

# Sparking interest in solar adoption: How messaging affects the choice to engage with solar power



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Before we get  
to there...

We have to  
start here...



# Political Leanings and Energy Choices



- Conservatives reject energy efficient bulbs with environmental label (Gromet et al., 2013)
- Republicans reject extra cost framed as carbon tax but not carbon offset (Hardisty et al., 2010)

# Motivating Messages and Regulatory Focus

- Prevention vs. promotion focus (Higgins, 1997, 1998)
- Prevention focus: Emphasis on obligations and avoiding negative outcomes
- Promotion focus: Emphasis on desires and achieving positive outcomes
- Regulatory fit: Messages that match a person's focus in a given situation should be more effective (Cesario et al., 2004; Higgins, 2000)



# Reducing Energy Waste



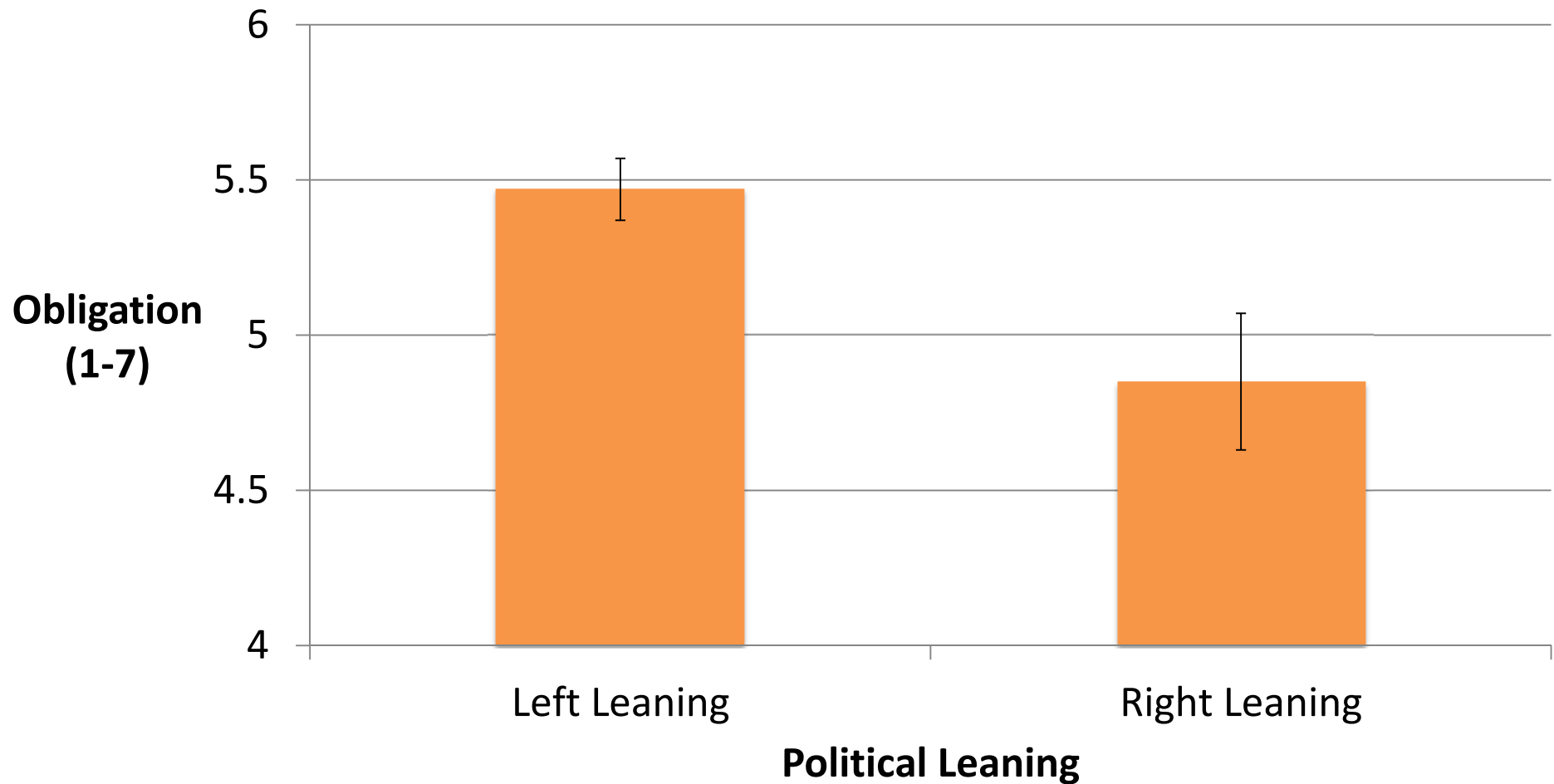
## Reduce Your Carbon Footprint

Traditional electricity is sourced from fossil fuels such as coal, oil and natural gas. When fossil fuels are burned to create energy, they emit toxic gases that are the primary cause of pollution and global warming. Solar energy is abundant, clean and pure.

