

The American Public's Views of Global Climate Change and Potential Amelioration Strategies

Jon A. Krosnick
Stanford University

Funded by

National Science Foundation
U.S. Environmental Protection Agency
National Oceanic and Atmospheric Administration
Ohio State University

Today's Talk

- The Impact of the Fall 1997 Debate on Public Opinion
- The Impact of Factual Education on Preferences Among Electricity Generation Methods
- Preferences for Government Strategies to Reduce Emissions

Principal Events of the Fall of 1997

October 6: White House Conference on Global Climate Change

Hundreds of newspaper, television, magazine, and radio news stories, editorials, editorial cartoons, and letters to the editor about global warming.

Opinions expressed by:

U.S. Politicians
Politicians from other countries
Scientists
Industry
Environmental Groups
Citizens

Talk radio programs.

Internet sites established.

Newspaper advertisements placed by industries, environmental groups, medical organizations.

Data

September 1 – October 5, 1997

Representative National Sample of 688 American Adults

Cooperation Rate: 68%

December 20, 1997 – February 13, 1998

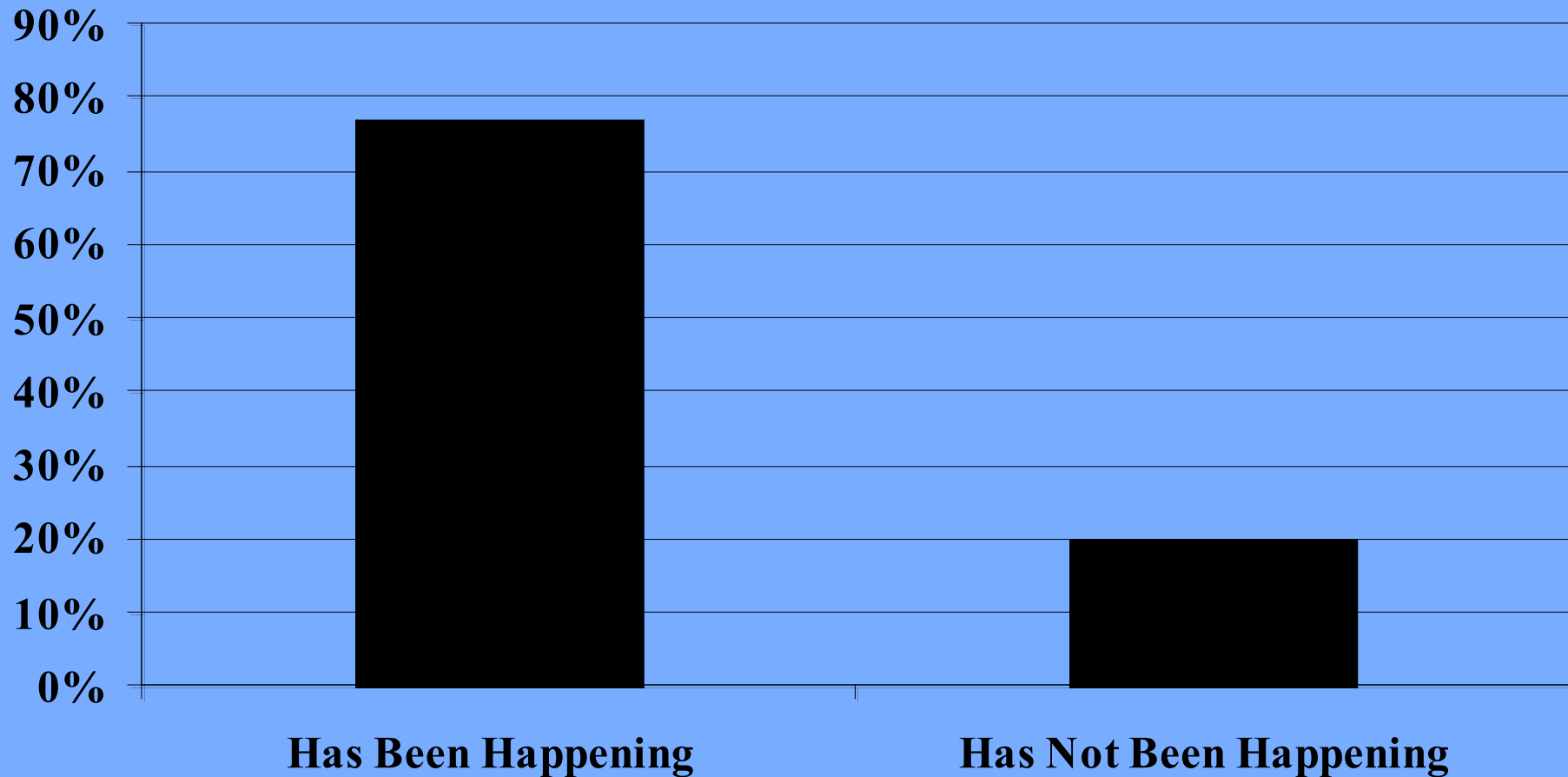
Representative National Sample of 725 American Adults

