

**Public Opinion and the Environment:  
How Does Message Framing Influence Public Attitudes about Environmental  
Regulations?**

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## **Abstract**

Message framing is a common strategy that politicians, government officials, and the media use when communicating with the public about environmental issues. However, message frames about environmental regulations are often misleading, potentially reinforcing misinformation and misperceptions among the voting public. This may translate into a net shift in the level of public support for or opposition against environmental policies and regulations. With this paper, I attempt to answer the following policy question: how does message framing affect public opinion about environmental regulations? I first analyze a sample of polling data from the Roper Center for Public Opinion Research's iPOLL Databank to: 1) identify the most commonly used environmental message frames over the past decade (2004-2014), and 2) determine how these frames affect survey results. Then, using these message frames, I conduct a survey of the voting public to examine whether persuasive pro-environmental messaging can elicit survey responses that differ from observed historical patterns. I find that message frames emphasizing environmental regulations' benefits to public health and economic growth generate more pro-environmental responses than frames that simply stress the need for environmental protection. Environmental groups who engage in future policymaking and advocacy efforts can use these findings to inform more effective message framing strategies that may prompt the public to express greater support for environmental regulations and environmental issues in general.



## Public Opinion and Environmental Policy

*"Our government rests in public opinion. Whoever can change public opinion, can change the government."*

-- Abraham Lincoln, December 10, 1856

Are environmental regulations job creators or job killers? Do cap-and-trade policies and restrictions on coal-fired plants reduce rates of asthma and chronic lung disease? How much money should the government spend on ecological conservation? Questions like these have dominated public debate in the United States about environmental issues since environmentalism's rise to political prominence in the early 1970s. To assess voter attitudes about the burgeoning environmental movement, major pollsters began consistently asking respondents how they felt about environmental policy and environmental regulations.

Over time, these environmental polls and surveys received national media coverage, encouraging policymakers to consider results when drafting and debating legislation (Stonecash, 2003; Kingdon, 2011; Daniels et al, 2013). The literature supports this trend, showing a positive association between public opinion toward environmental policy and government responsiveness. Johnson, Brace, and Arceneux (2005) find that greater public support for regulations that protect the environment relate to an increased adoption of federal environmental policies. Agnone (2007) also observes that a more pro-environmental national mood is positively associated with the number of pro-environmental laws passed by Congress each year.

Though government officials may look to polling results to inform their decision-making, there is growing evidence that public opinion may not be the most reliable guide for policy. Studies show public opinion is malleable and highly responsive to political cues and messages (Kuklinski et al, 2000; Bartels, 2008). Some scholars even hold that powerful message framing can drive public opinion about an issue (Terkildsen and Schnell, 1997; Chong and Druckman, 2007). If this is the case, then inaccurate or dishonest messages may falsely sway public opinion in support or opposition of an issue. Daniels et al (2013) find that the American public's level of support for environmental regulations can be easily manipulated through deceptive message framing. The authors identify popular message frames used in political dialogue about environmental issues. Then, by changing a few keywords in a survey item to reflect these political messages, Daniels et al (2013) make it appear as if voters are overwhelming pro-environmental, completely ambivalent about the environment, and almost everything in between.

With this paper, I attempt to answer the following policy question: how does message framing affect public opinion about environmental regulations? I begin by discussing message framing around environmental regulations, referencing academic literature

about framing effects and voter misperceptions. Next, I analyze a sample of polling data from the Roper Center for Public Opinion Research to see how the most commonly used environmental message frames influence polling results. I identify the three main message frames employed in public opinion polling about environmental regulations over the last ten years. Then, using these frames, I conduct a survey of the voting public, examining whether persuasive pro-environmental message frames can elicit survey responses that deviate from the observed historical pattern. Last, I discuss the implications of this paper's findings for future environmental policymaking and advocacy work.

### **Framing Environmental Regulations**

Message framing is, by far, the most common strategy used to influence public opinion (Chong and Druckman, 2007). Politicians, government officials, and the media employ frames whenever they communicate with the public (Druckman and Nelson, 2003; Chong and Druckman, 2007). Public opinion research shows that framing impacts choices the public makes about policy issues by encouraging citizens to stress certain considerations over others when forming their own opinions (Druckman and Nelson, 2003; Chong and Druckman, 2007). A successful framing effect takes hold when citizens adopt a different position on an issue than they normally would because of the considerations they were lead to prioritize (Druckman and Nelson, 2003). This effect can, in turn, translate into a net shift in the level of public support for or opposition against a policy.