# Reducing Negative Consequences (Prevention Focus)

- Attract those who are concerned about the negative effects of current energy use
  - Appeals to sense of obligation
- Pew Poll (October 2013)
  - Global warming is mostly due to human activity:
  - 64% of Democrats vs. 23% of Republicans

# Obligation to conserve energy



$B = -.21, SE = .04, t(727) = -5.53, p < .001$

# Hypothesis

- Emphasizing the reduction of negative consequences will attract the political left, but repel the political right





# **REDUCE FOSSIL FUELS INCREASE RENEWABLE ENERGY**

- Increasing positive consequences  
(Promotion Focus)
  - Emphasizes benefits from adoption
  - More attractive to political right

# Overview of Studies

- Studies 1 and 2:

- Study 3:



# Study 1: Choosing to Learn About Solar

- Sample: 904 California homeowners who did not have solar panels installed
  - Measured political leanings (ideology and affiliation) at end
- Participants presented with four different home improvement options
  - One of which was installing solar panels
- Key measure: Which option they choose to learn about
  - First step to becoming a solar adopter



# Study 1: Choice of What to Learn About



# Study 1: Solar Message Frame

## Message Frame

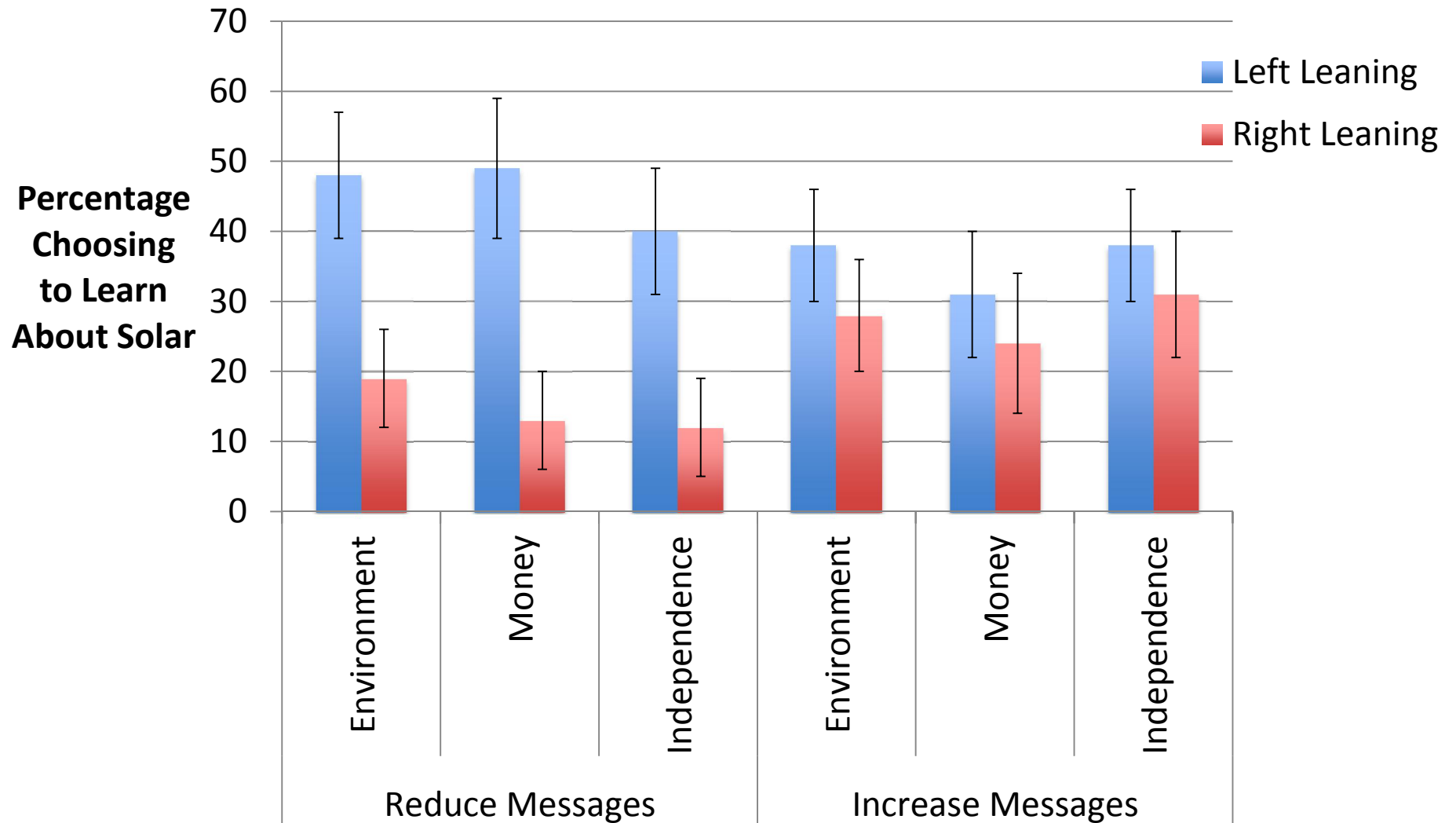


# Solar Message Frame

- Solar as Reducing Negative Consequences
  - Want to Reduce Your Carbon Footprint? (Environment)
  - Want to Reduce Your Energy Costs? (Monetary)
  - Want to Reduce Your Reliance on Utility Companies (Independence)
- Solar as Increasing Positive Consequences
  - Want to Greenify Your Energy Use? (Environment)
  - Want to Take Control of Your Energy Costs? (Monetary)
  - Want to Produce Your Own Energy? (Independence)



# Choice Based on Frame and Political Leaning



Label x Political Leaning:  $B = -1.00$ ,  $SE = .43$ ,  $Wald = 5.54$ ,  $p = .019$