Cooperation Rate: 72%

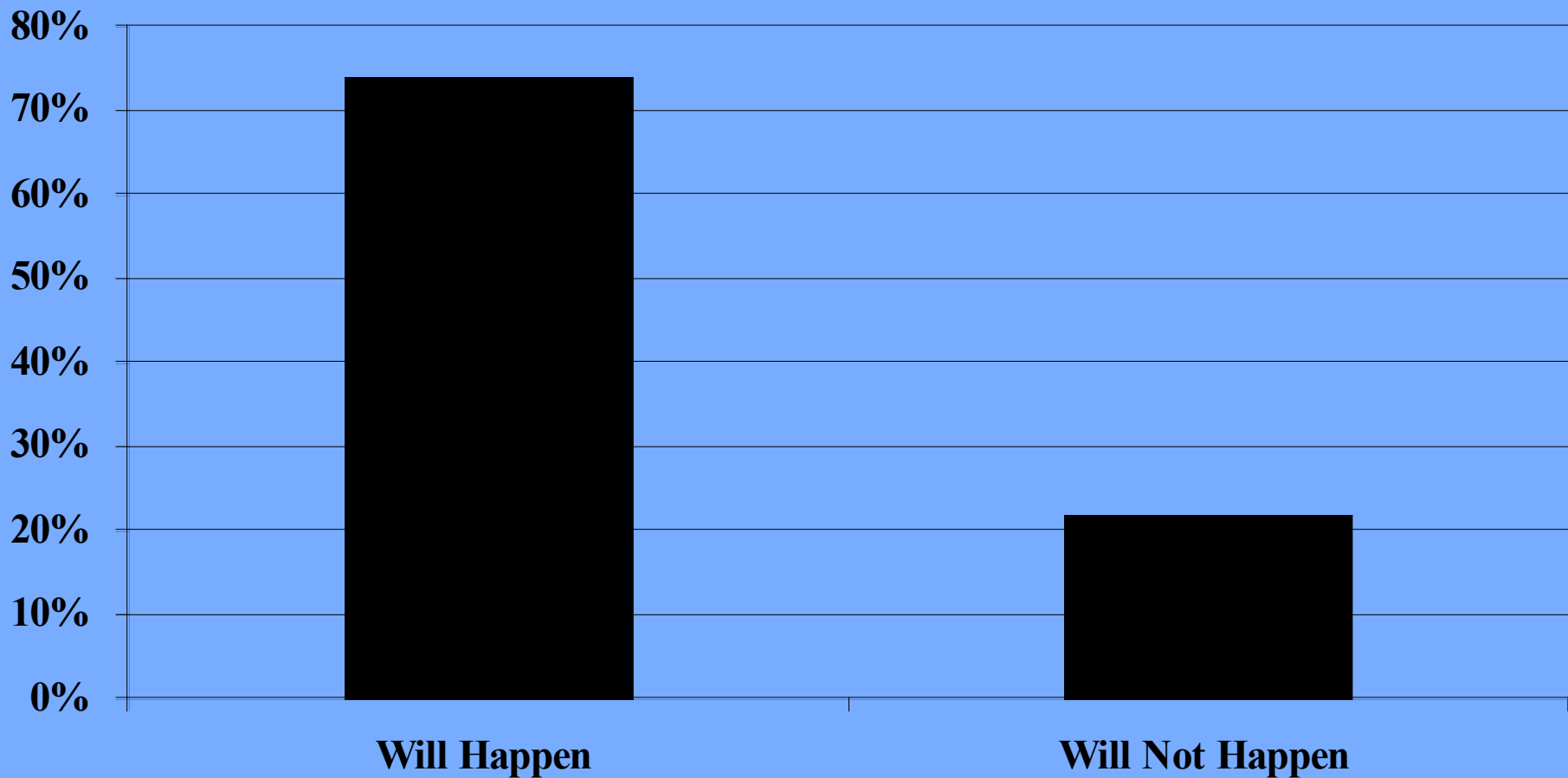
Data Collection Methods

- **Data collection done by the Ohio State University Survey Research Unit.**
- **Computer-assisted telephone interviewing (CATI).**
- **Random digit dialing.**
- **Balanced question wordings.**
- **Response choice order biased against expressing concern about global warming.**
- **Interviews lasted 40 minutes on average.**
- **Data are weighted to match the demographic characteristics of the American public.**

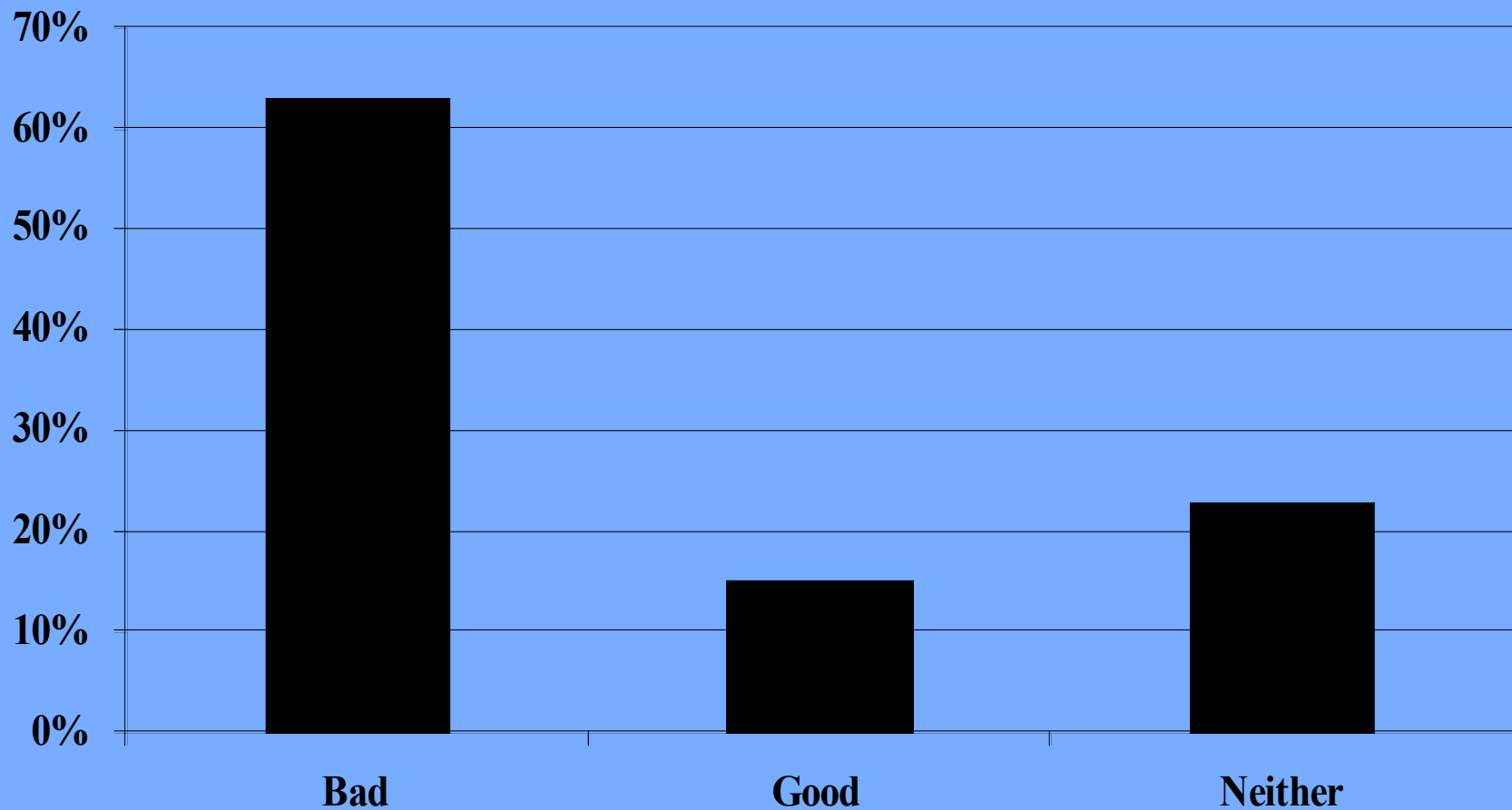
September-October:
Has Global Warming Probably
Been Happening?



