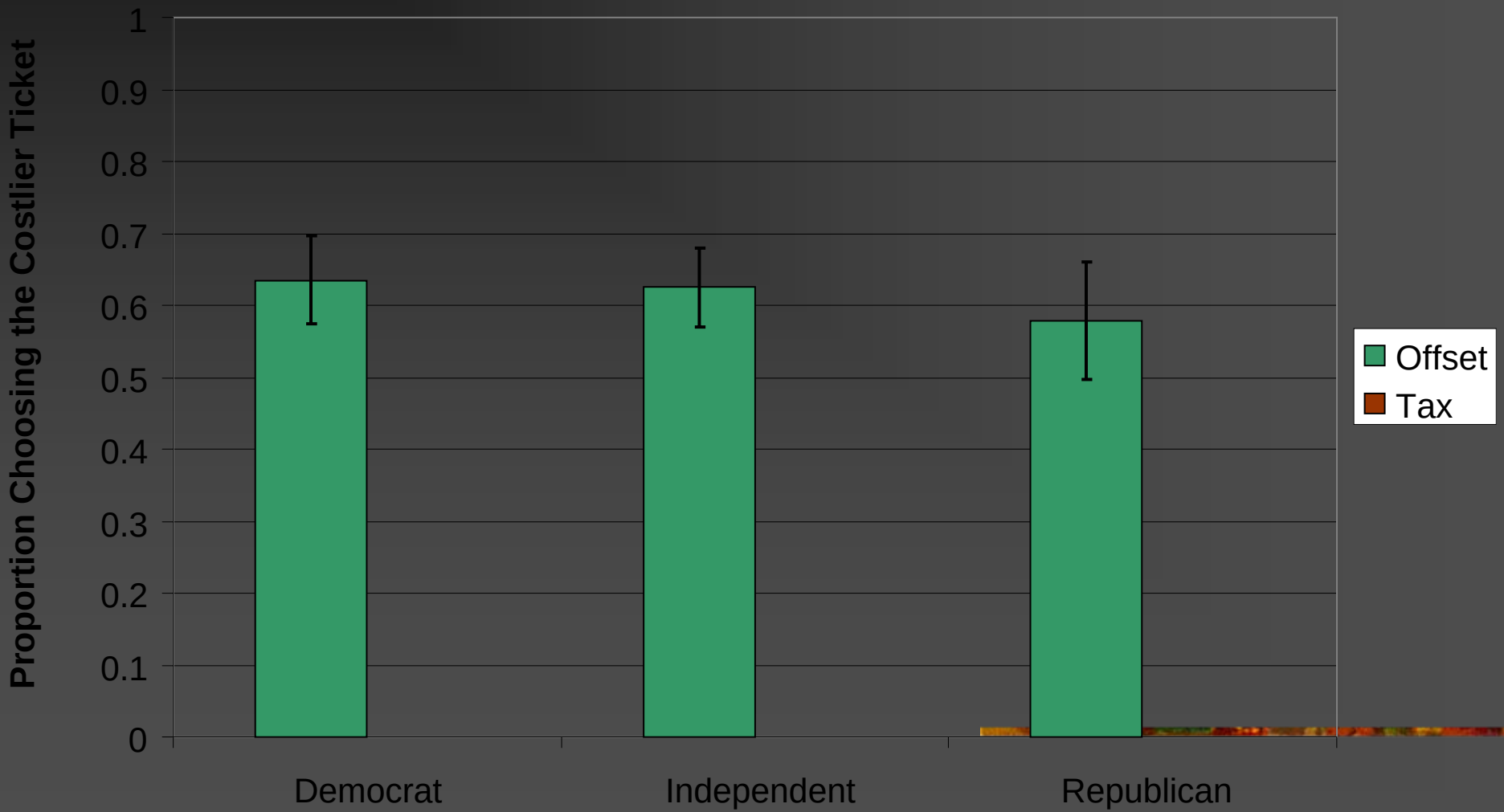
Ticket A	**Ticket B**
$392.70 round trip ticket includes a carbon tax [offset]	$385.00 round trip ticket

- How strongly would you prefer Ticket A or Ticket B? (5-point scale, “Strongly Prefer A” to “Strongly Prefer B”)
- Do you think the carbon tax included in Ticket A should be made mandatory for all airline tickets sold in the US? (7-point scale, “Definitely” to “Definitely Not”)