If message framing can influence public opinion, as the literature shows, then frames rooted in biased, misleading or false information are especially problematic (Kuklinski et al., 2000; Nyhan and Reifler, 2010). Politicians and other political elites may have incentive to misrepresent factual information about policy issues to the voting public (Nyhan and Reifler, 2010). As citizens are exposed to more and more misleading message frames, it becomes increasingly difficult for them to accurately evaluate and inform policy decisions. Stern et al (1995) argue message framing not only influences how citizens make sense of current policy, but also informs how they understand future policy. The authors find that informed environmental beliefs and attitudes operate as a filter for interpreting and responding to new, emerging environmental issues. If voters take up deceptive message frames about environmental policy issues, then it is likely they will view other environmental issues through the same biased lens.

Environmental regulations are often targets for misleading political message framing. Politicians and political elites frequently frame environmental regulations as “job killers” to encourage an anti-environment sentiment among the voting public. In a 2011 Republican primary debate, presidential candidate Representative Michelle Bachmann quipped that the U.S. Environmental Protection Agency (EPA) “...should be renamed the ‘job-killing organization of America’” (Conglianese et al, 2013). Republican presidential

candidate Governor Mitt Romney's 2012 campaign platform warned, "...Sweeping [environmental] mandates, imposed unilaterally in the United States, would kill jobs, depress growth and shift manufacturing to the dirtiest developing nations." Members of Congress have also weighed in on the perceived dangers of environmental regulations. In 2010, after introducing a bill that would block the EPA from regulating greenhouse gas emissions from power plants, Senator John Rockefeller (D-WV) stated, "I believe we must send the strong and urgent message that the fate of our economy...and our workers should never be placed solely in the hands of the federal Environmental Protection Agency." Additionally, in discussing the EPA's alleged "War on Coal," Rep. Steve Daines (R-Mont.) challenged, "Is the EPA the Environmental Protection Agency, or does it really stand for the Employment Prevention Agency?"

Though messages frequently pit environmental protection against economic wellbeing, the comparison is based on largely unsubstantiated information. There is no consensus among economists that environmental regulations are bad for job creation or the economy as a whole (Coglianese et al, 2013). In fact, empirical work on the subject finds that regulations play little role in determining the aggregate number of jobs in America at a given time. Generally, economic studies either fail to find significant relationships between regulations and jobs or they identify exceptionally small effects (Coglianese et al, 2013). Data from the Bureau of Labor Statistics (2011) further reveals that, according to American employers, less than 0.1% of all layoffs in the previous two years were attributable to environmental regulations. If environmental regulations were really as destructive as political messages make them seem, this statistic would be much higher.

Despite their inaccuracy, sound bites about "job killing" regulations garner significant media attention and regular coverage nationwide (Coglianese et al, 2013). The widespread dissemination of this misleading information reinforces a negative message frame about environmental regulations to the voting public. (Gamson and Modigliani, 1987; Terkildsen and Schnell, 1997). It is plausible, then, that American voters' responses about environmental regulations in political polls and national surveys also reflect this political messaging (Kuklinski et al, 2000). When voters are lead to either prioritize environmental protection *or* economic growth, they mistakenly believe that they cannot have both a healthy environment and a healthy economy. As a result, it is much less likely that the public will support the multitude of beneficial economic-environmental policies that promote both interests.

### *Economic and Demographic Considerations*

Though message framing likely influences public opinion about environmental regulations, the literature shows economic concerns may play a role as well. Overall, public opinion polling over the past several decades suggests an inverse relationship between public support for environmental policy and economic security (Elliott, Regens, and Seldon 1995; Guber, 2003; Scruggs and Benegal, 2012). Further, Smith et al. (2011)

find a strong negative correlation between the percentage of respondents who agree with the idea that the government should devote greater resources to environmental protection and the national unemployment rate. Scruggs and Benegal (2012) reaffirm these findings. These patterns do not necessarily suggest that the public chooses to disregard environmental protection during times of economic insecurity, but it does imply that people reassess their priorities during economic downturns. Some scholars hold that the observed negative association between economic health and pro-environment sentiment may indicate a classic public goods dilemma (Singer, 2011; Scruggs and Benegal, 2012). When people worry about the state of their country's economy, they are more likely to reprioritize their concerns for other long-term issues, especially if they perceive the issues to be in direct competition.

Respondents' demographic characteristics may also affect their views on environmental regulations. Much of the current literature addressing public attitudes toward environmental regulations focuses on differences between social and demographic groups. Younger, wealthier, Caucasian females are more likely to be sympathetic toward environmental issues and pro-environmental policies (Dunlap and Van Liere, 1980; Howell and Laska, 1992; Jones and Dunlap 1992; Dunlap et al, 2000; Daniels et al, 2013). Democrats tend to support pro-environmental policies more than Republicans (Jones and Dunlap, 1992; Dunlap et al., 2000; Guber, 2003). Also, scholars find a positive relationship between respondents' educational attainment and their support for environmental policies (Howell and Laska, 1992; Jones and Dunlap, 1992; Dunlap et al., 2000).