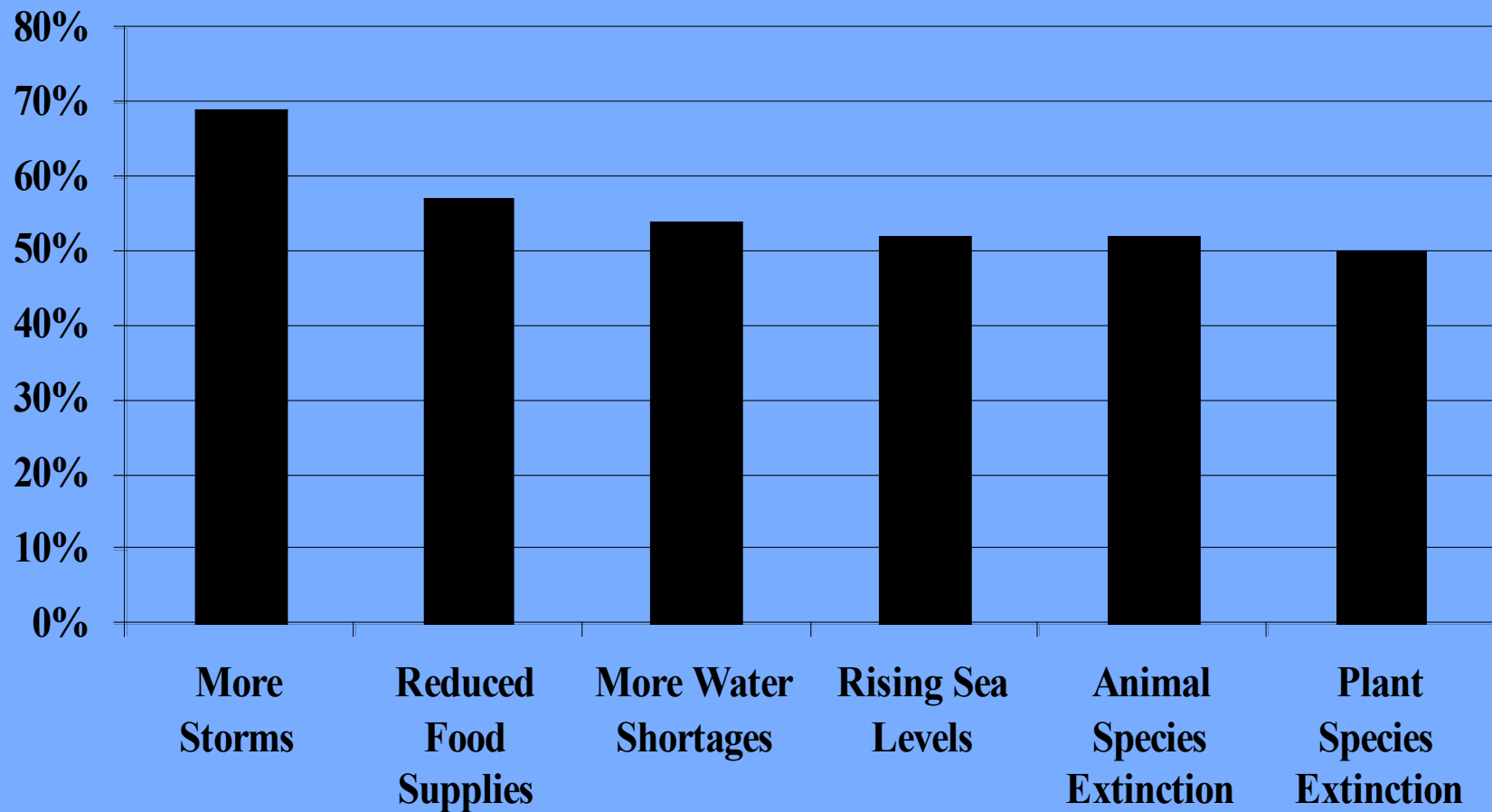
September-October:
Will Global Warming Probably
Happen in the Future?



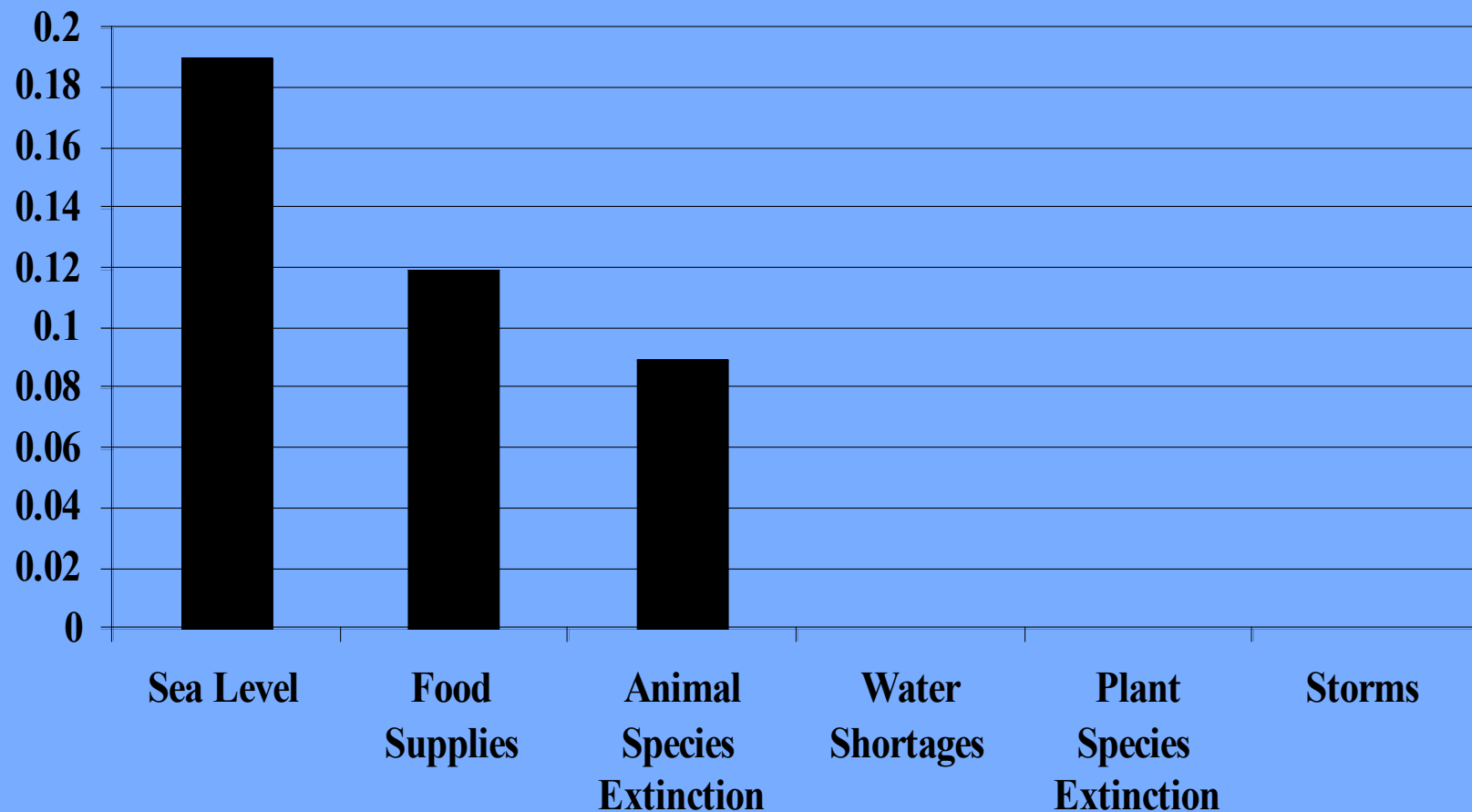
September-October:
Would Global Warming Be
Good, Bad, or Neither?