## Study 2: Choice of What to Learn About



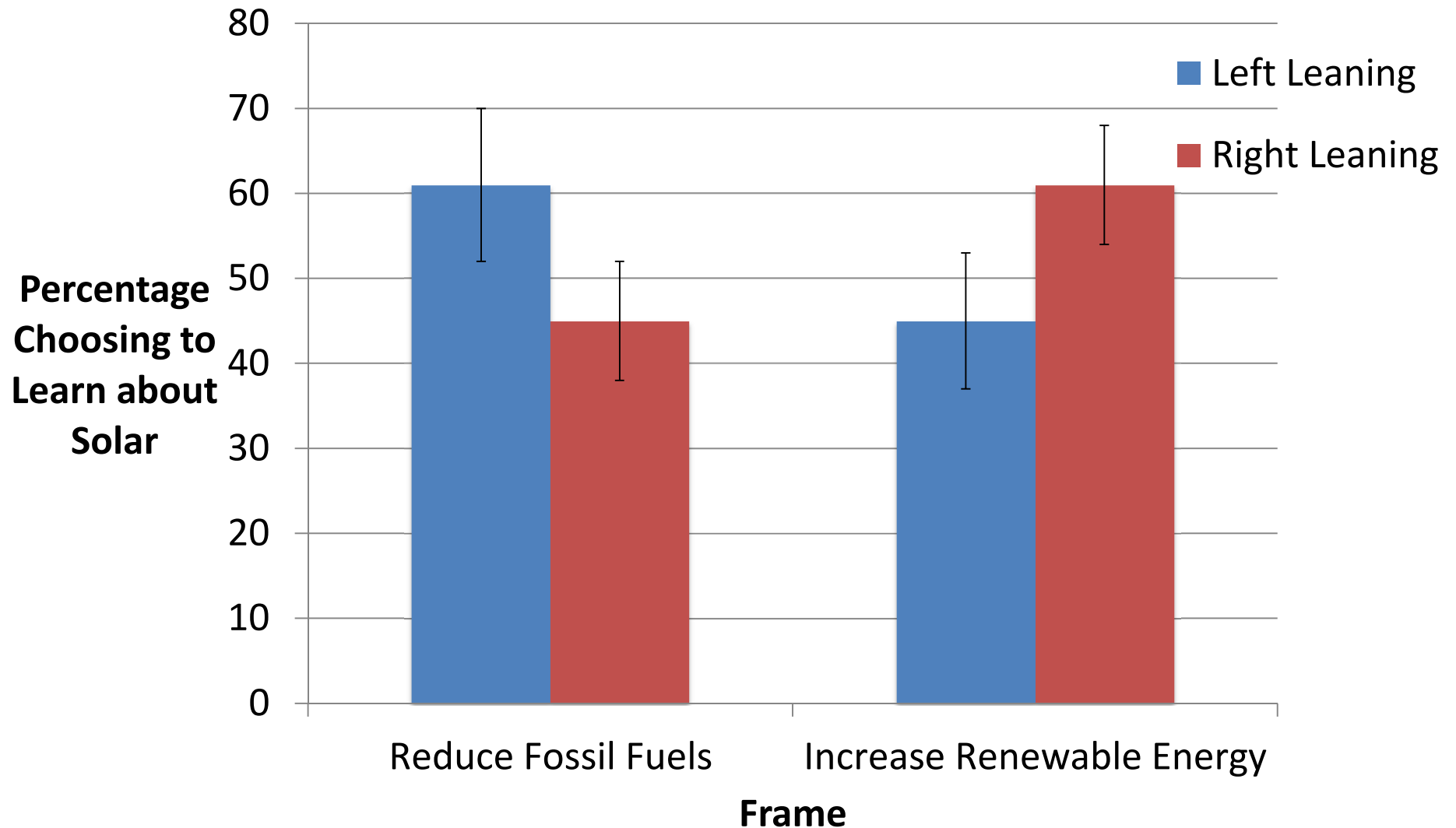
## Study 2: Solar Message Frame

**Reduce your  
use of  
fossil  
fuels!**



**Increase your  
use of  
renewable  
energy!**

# Choice Based on Frame and Political Leaning



Label x Political Leaning:  $B = .15$ ,  $SE = .08$ ,  $Wald = 3.94$ ,  $p = .047$

- Who chooses to learn about solar depends on message frame
  - Political left responds to reducing negatives
  - Political right responds to increasing positives
- Energy domain: Political left more motivated by obligation; political right more motivated by benefit
  - Additional benefit may amplify this effect
  - Price discount could further emphasize benefit over obligation

# Study 3: Light bulb choice

- Participants (N = 356) given \$0.90 to purchase CFL bulb (**energy efficient**) or keep for themselves
- Message Frame Manipulation: Reduce negative versus increase positive
- Perceived Discount Manipulation: Price is presented as discounted versus not