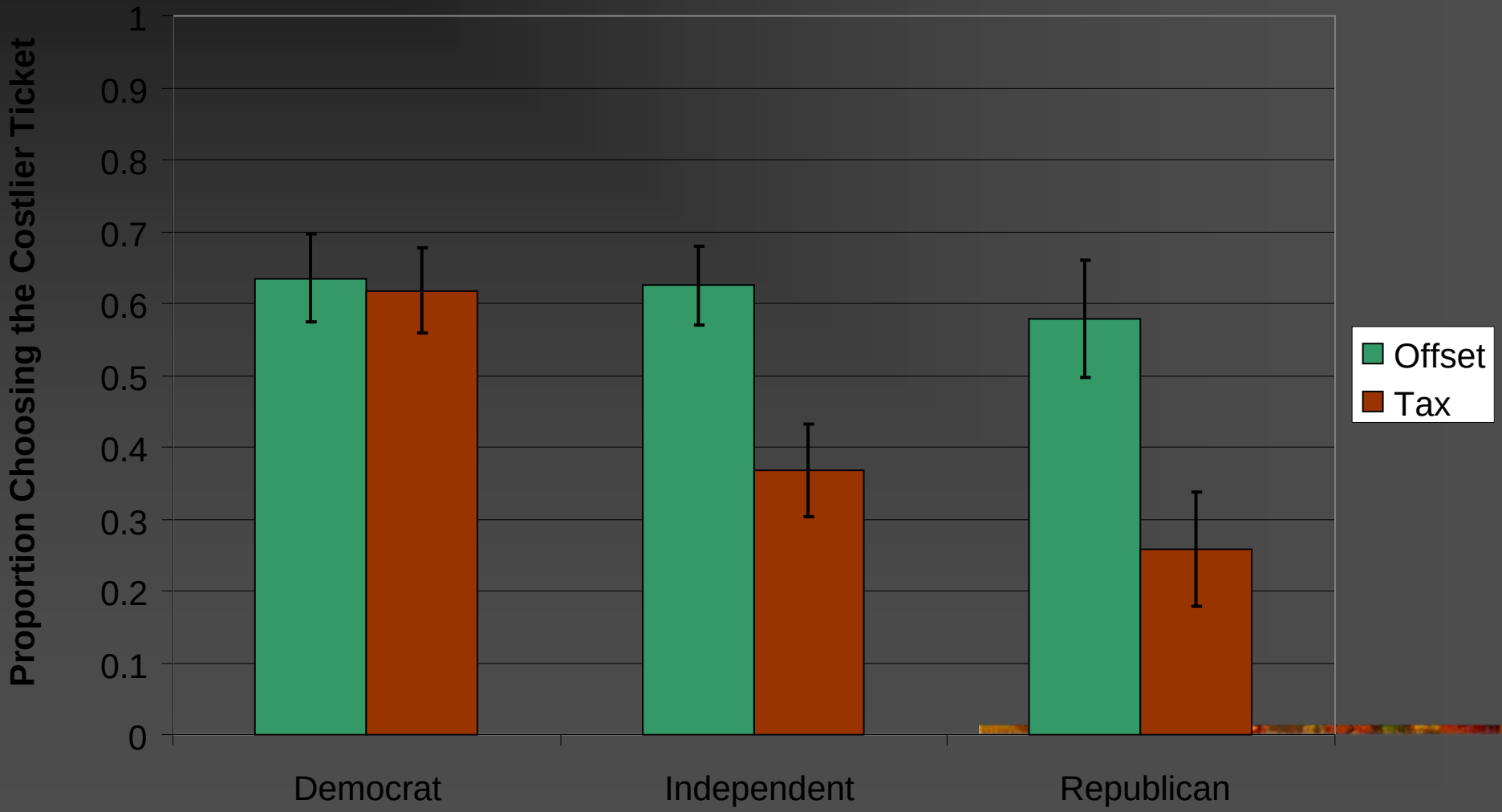
Procedure

- Read the description of the tax/offset program
- Listed their thoughts about the two airline tickets
- Indicated their choice, preference, and support for regulation
- Demographics

Results: Choices



Results: Choices



Tax/Offset Label Study Conclusions

- Attribute label influences choice, as a function of political affiliation
  - Different affective associations to offset vs. tax label
- Attribute label affects the order in which choice options are considered, which affects balance of evidence, which predicts choice