



*Decisions Matter:
Understanding How and Why We Make
Decisions About the Environment*

Elke U. Weber
euw2@columbia.edu

Center for Research on Environmental Decisions (CRED)
Columbia University

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If...

- human behavior is responsible for many environmental problems (species loss, global warming, soil depletion, etc.),
- **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

Bad News

- Decision research shows that
 - Evolution has not (yet) provided us with appropriate visceral reactions to many environmental risks
 - Analytic evaluations are also biased towards inaction

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
- Environmental risks don't score very highly
 - Do you wake up at night worrying about climate change?

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
 - Impact of rare events
 - Negative consequences of non-environmentally-responsible behavior have small probabilities, at least in the present or near future
 - Such probabilities get underweighted in decisions from experience, because of large weight on recent observations (Hertwig et al. 2004, 2006, Weber Shafir Blais 2004)

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 and by 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 😊😊

- Reframe climate change mitigation costs as foregone or actual gains (new industries)
- Power of defaults (*Thaler & Sunstein, Nudge, 2008*)
 - Green technology defaults in building codes
 - Less heavy-handed than legislation outlawing incandescent light bulbs (*Australia, effective 2012*)
- 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 use other ways to have them considered first
 - Put first on ballot
- Prime social goals (image of planet earth)
- 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
- Problematic for at least two reasons
 - 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 (*Weber, 2006*)
 - Yet, most environmental problems require portfolio of responses

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

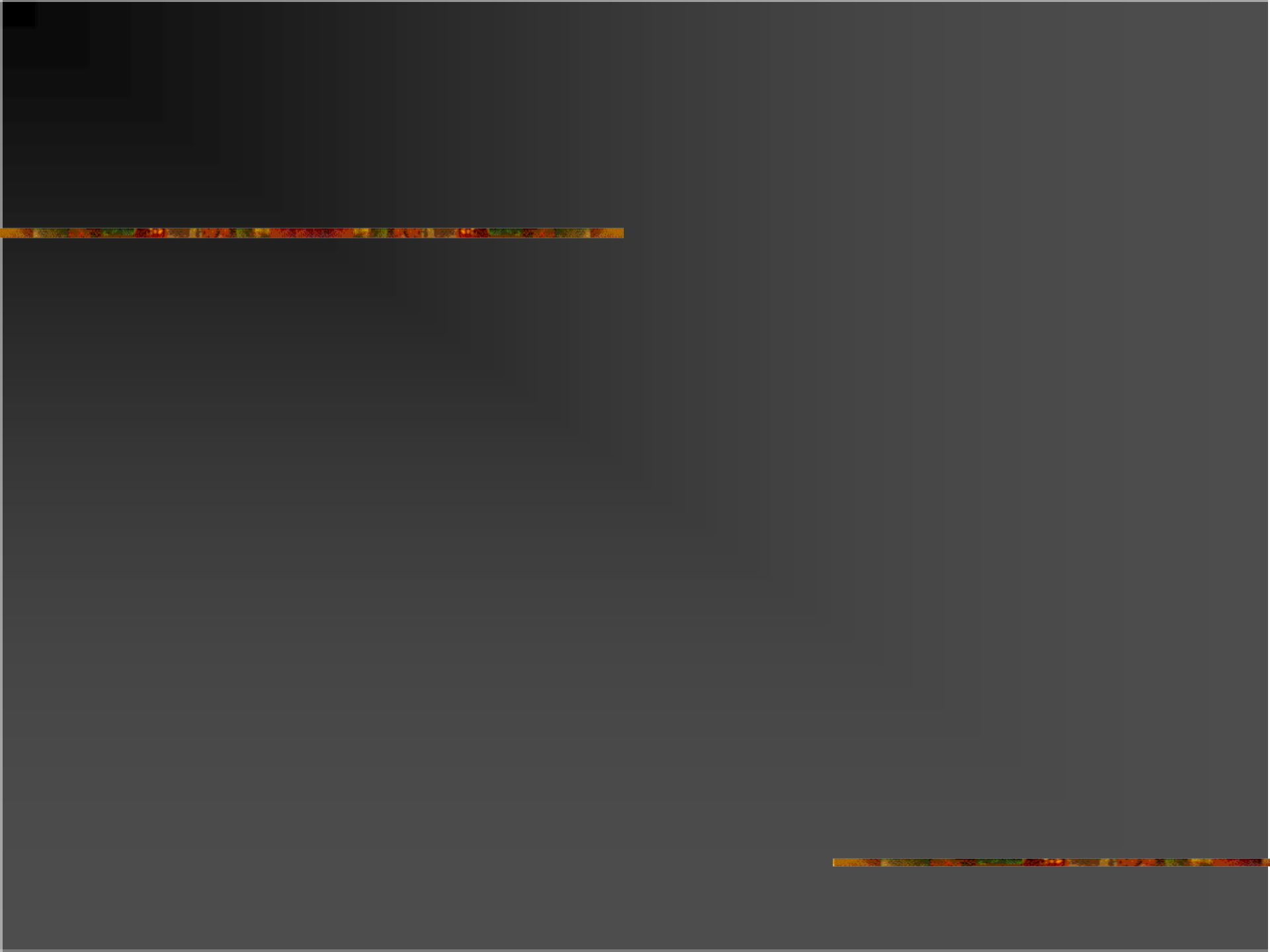
- Solutions to environmental problems require broad-based behavior changes that are discouraged for multiple reasons
 - Egocentric and shortsighted foci of attention
 - Rational incentives to defect in common-pool resource dilemmas
 - Existing behaviors largely automatic
 - Nondeliberative behaviors hard to change by modifying incentive structure
 - Fear appeals problematic