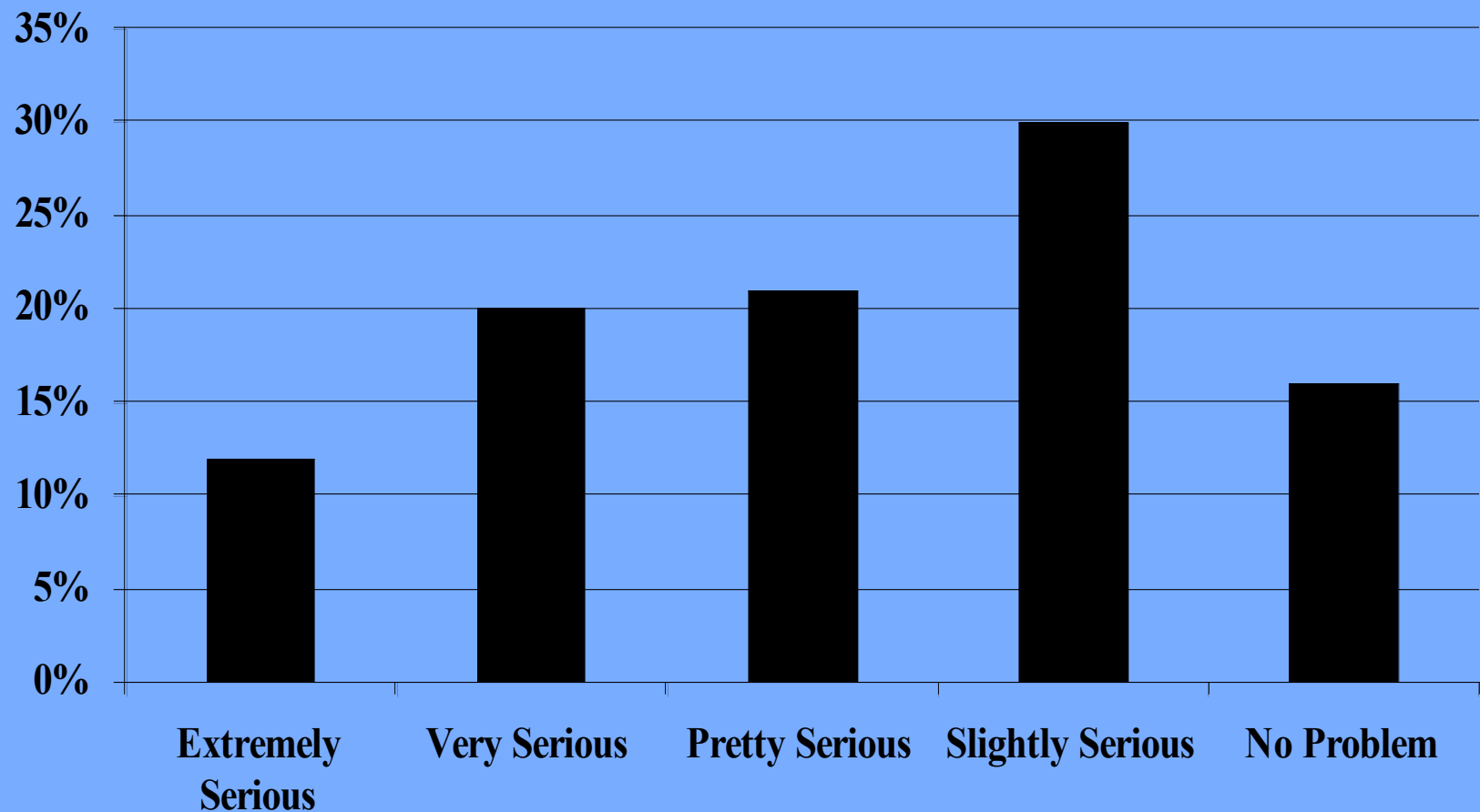
September-October: Effects of Global Warming



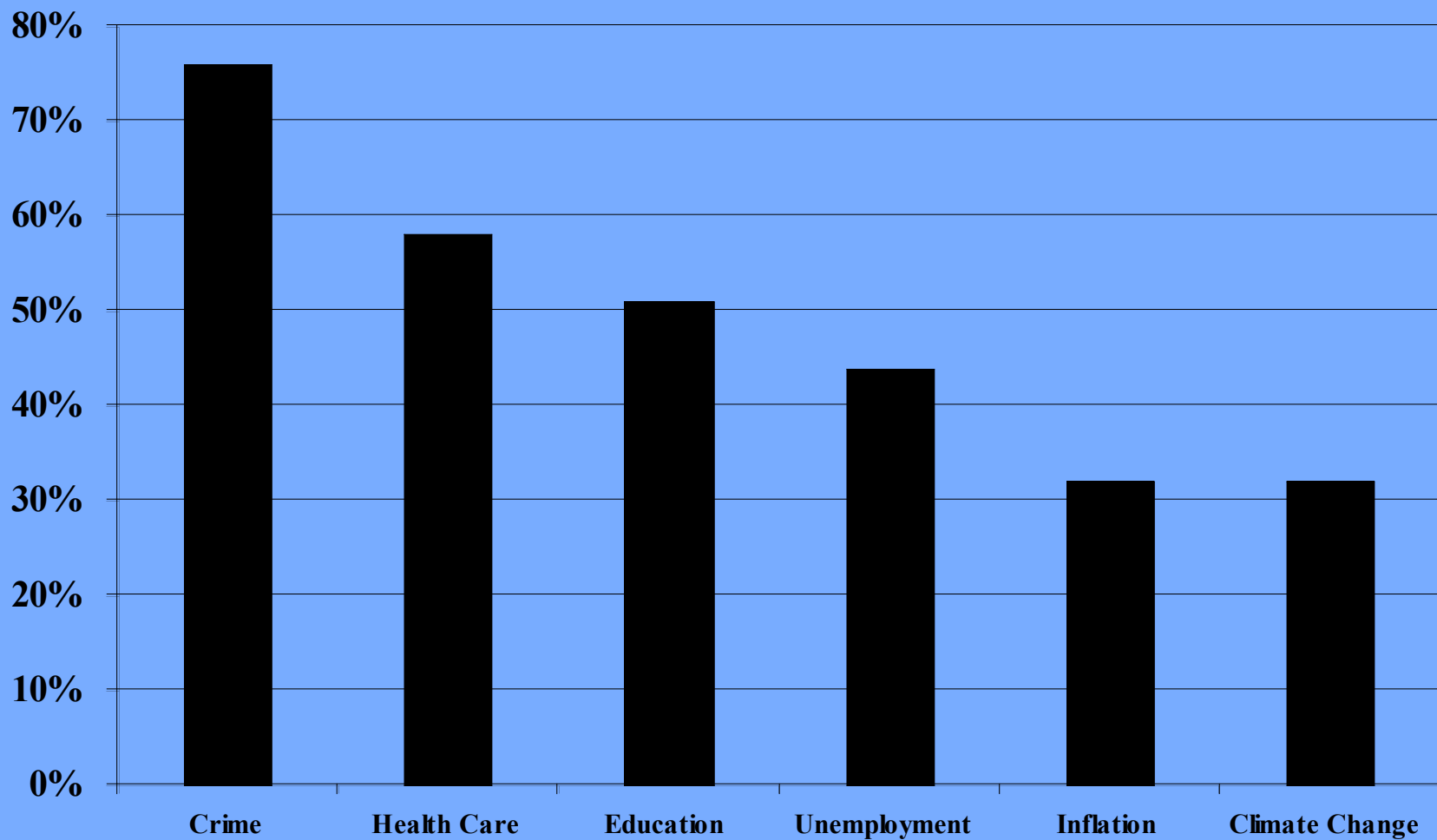
September-October: Impact of Specific Effects on Overall Evaluations of Global Warming