**REDUCE YOUR ENERGY WASTE!**

**Buy a CFL for \$0.90**



**INCREASE YOUR ENERGY EFFICIENCY!**

**Buy a CFL for \$0.90**

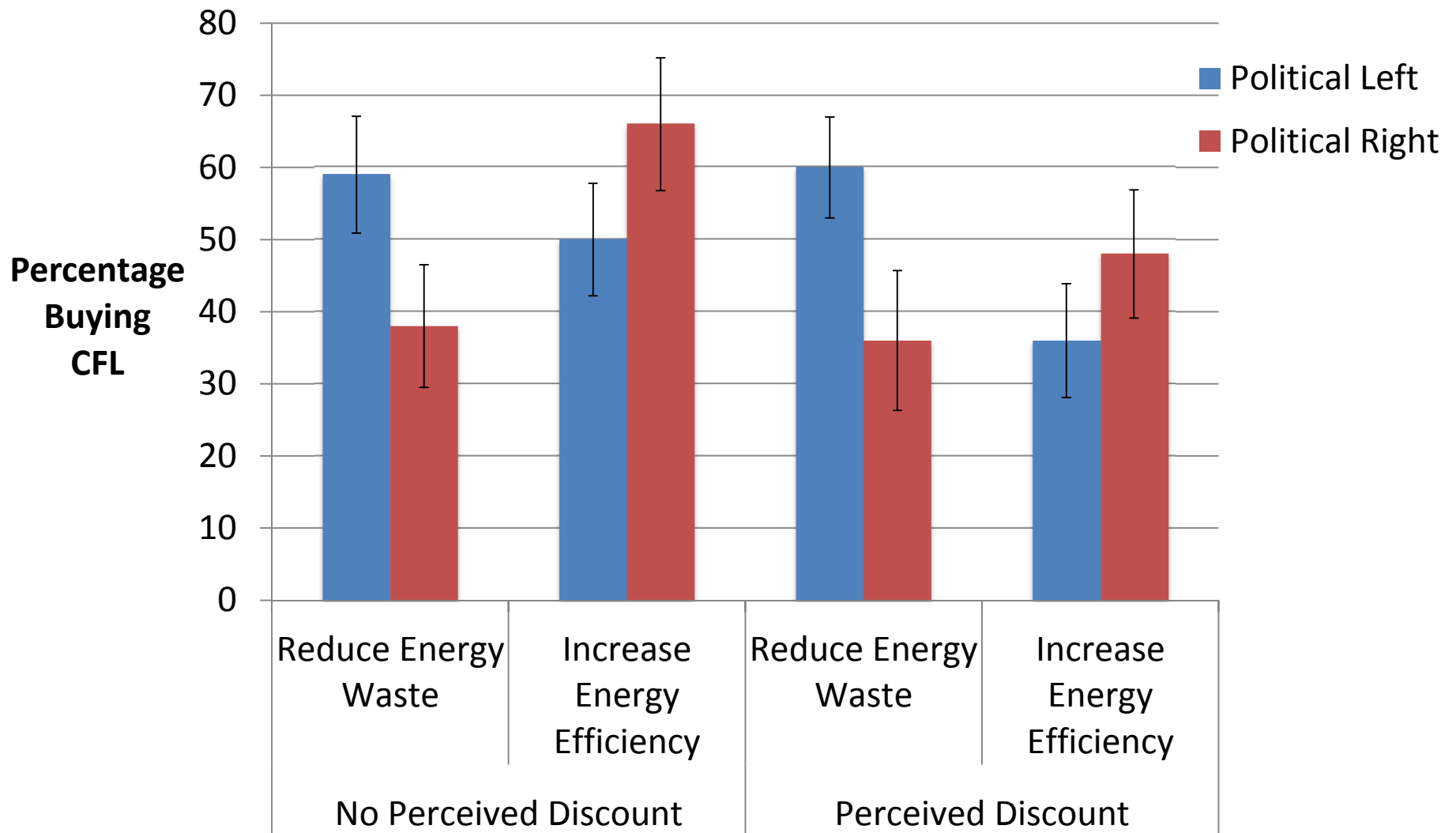