Conclusions, cont'd

- “Nudges” preferable to mandated behavior change
 - Shift from calculation- or emotion-based to rule-based decision processes
 - Helps overcome myopic self-interest
 - Use of automatic processes (social learning and imitation) to overcome and change undesirable automatic behavior
 - Use of group contexts and other contextual nudges to prime social and collective goals
 - Introduction of new mental accounts and metrics to focus attention on environmental states and goals and to measure progress
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An environmental decision study

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

- Broad agreement among economists and climate scientists on carbon tax as effective measure to curb CO₂ 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 CO₂ 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**
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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?

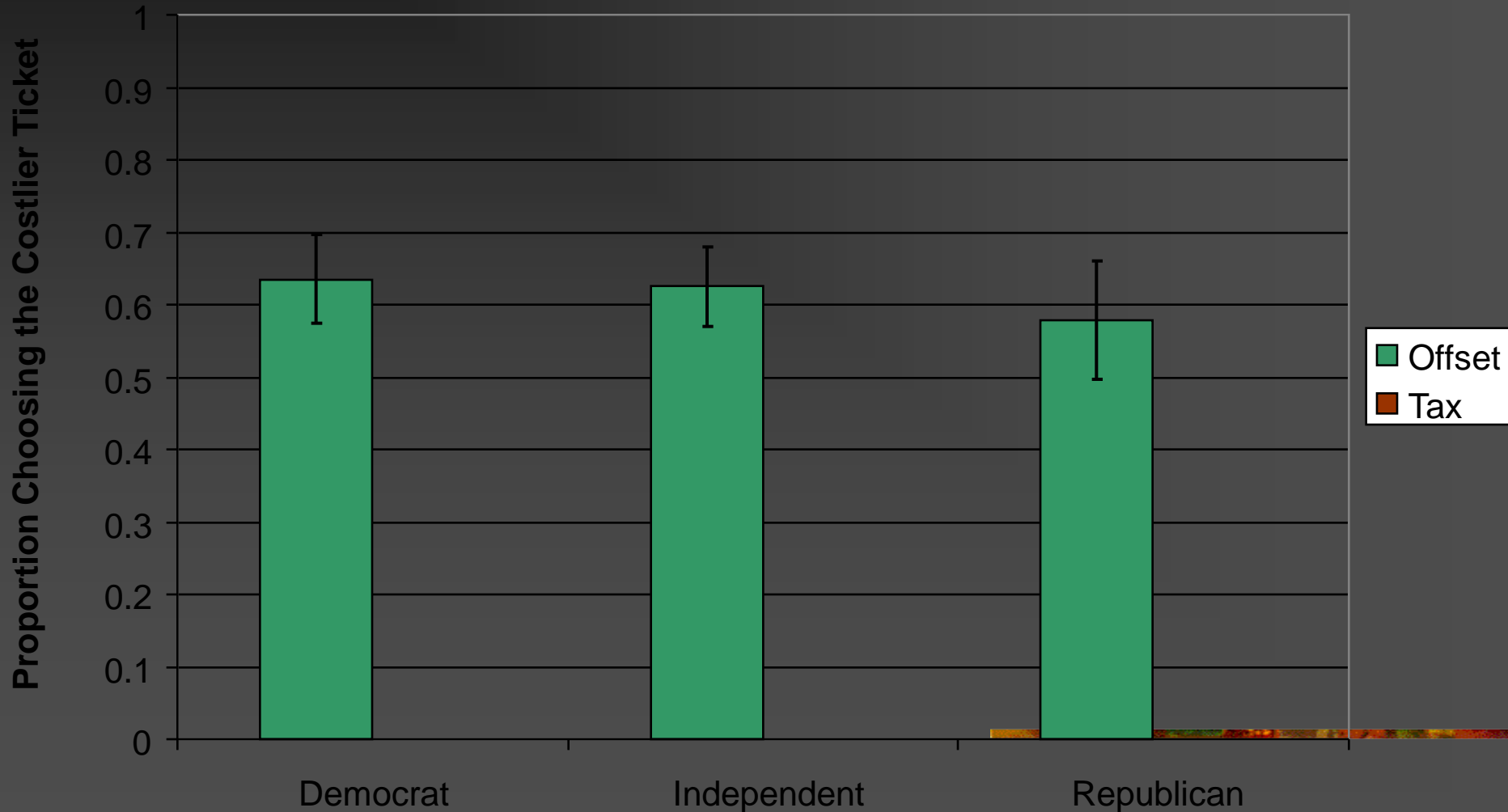
Ticket A	Ticket B
\$392.70 round trip ticket includes a carbon tax [offset]	\$385.00 round trip ticket