## **Hypotheses**

Based on my review of the literature about public opinion and environmental regulations, I expect to see the following trends in survey results:

- First, I expect respondents will be supportive of efforts to protect the environment. In general, public support for environmental regulations has been on the sharp decline since the mid-2000s (Bosso and Guber, 2006). However, trends in polling data collected since 2012 suggest that this period of anti-environmentalism may be coming to a close (Daniels et al, 2013). It seems that public opinion is slowly turning in favor of environmental regulations and environmental policy as a whole.
- Second, I expect respondents will be supportive of efforts to protect the environment when environmental regulations are framed in terms of their public health benefits. If environmental regulations are thought to improve public health and reduce disease risk, public support for these measures often increases (Bosso and Guber, 2006).

- Third, I expect respondents will be supportive of efforts to protect the environment when environmental regulations are framed in terms of their economic benefits. As previously discussed in this paper, environmental regulations are often misleadingly framed as impediments to economic growth. These frames likely generate and exacerbate anti-environment sentiments within the public. In my survey, I hope to see whether respondents will express more favorable attitudes toward environmental regulation when given information that combats messages linking pro-environment policy to anti-economy consequences.

## **Testing Message Frames about Environmental Regulations**

### *Identifying Patterns in Polling Data*

To explore the effects of message framing on public opinion about environmental regulations, I analyze a sample of polling data compiled through the University of Connecticut's Roper Center for Public Opinion Research iPOLL Databank. I identify all polls in the iPOLL Databank that were conducted over the past decade (2004-2014) and directly ask respondents how they feel about environmental regulations. Keywords searched include "environmental regulations," "environment AND economy," "environmental concerns," "environment AND health," and "regulations AND environment."

I sort the polling questions into three main categories based on their message frames around environmental regulations. In the first message frame, respondents are directly asked whether they support environmental regulations to preserve the environment. An example of a polling question using this message frame is shown below.

#### **Frame 1: Environmental Protection**

"For each statement, please tell me if you completely agree with it, mostly agree with it, mostly disagree with it or completely disagree with it. There needs to be stricter laws and regulations to protect the environment."

Pew Research Center for the People and the Press, December 2006.

In the second message frame, respondents are directly asked whether they support environmental regulations to protect public health. An example of a polling question using this message frame is shown below.

#### **Frame 2: Public Health Benefits**

"Now let me read you a statement: Some people say: Scientists at the EPA (Environmental Protection Agency) are the most qualified people to decide how to protect the public from pollution, not politicians in Congress. EPA scientists say that failing to update these standards

would lead to more than 10,000 additional deaths and 50,000 additional asthma attacks every year. And by failing to update smog standards to reflect the most recent research, Congress would be keeping parents in the dark about the true impact of pollution on their children. Congress should hold polluters accountable for their actions and let the EPA do its job, not let some polluters off the hook. Do you believe Congress should stop the EPA from updating these standards or not?"

American Lung Association, June 2011

In the third message frame, respondents are asked a trade-off question, requiring them to choose between supporting environmental regulations and growing the economy. An example of a polling question using this message frame is shown below.

**Frame 3: Environment vs. Economy**

"With which one of these statements about the environment and the economy do you most agree--protection of the environment should be given priority, even at the risk of curbing economic growth or economic growth should be given priority, even if the environment suffers to some extent?"

Gallup Poll, March 2013.

After categorizing polls by message frame, I calculate both the percentage of respondents who express opinions in favor of environmental regulations and the percentage of respondents who express opinions against environmental regulations. Pro-environmental opinions include responses of "strongly agree," "agree," "completely agree," "mostly agree," "strongly favor," and "favor." Anti-environmental opinions include responses of "strongly disagree," "disagree," "completely disagree," "mostly disagree," "strongly oppose," and "oppose." Then, I calculate the difference between pro-regulation responses and anti-regulation responses. Ultimately, I am able to determine whether respondents in each poll are in support or opposition of environmental regulations overall.

Figure 1 summarizes the results on the following page:

Message	Date	Poll	Anti	Pro	Difference	
<b>Environmental Protection</b>						
	Dec-06	Pew Research Center for the People and the Press	15	83	68	Support
	Mar-09	Pew Research Center for the People and the Press	16	83	67	Support
	Jul-10	Pew Research Center for the People and the Press	6	38	32	Support
	Apr-12	Pew Research Center for the People and the Press	25	74	49	Support
<b>Public Health Benefits</b>						
	Feb-11	American Lung Association	23	43	20	Support
	Jun-11	American Lung Association	19	43	24	Support
	Nov-12	American Lung Association	25	33	8	Support
<b>Environment vs. Economy</b>						
	Mar-04	Gallup Poll	44	49	5	Support
	Dec-04	Pew Research Center for the People and the Press	21	48	27	Support
	Dec-05	Pew News Interest Index Poll	28	43	15	Support
	Feb-06	Pew Hispanic Immigration Poll	29	65	36	Support
	Mar-06	Gallup Poll	37	52	15	Support
	Jul-06	Pew Forum on Religion and Public Life	31	57	26	Support
	Jul-06	LA Times/Bloomberg Poll	22	75	53	Support
	Mar-07	Gallup Poll	37	55	18	Support
	Apr-07	CBS News/ NY Times	36	52	16	Support
	May-07	Pew Forum on Religion and Public Life	30	61	31	Support
	Mar-08	Gallup Poll	42	49	7	Support
	May-08	New Models National Brand Poll	53	43	-10	Oppose
	Jun-08	CNN/Opinion Research Corporation Poll	44	49	5	Support
	Dec-08	Democracy Corps Poll	27	17	-10	Oppose
	Jan-09	CBS News/ NY Times	58	33	-25	Oppose
	Jan-09	Energy Learning Curve Survey	35	56	21	Support
	Apr-09	Marist Poll	49	39	-10	Oppose
	Dec-09	CBS News/ NY Times	61	29	-32	Oppose
	Dec-09	CBS News Poll	64	28	-36	Oppose
	Mar-10	Gallup Poll	53	38	-15	Oppose
	Mar-10	CNN/Opinion Research Corporation Poll	51	45	-6	Oppose
	May-10	NBC News/Wall Street Journal Poll	53	41	-12	Oppose
	May-10	Gallup/USA Today Poll	43	50	7	Support
	Jun-10	Global Views Survey	38	56	18	Support
	Jun-10	NBC News/Wall Street Journal Poll	46	48	2	Support
	Jan-11	NBC News/Wall Street Journal Poll	41	52	11	Support
	Feb-11	Pew Research Center for the People and the Press	30	41	11	Support
	Mar-11	Gallup Poll	54	36	-18	Oppose
	Apr-11	Resurgent Republic Survey	28	26	-2	Oppose
	Jul-11	Public Religion Research Institute	14	17	3	Support
	Jul-11	New Models National Brand Poll	44	43	-1	Oppose
	Dec-11	United Technologies/National Journal Congressional Connection Poll	45	41	-4	Oppose
	Jan-12	McLaughlin & Associates Survey	61	28	-33	Oppose
	Feb-12	American Lung Association	10	53	43	Support
	Feb-12	American Lung Association	20	41	21	Support
	Mar-12	Millennial Values Survey	11	15	4	Support
	Mar-12	Gallup Poll	49	41	-8	Oppose
	Aug-12	Public Religion Research Institute	45	53	8	Support
	Aug-12	Democracy Corps Poll	37	27	-10	Oppose
	Jan-13	Religion, Values, and Immigration Reform Survey	40	56	16	Support
	Mar-13	Gallup Poll	48	43	-5	Oppose
	Jul-13	Democracy Corps Poll	11	44	33	Support
	Sep-13	Public Religion Research Institute	43	52	9	Support

It is clear that different message frames about environmental regulations can elicit different responses from the public. Some frames are more effective in triggering positive and negative responses about environmental regulations than others. When asked if they agree or disagree with the adoption of regulations to preserve the environment, the public tends to strongly support pro-environmental measures. Additionally, when polls ask respondents how they feel about environmental regulations designed to protect public health, the public is also pro-environment. When a trade-off scenario is introduced, public opinion about environmental regulations demonstrates more variability. Survey questions often ask respondents to choose between protecting the environment and prioritizing another policy issue. In this sample, respondents are asked to pick whether they would prefer to protect the environment or boost economic growth. Results are mixed. Public opinion ranges from being strongly pro-environment to strongly anti-environment and pro-economy.

A larger pattern in public opinion emerges when results are analyzed across time. Until spring 2008, respondents generally expressed pro-environment views. A transition toward more anti-environment, pro-economy views occurs in late 2008 and early 2009, coinciding with the Great Recession. As the public began to feel the effects of a weakened economy, they likely preferred policies that favored economic growth (Scruggs and Benegal, 2012). This trend seems to taper off around early 2012, after the economy stabilized.

Though the results are informative, there are potential limitations in this analysis that should be acknowledged. First, I only examine a small sample of polling data about environmental regulations. While this sample comprises all polling about environmental regulations from the last decade in the iPOLL databank, it is by no means a comprehensive collection of all polling on the issue. Also, there is a considerable difference between the numbers of available polls asking environment-economy trade-off questions and the number of polls asking about regulations for environmental protection or public health. Each year, the same pollsters asked questions about environmental protection and public health. As a result, responses may not reflect as wide a spectrum of opinions as questions about environment-economy trade-offs.