**INCREASE YOUR ENERGY EFFICIENCY!**

**Buy a CFL for ~~\$2.00~~  
NOW ONLY \$0.90**



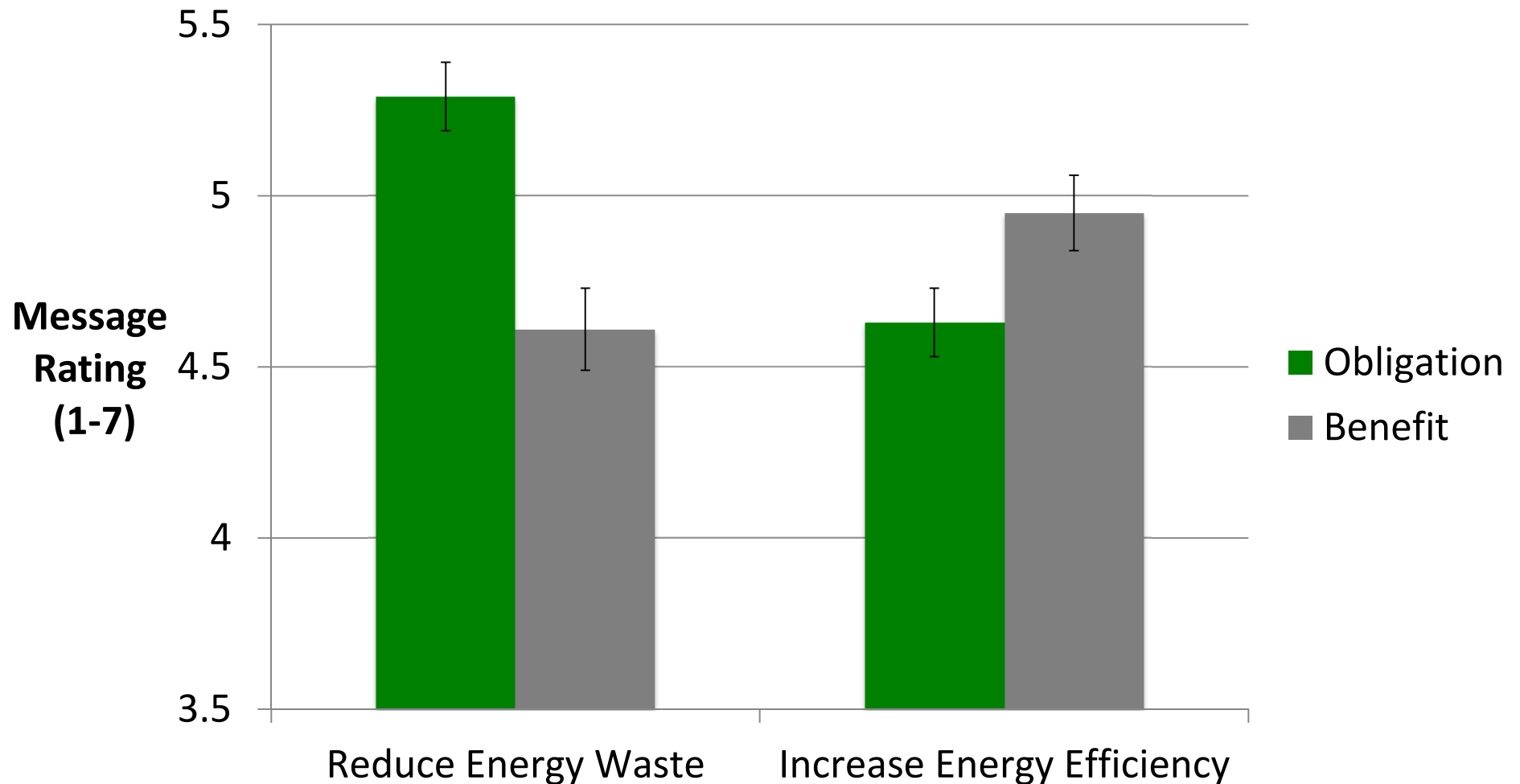
# Choice based on frame and political leaning