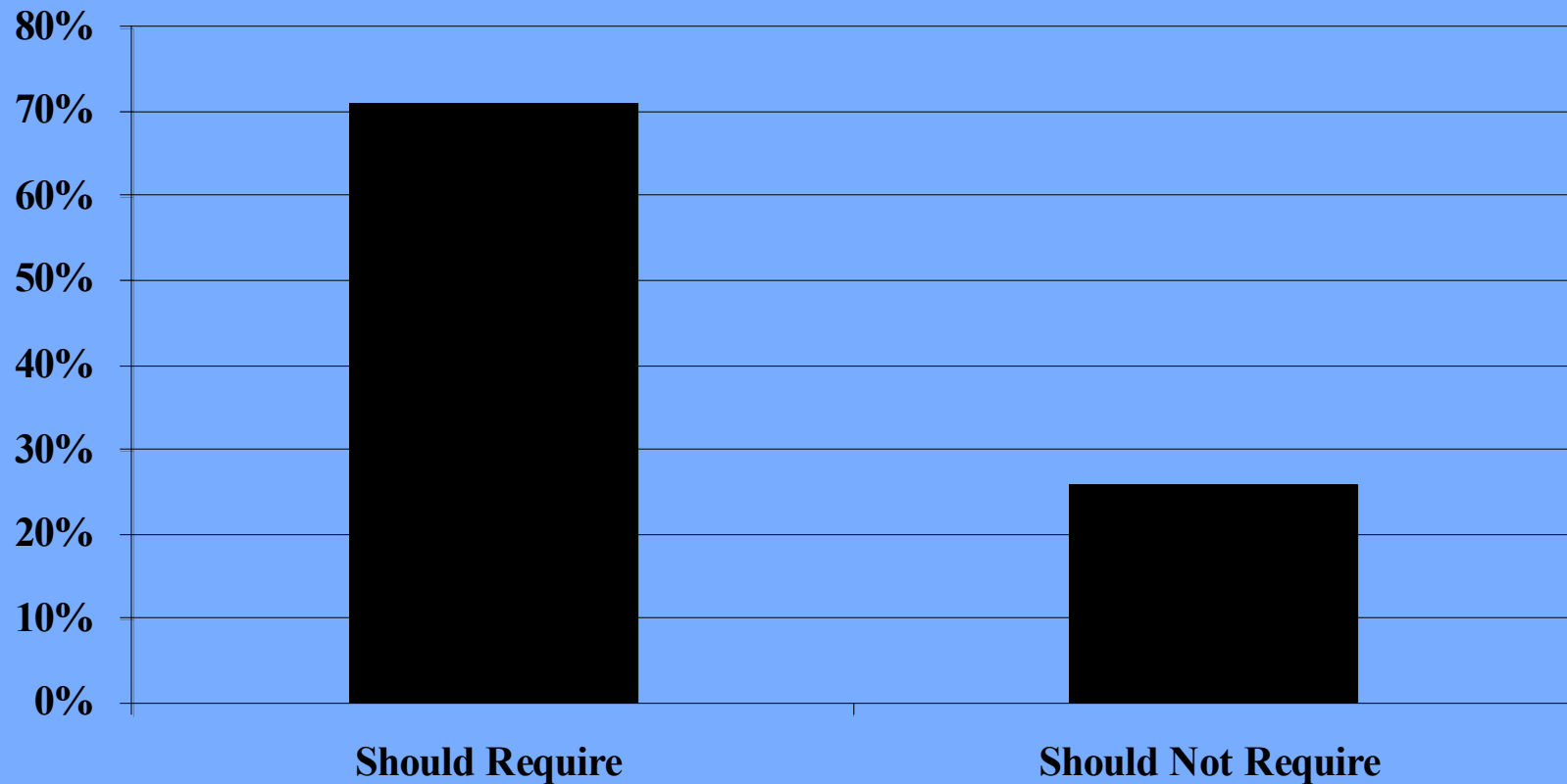
September-October:
How Serious a National Problem
Will Global Warming Be?



September-October:
National Seriousness of Various Problems
(Percent Extremely or Very Serious)