## *Surveying the Public about Environmental Regulations*

Utilizing the three main message frames identified in my review of environmental polling data over the last ten years, I survey the voting public to see if framing prompts respondents to express opinions about environmental regulations that differ from observed historical patterns.

A nationally representative sample of 1,240 respondents participated in this survey. Survey Sampling International (SSI) distributed the survey and collected responses online from late February to early March 2014. Ten participants did not respond to the three survey questions used for this analysis; they were subsequently dropped from the sample.

Participants were randomly assigned one of three possible survey questions. Approximately the same number of respondents answered each question (n=411, n=413, and n=406, respectively). Those assigned the control question (n=411) were asked directly whether they supported environmental protection, “even if it hurts the economy or otherwise reduces our standard of living.”

“People often have to make trade-offs or sacrifices in deciding what is important to them. Some people think it is important to protect the environment even if it hurts the economy or otherwise reduces our standard of living. Other people think it is not as important to protect the environment if it hurts the economy or otherwise reduces our standard of living. Which is closer to the way you feel, or haven't you thought much about this?”

Other respondents were assigned to one of two treatment questions (n=413 and n=406). In each of these questions, respondents were presented with information that combats a common, misleading message frame about environmental regulations that typically generates anti-environmental sentiment. Then, respondents were asked whether it is important or not as important to protect the environment as it is to preserve the economy or our general standard of living. The first treatment question outlines the public health benefits associated with environmental regulations, pointing to EPA statistics on morbidity reductions as a result of increased pollution standards.

“Officials argue environmental regulations designed to curb pollution and improve air and water quality also have public health benefits. A 2011 Environmental Protection Agency (EPA) study found that, in 2010 alone, regulations to decrease pollution prevented over 160,000 premature deaths, 130,000 heart attacks, 86,000 hospital admissions, and millions of cases of respiratory problems. As a result, Americans were healthier and more productive.

That being said, people often have to make trade-offs or sacrifices in deciding what is important to them. Some people think it is important to protect the environment even if it hurts the economy or otherwise reduces our standard of living. Other people think it is not as important to protect the environment if it hurts the economy or otherwise reduces our standard of living. Which is closer to the way you feel, or haven't you thought much about this?”

The second treatment question focuses on environmental-economic trade-offs, dispelling the myth that environmental health and economic wellbeing are mutually exclusive.

“Many politicians argue environmental regulations are costly for businesses, kill jobs, and hurt economic growth. However, economists say that a healthy environment and a healthy economy can go hand in hand. Mainstream economic research shows long-term impacts of environmental regulations on employment are limited and costs for businesses are often overstated. Regulations can even encourage technology investments that put unemployed Americans back to work.

That being said, people often have to make trade-offs or sacrifices in deciding what is important to them. Some people think it is important to protect the environment even if it hurts the economy or otherwise reduces our standard of living. Other people think it is not as important to protect the environment if it hurts the economy or otherwise reduces our standard of living. Which is closer to the way you feel, or haven't you thought much about this?”

### *Potential for Backfire Effects*

As with any systematic effort to combat misinformation, there is always potential for backfire effects. A backfire effect occurs when an individual's previously held beliefs about an issue are challenged with contradictory evidence and beliefs become stronger as a result (Nyhan and Reifler, 2010). I hope to see whether responses to this survey demonstrate backfire effects in respondents' attitudes towards the environment.

## Results

The following frequency table summarizes survey responses for each question:

Figure 2: Frequency Table of Survey Responses

<b>Question 1: Important to Protect the Environment?</b>		
Important to Protect Environment	186	45%
Not Important to Protect Environment	101	25%
Don't Know	59	13%
Haven't Thought Much About It	65	16%
<b>Total</b>	<b>411</b>	<b>99%</b>

<b>Question 2: Important to Protect the Environment to Benefit Public Health?</b>		
Important to Protect Environment	213	52%
Not Important to Protect Environment	78	19%
Don't Know	55	13%
Haven't Thought Much About It	67	16%
<b>Total</b>	<b>413</b>	<b>100%</b>