Frame x Political Leaning:  $B = 0.41$ ,  $SE = .13$ ,  $Wald = 10.54$ ,  $p = .001$

Frame x Political Leaning x Discount:  $B = 0.03$ ,  $SE = .13$ ,  $Wald = 0.05$ ,  $p = .82$

# Obligation and Benefit Conveyed by Message



Message Frame x Obligation/Benefit:  $F(1, 351) = 26.29, p < .001$

# Summary

- Reducing negative consequences (prevention focus) appeals more to those on political left
  - Conveys greater obligation to choose sustainable energy options
- Increasing positive consequences (promotion focus) appeals more to those on the political right
  - Conveys greater benefit from choice
- Tradeoff: Frame that resonates with one group turns off the other group



# Implications

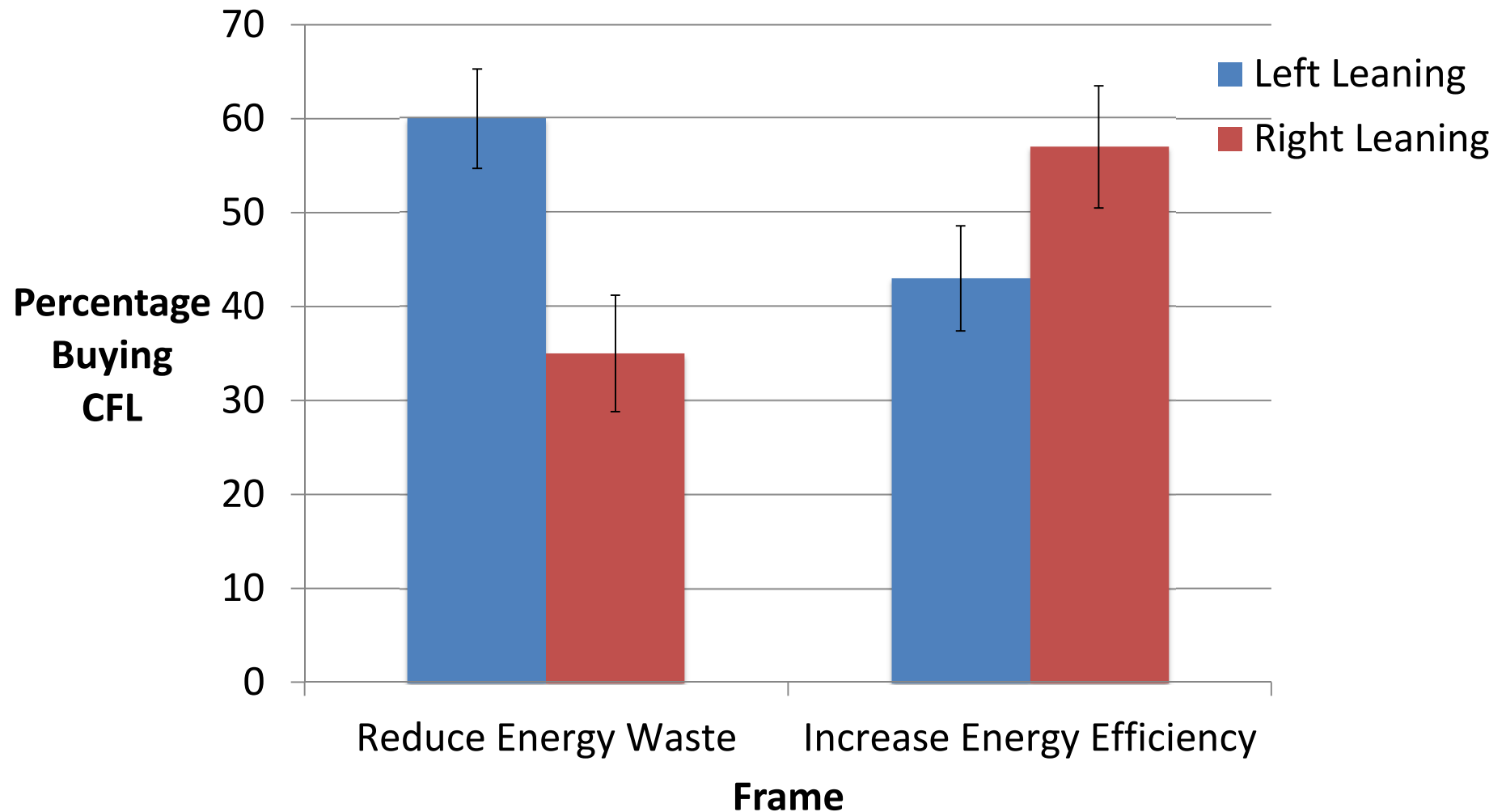
- Messages may affect who takes first step in adopting solar