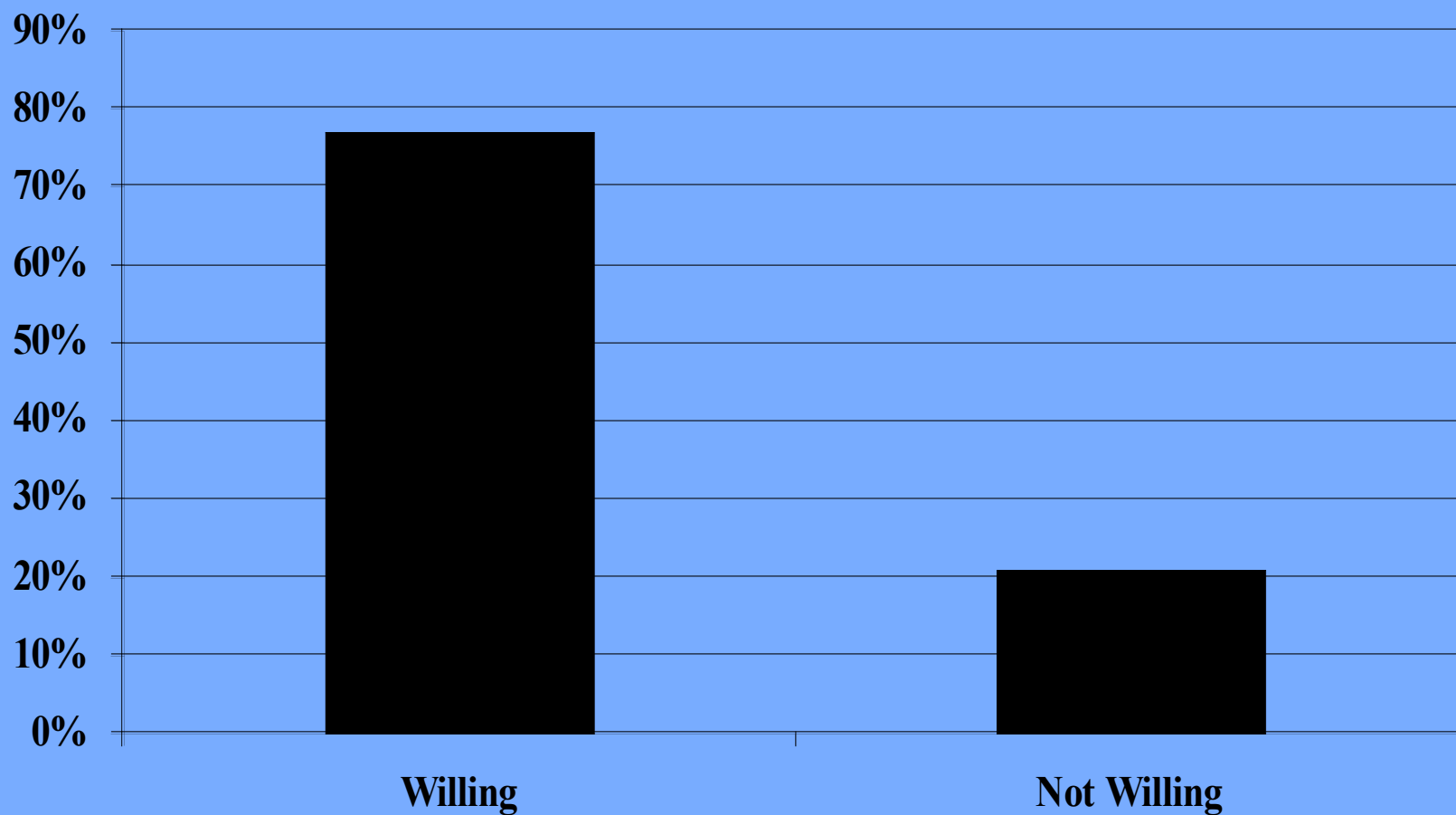


September-October:
Should the U.S. Require Recipients of
Foreign Aid to Reduce Air Pollution?

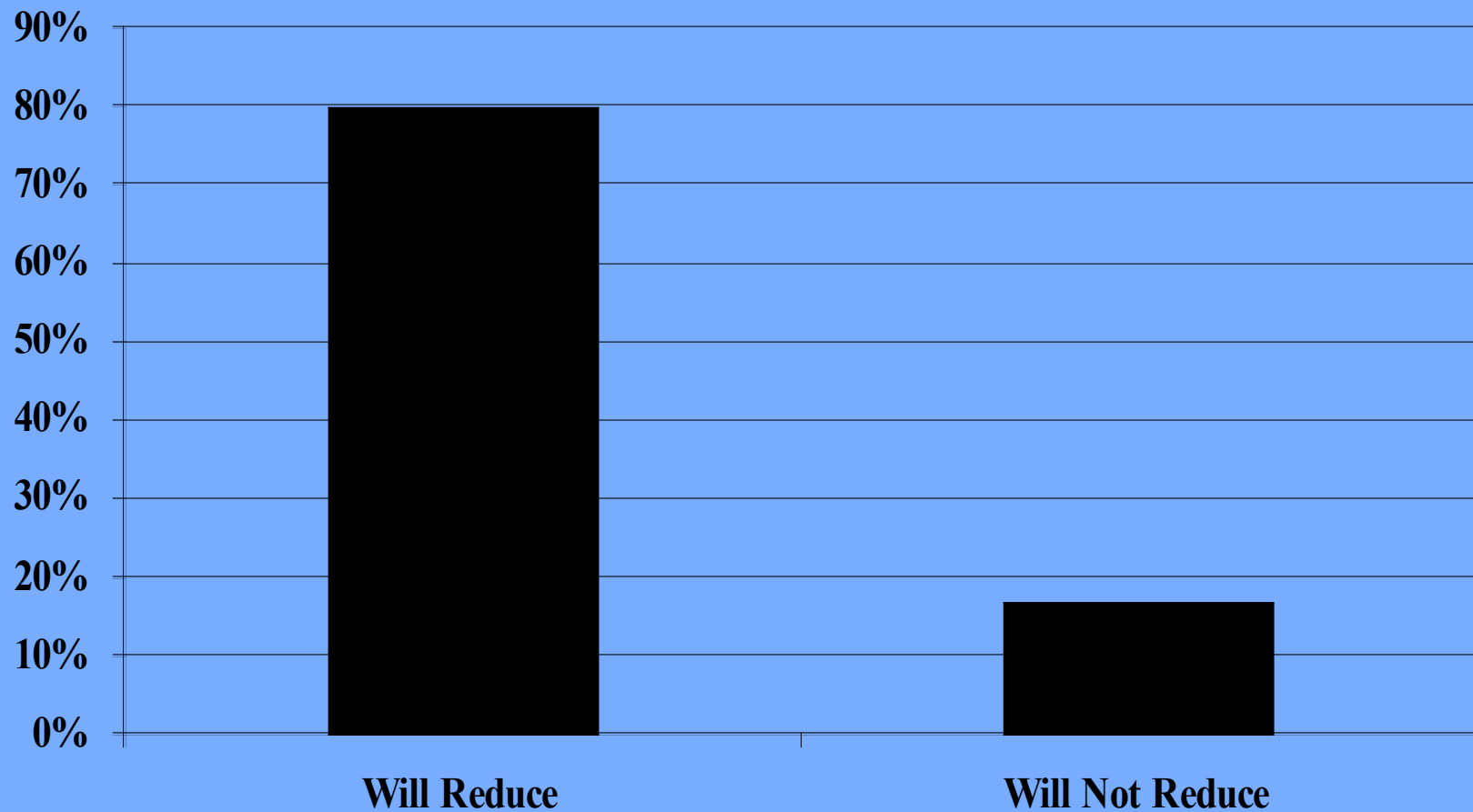


September-October:

Would You Be Willing to Pay More Money
for Utilities to Reduce Air Pollution?