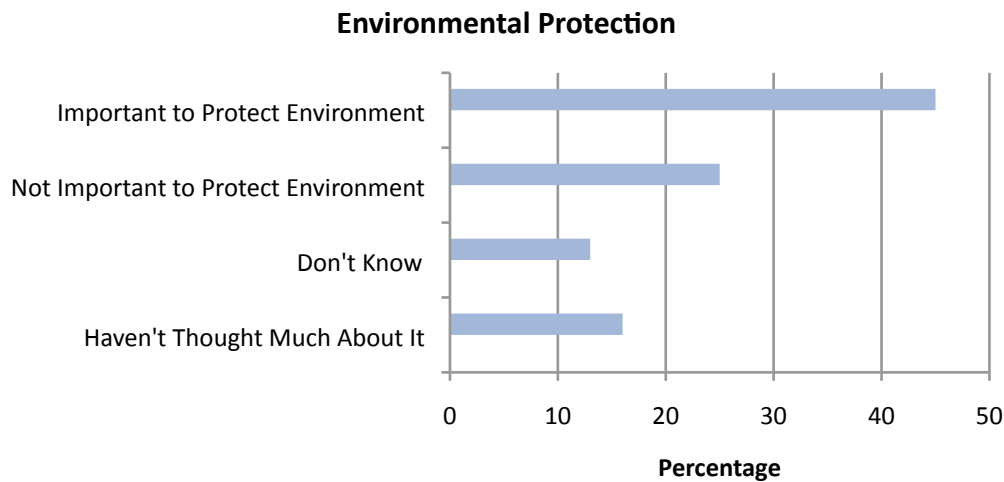
  

<b>Question 3: Important to Protect Environment Even if Economy Suffers?</b>		
Important to Protect Environment	198	49%
Not Important to Protect Environment	99	24%
Don't Know	50	12%
Haven't Thought Much About It	59	15%
<b>Total</b>	<b>406</b>	<b>100%</b>

Overall, it is apparent that most respondents believe it is important to protect the environment, even if the economy or general standards of living suffer to some extent. This finding supports my first hypothesis. Though scholars suggest that public support for environmental regulations has been in a tailspin since the early 2000s (Bosso and Guber, 2006), respondents in this sample seem to demonstrate largely pro-environmental attitudes.

Within the control group, most survey respondents (45%) express support for measures to protect the environment, even if the economy or our standard of living suffers to some extent. A smaller proportion of respondents (25%) do not believe it is as important to protect the environment. Figure 3 summarizes the responses below.

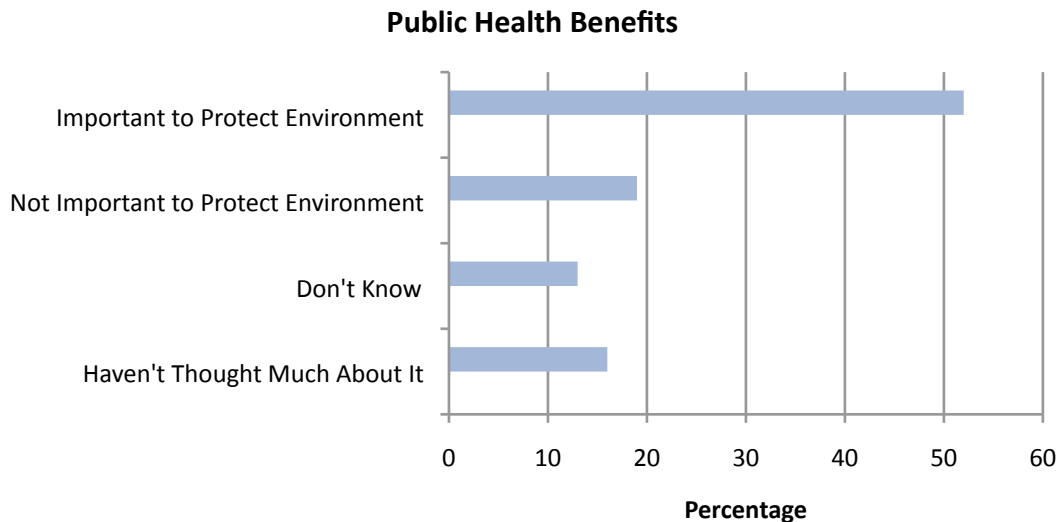
Figure 3: Survey Responses, Control



These findings further reinforce my analysis of polling data earlier in this paper. When respondents are simply asked whether or not they support environmental regulations, absent message framing, they tend to demonstrate pro-environmental views.

Among the respondents in the first treatment group, the majority (52%) express support for environmental protections that also benefit public health, even if the economy or our standard of living suffers to some extent. A smaller proportion of respondents (19%) do not believe it is as important to protect the environment. Figure 4 summarizes the responses below.