- Importance of knowing your audience and segmentation



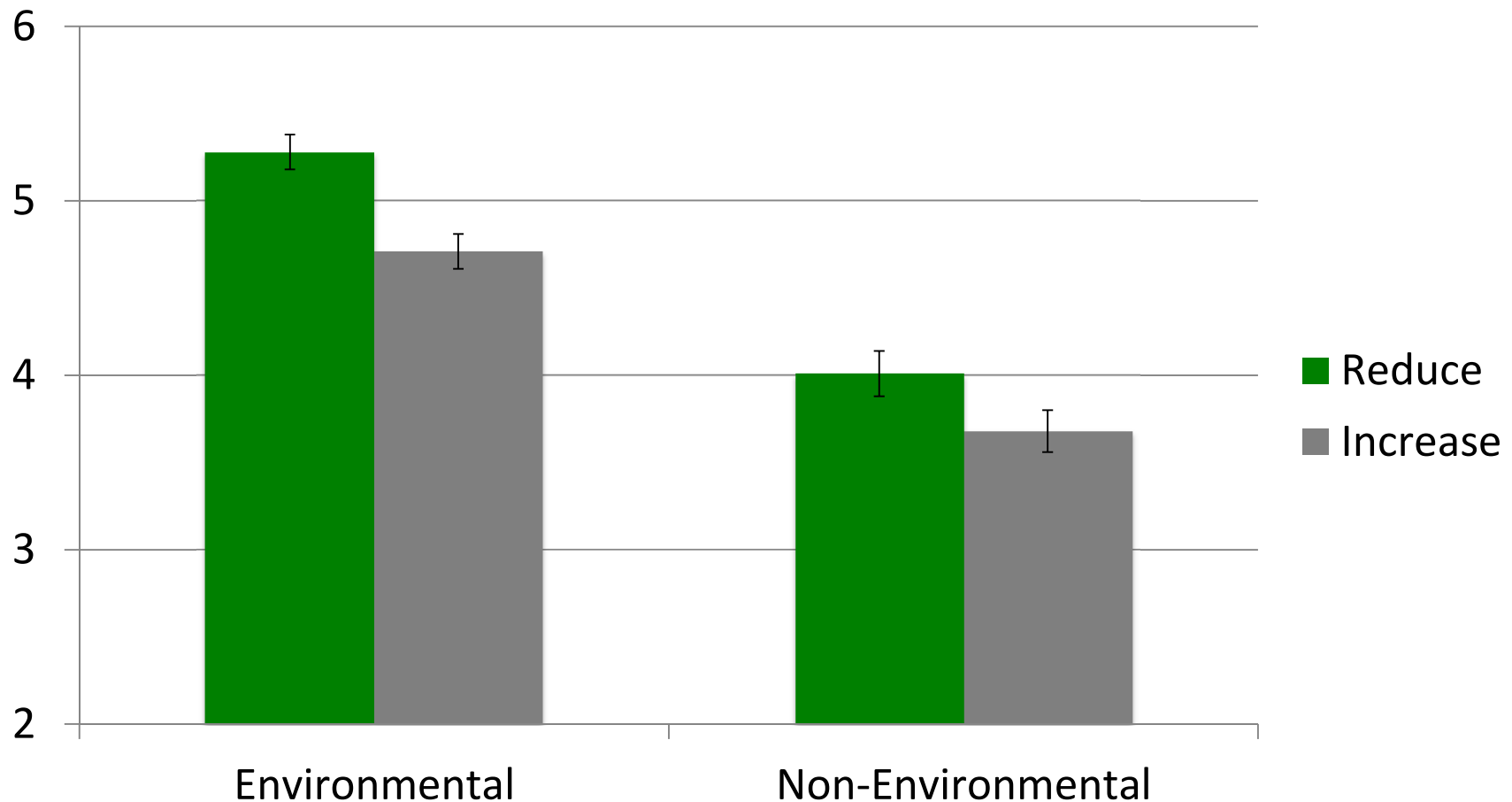
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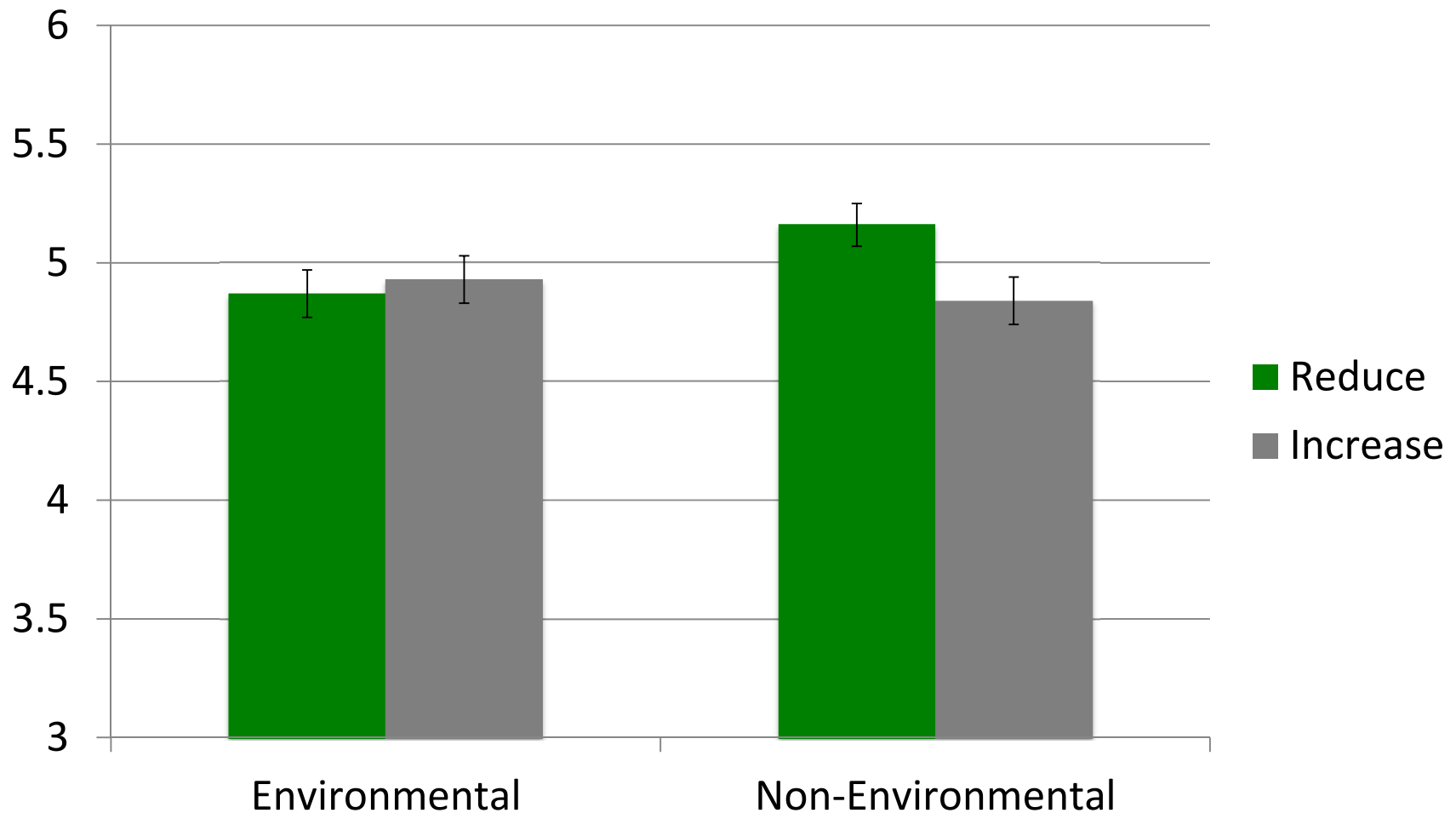
Frame x Political Leaning x Discount:  $B = 0.03$ ,  $SE = .13$ ,  $Wald = 0.05$ ,  $p = .82$

# Obligation Conveyed By Message



Reduce vs Increase:  $F(1, 798) = 15.72, p < .001$   
Interaction:  $F(1, 798) = 1.13, p = .29$

# Effectiveness at Reducing Emissions



Interaction:  $F(1, 798) = 3.67, p = .056$

# Importance to Adoption Decision

	Importance (1-5)
Lowering electricity cost	4.40 <sub>a</sub>
Protection from electricity cost increase	4.21 <sub>b</sub>
Helping environment*	3.80 <sub>c</sub>
Increasing home's value	3.78 <sub>c</sub>
Making home easier to sell	3.40 <sub>d</sub>

	Liberals	Conservatives
Lowering electricity cost	4.55 <sub>a</sub>	4.43 <sub>a</sub>
Protection from electricity cost increase	4.25 <sub>b</sub>	4.24 <sub>b</sub>
Helping environment	4.20 <sub>b</sub>	3.45 <sub>d</sub>
Increasing home's value	3.90 <sub>c</sub>	3.90 <sub>c</sub>
Making home easier to sell	3.45 <sub>d</sub>	3.45 <sub>d</sub>