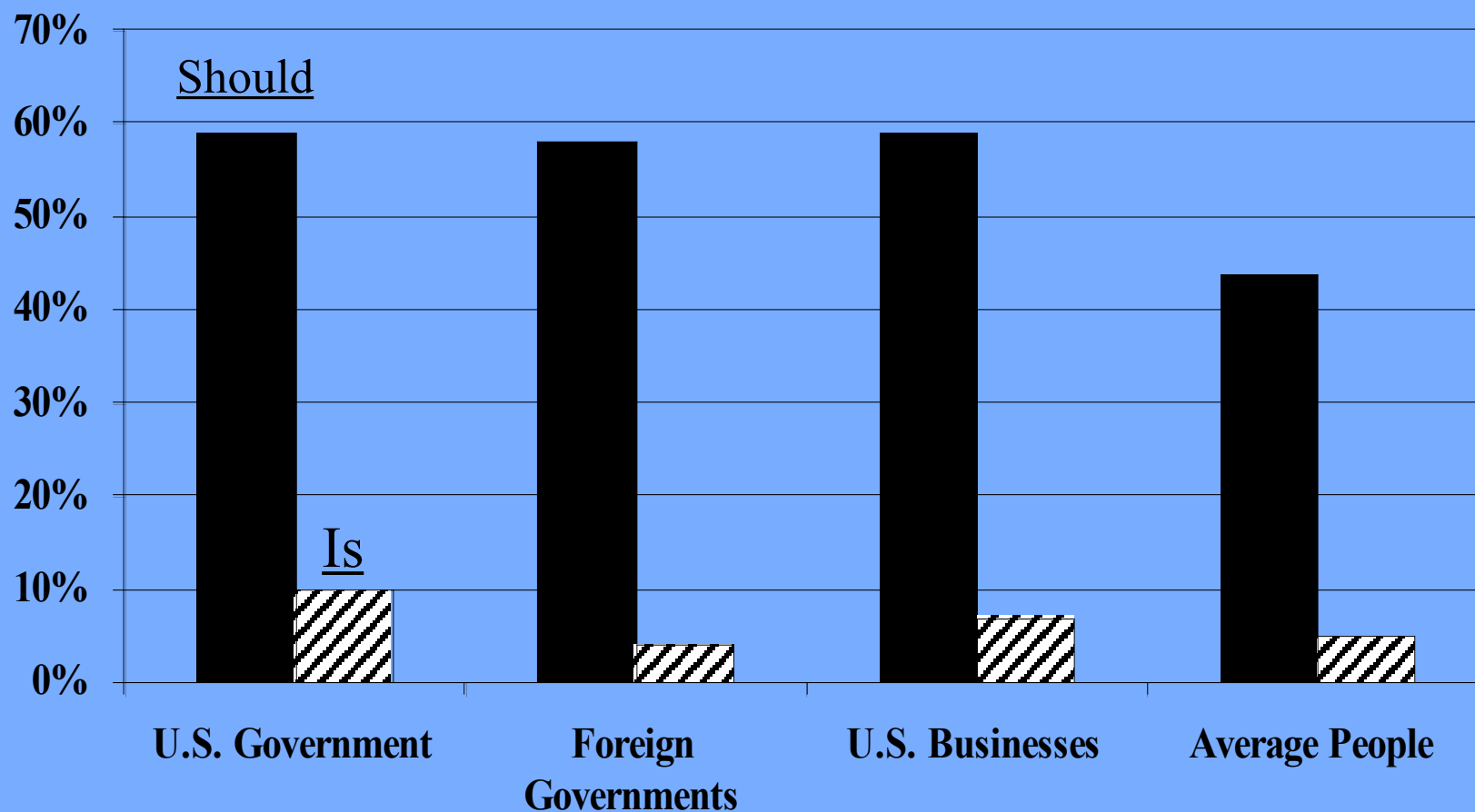
September-October:
Will Reducing Air Pollution Reduce
Future Global Warming?



September-October:

How Much Should be Done and Is Being Done to Combat Global Warming?

(% “A Great Deal” & “Quite A Bit”)



The U.S. Should Do More to Exclude Illegal Immigrants

The U.S. Should Limit Foreign Imports

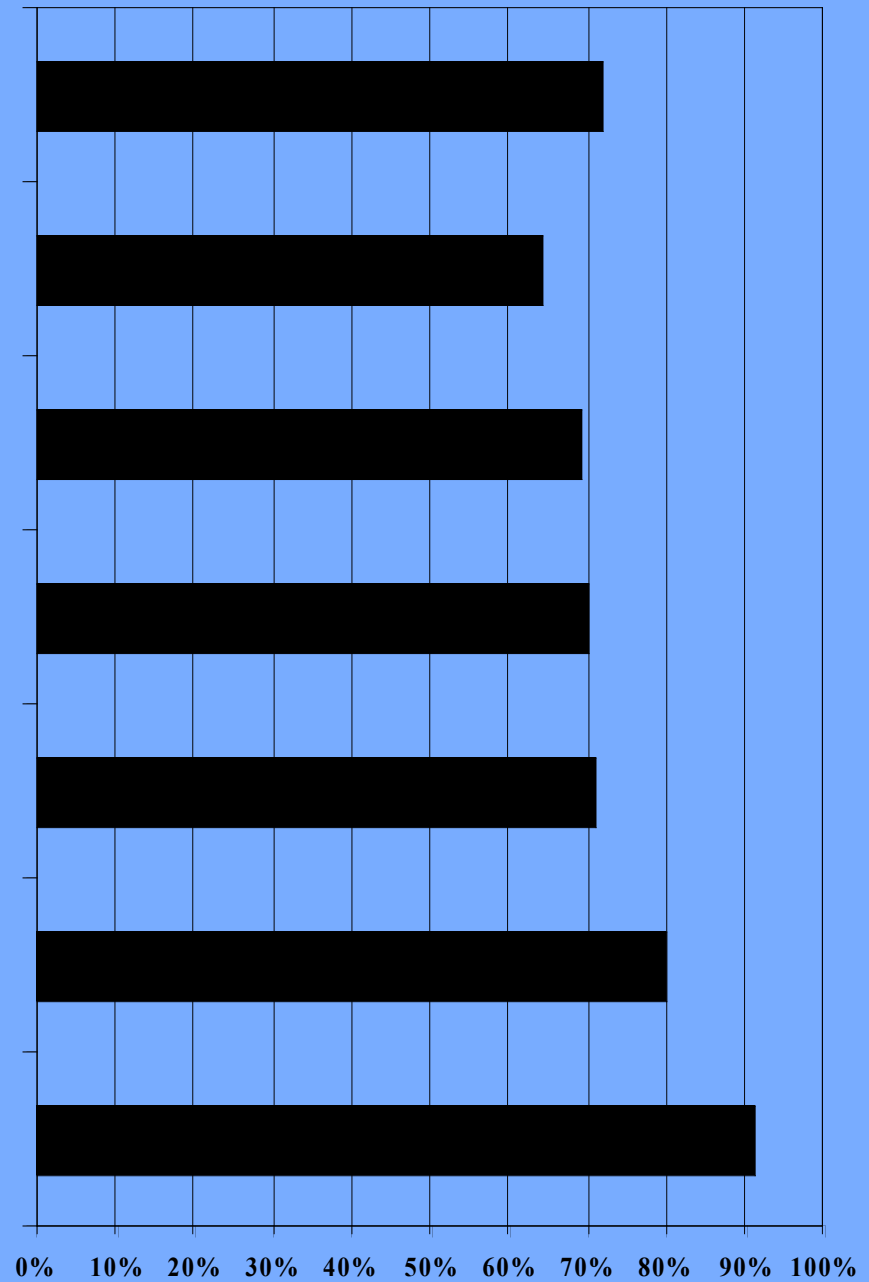
Women Should Not Be Given Preference in Hiring and Promotion