- 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”)

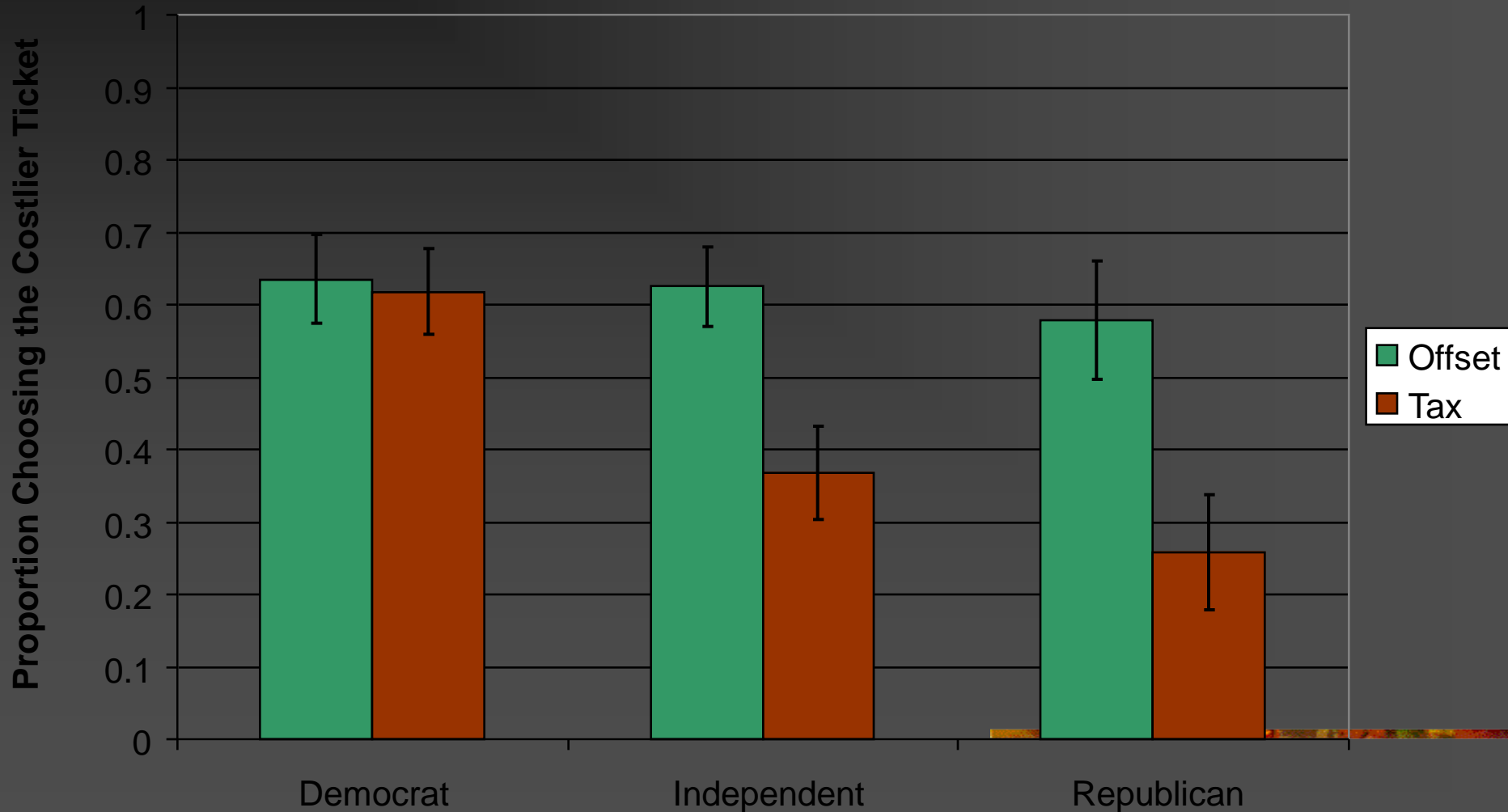
Procedure

- 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