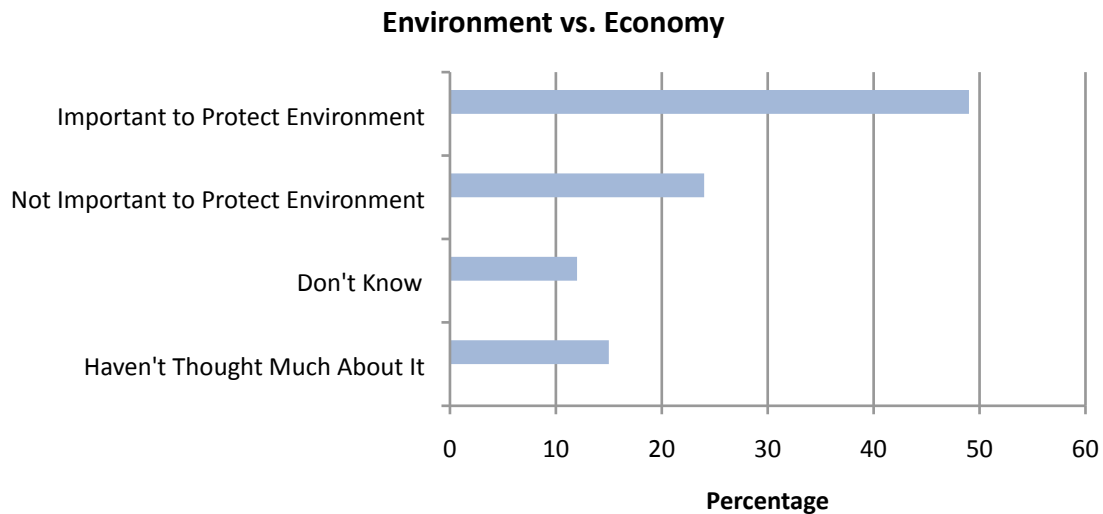
Figure 4: Survey Responses, Treatment 2



These results indicate that the message frame has a slightly positive effect. Respondents in the treatment group tend to demonstrate greater support for environmental regulations than respondents in the control group (52% vs. 45%). This suggests that framing environmental regulations in a way that emphasizes their public health benefits may elicit more pro-environmental responses from the public. This further supports the results of my analysis of polling data earlier in this paper. Over the past ten years, frames describing specific health benefits of environmental policies and regulations tend to garner widespread support. This evidence, taken together, appears to support my second hypothesis.

In the second treatment group, most respondents (49%) express support for environmental protections that may also have economic benefits. A smaller proportion of respondents (24%) do not believe it is as important to protect the environment. Figure 5 summarizes the responses below.

Figure 5: Survey Responses, Treatment 3



These results indicate that the message frame has a slightly positive effect. Respondents in this treatment group tend to demonstrate greater support for environmental regulations than respondents in the control group (49% vs. 45%), but the effect is not as great as it is within the public health treatment group. This suggests that framing environmental regulations in a way that emphasizes their economic benefits may elicit more pro-environmental responses from the public. This further supports the results of my analysis of polling data earlier in this paper. While public support for environmental policies seems to waiver during difficult economic times, pro-environment attitudes have been steadily increasing since 2012. It makes sense that economic trade-offs may not be as pressing a consideration for the public today as it was during the Great Recession. This evidence, taken together, supports my third hypothesis.

I do not see any evidence of backfire effects among responses to this survey. In fact, I observe the opposite reaction. When respondents are presented with messages that positively frame environmental regulations in terms of public health and economic benefits, respondents tend to express more pro-environmental attitudes. Introducing message frames that correct common misperceptions about environmental regulations does not appear to exacerbate anti-environmental sentiments among respondents.

## Discussion

How does message framing impact public opinion about environmental regulations? Based on this analysis, I identify two key ways in which framing has an effect on public attitudes. First, survey results suggest that environmental message framing can be a tool to combat misleading information typically perpetuated by political actors. When questions about the relationship between the economy and the environment are framed in a way that emphasizes their benefits for one another, respondents express more support for measures to protect the environment. They become more pro-environmental. This finding seems to dispute previous findings from Nyhan and Reifler (2006), showing that corrections play a role in reducing citizens' misperceptions about a policy issue. Second, I find that framing about environment regulations can be helpful in emphasizing certain issue considerations over others. Framing may prompt the public to reprioritize the facts they consider when evaluating environmental regulations, echoing findings from Druckman and Nelson (2003) and Chong and Druckman (2007). Particularly, I find message framing can be effective in leading the public to consider the benefits of environmental policies. As previously discussed, most framing about environmental regulations paints them in a way that *over-emphasizes* their costs and *de-emphasizes* their benefits, especially in terms of economic impact. I show that when message frames draw attention to environmental regulations' benefits and downplay their potential costs, the public tends to be more supportive of the environment.

In the future, the relationship between message framing and public attitudes about environmental regulations should be explored further. Specifically, future work should seek experiments that test the impacts of message frames that both overstate potential benefits and minimize potential costs on public opinion. Currently, very little literature focuses on this topic. In the coming years, as environmental regulations garner more political and media attention, anti-environmental messages from politicians and other elites will only become more commonplace. It is crucial that environmentalists and supporters of environmental regulations know the best strategies to combat these anti-environmental sentiments and encourage environmental support among the public.

## Implications for Policy Actors and Conclusion

In 2004, Michael Shellenberger and Ted Nordhaus's controversial essay, "The Death of Environmentalism" debuted on the front page of the Sunday edition of *The New York Times*. In the essay, Shellenberger and Nordhaus (2004), former environmental advocates turned "eco-pragmatists," argue much of the blame for inaction on environmental policy in the United States rests on the environmental movement's shoulders. If environmentalists hope to make any notable gains in improving environmental policy, they must update their message framing strategy. In short, the

authors believe traditional environmentalist tactics must “die” to make room for new approaches that tie environmental policies to deeply held American values and inspire voters (Shellenberger and Nordhaus, 2004). In many ways, Shellenberger and Nordhaus suggest that national environmental organizations must become more skilled in shaping public opinion about environmental regulations.

Message framing can help in this endeavor. Environmentalists should look to research on framing and public opinion to inform the ways in which they frame pro-environmental messages. Shellenberger and Nordhaus (2004) convincingly argue that environmentalists place too much emphasis on the negative in their message framing. This apocalyptic outlook discourages the public and thwarts the environmental movement’s success. If environmental groups want to promote more positive public attitudes toward environmental regulations and environmental policy in general, they need to get the public on board. It is imperative that they frame policies in a way that makes sense to voters and helps them see prospective benefits. Better message framing will propagate a more positive outlook for the future of environmentalism and may help environmentalists build a hopeful public movement instead of a movement mired in negativity and fear.

Based on findings outlined in this paper, it may not be the most effective strategy for environmentalists to frame environmental regulations and other policies simply as means for protecting and preserving the environment. Normative statements about the “right thing” to do for the environment do not do much to move public opinion in favor of environmental measures. Instead, the most successful message framing emphasizes environmental policies’ positive benefits in quantifiable numbers that the general public can easily identify with and understand. By specifying the number of premature deaths a policy prevents or the number of American jobs it creates, for example, the voting public is better able to see exactly why environmental policies are beneficial and how they can improve quality of life. In turn, the public expresses more pro-environment sentiments. If environmental groups were to move toward this type of message framing in their discussion of environmental regulations and policies, they may become more adept in shifting public opinion in favor of their position on environmental issues.

**Appendix A**  
Complete List of Survey Questions

**Q1: Control Question**

People often have to make trade-offs or sacrifices in deciding what is important to them. Some people think it is important to protect the environment even if it hurts the economy or otherwise reduces our standard of living. Other people think it is not as important to protect the environment if it hurts the economy or otherwise reduces our standard of living. Which is closer to the way you feel, or haven't you thought much about this?

- A) 1=It is important to protect the environment even if it hurts the economy or reduces our standard of living.
- B) 2=It is not as important to protect the environment if it hurts the economy or reduces our standard of living.
- C) 3=I don't know
- D) 4=I haven't thought much about it.

**Q2: Public Health Benefits**

Officials argue environmental regulations designed to curb pollution and improve air and water quality also have public health benefits. A 2011 Environmental Protection Agency (EPA) study found that, in 2010 alone, regulations to decrease pollution prevented over 160,000 premature deaths, 130,000 heart attacks, 86,000 hospital admissions, and millions of cases of respiratory problems. As a result, Americans were healthier and more productive.

That being said, people often have to make trade-offs or sacrifices in deciding what is important to them. Some people think it is important to protect the environment even if it hurts the economy or otherwise reduces our standard of living. Other people think it is not as important to protect the environment if it hurts the economy or otherwise reduces our standard of living. Which is closer to the way you feel, or haven't you thought much about this?

- A) 1=It is important to protect the environment even if it hurts the economy or reduces our standard of living.
- B) 2=It is not as important to protect the environment if it hurts the economy or reduces our standard of living.
- C) 3=I don't know
- D) 4=I haven't thought much about it.

### **Q3: Environment vs. Economy**

Many politicians argue environmental regulations are costly for businesses, kill jobs, and hurt economic growth. However, economists say that a healthy environment and a healthy economy can go hand in hand. Mainstream economic research shows long-term impacts of environmental regulations on employment are limited and costs for businesses are often overstated. Regulations can even encourage technology investments that put unemployed Americans back to work.

That being said, people often have to make trade-offs or sacrifices in deciding what is important to them. Some people think it is important to protect the environment even if it hurts the economy or otherwise reduces our standard of living. Other people think it is not as important to protect the environment if it hurts the economy or otherwise reduces our standard of living. Which is closer to the way you feel, or haven't you thought much about this?

- A) 1=It is important to protect the environment even if it hurts the economy or reduces our standard of living.
- B) 2=It is not as important to protect the environment if it hurts the economy or reduces our standard of living.
- C) 3=I don't know
- D) 4=I haven't thought much about it.

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