Marijuana Should Be Illegal

Favor the Death Penalty

The U.S. Should Require Recipients of Foreign Aid to Reduce Air Pollution

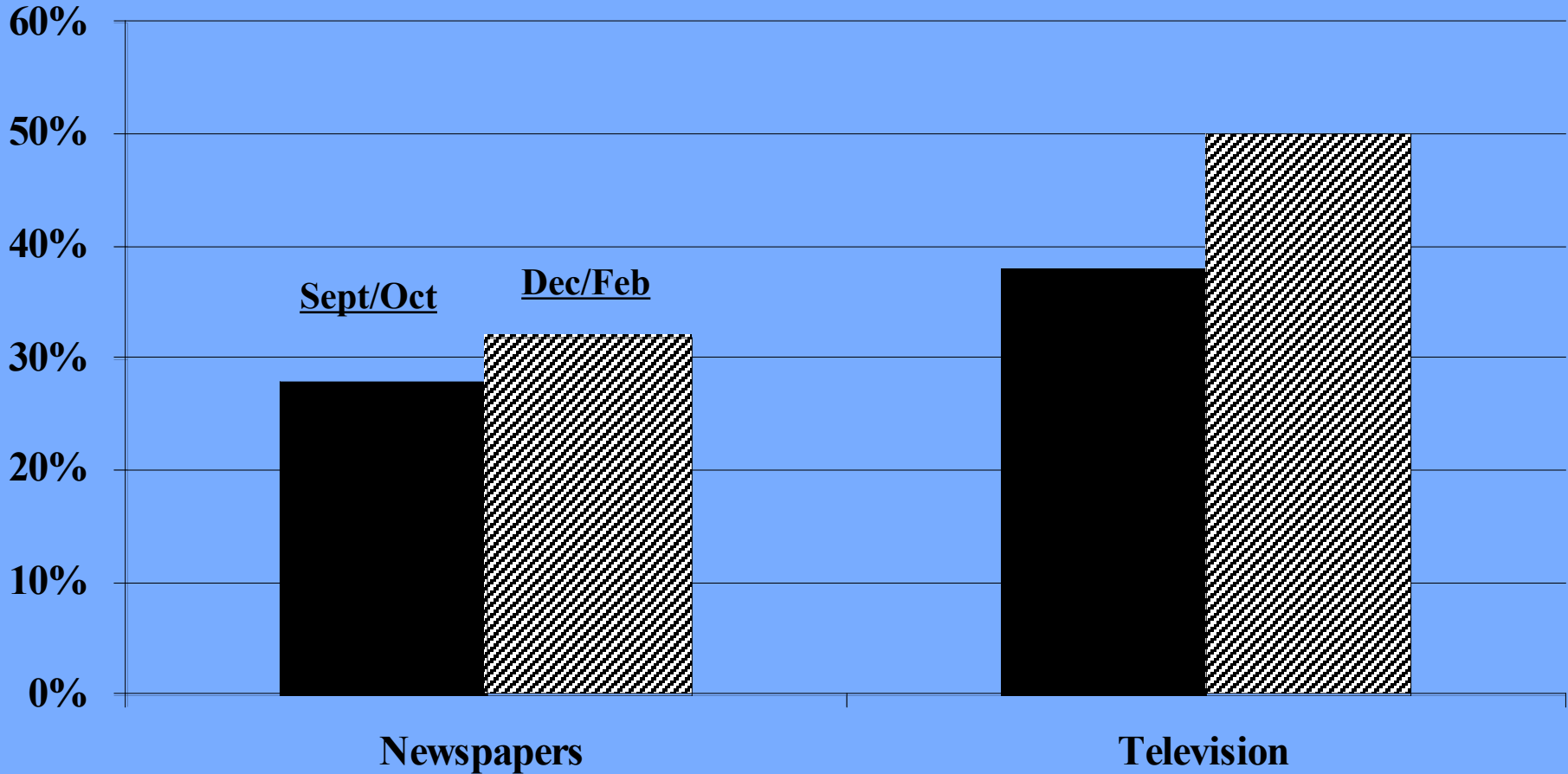
The U.S. Government Should Limit Air Pollution by U.S. Businesses



Other Source: General Social Surveys

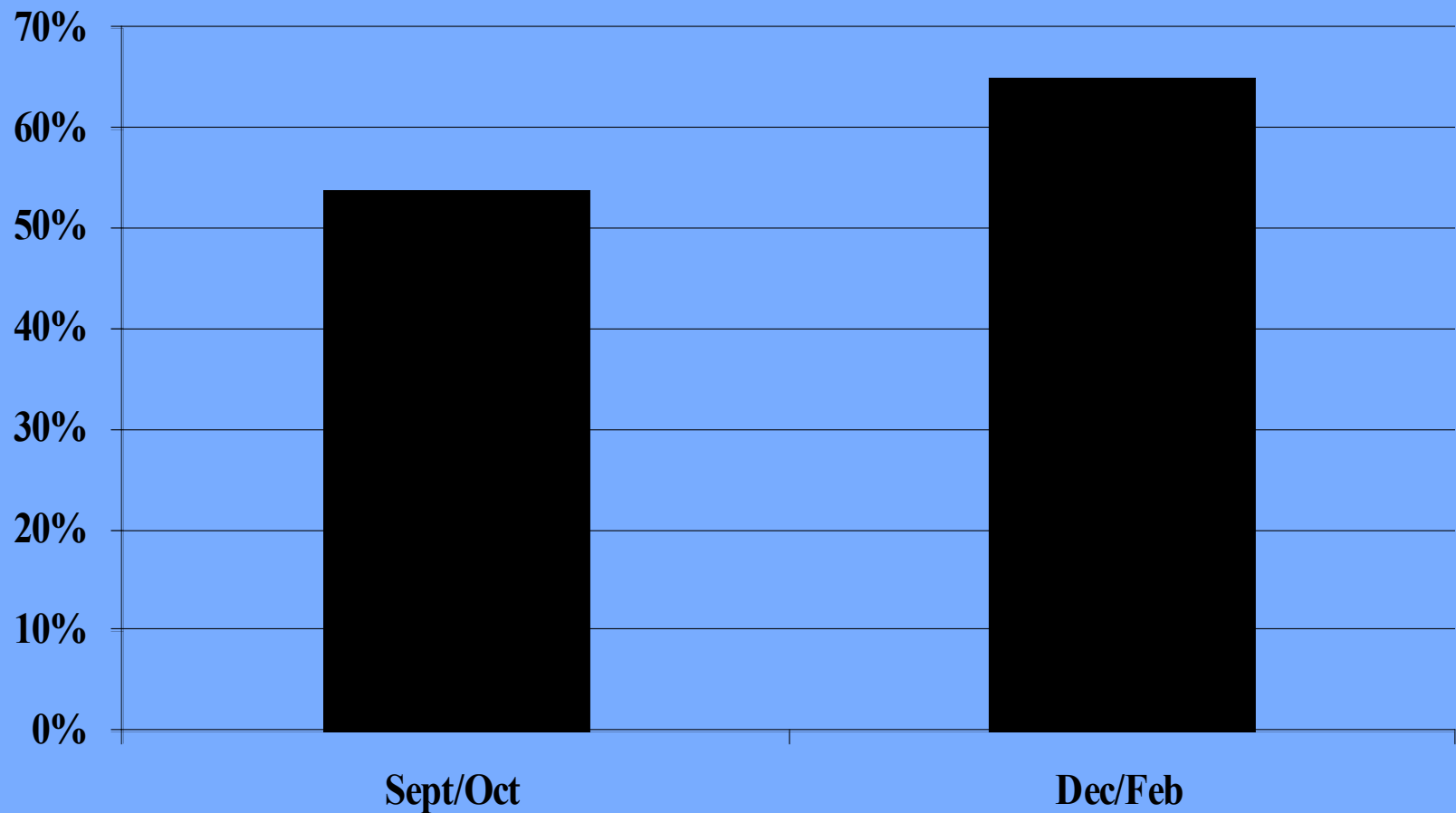
Did the Debate Change
Engagement, Beliefs, or Attitudes?

More Exposure to News Stories About Global Warming

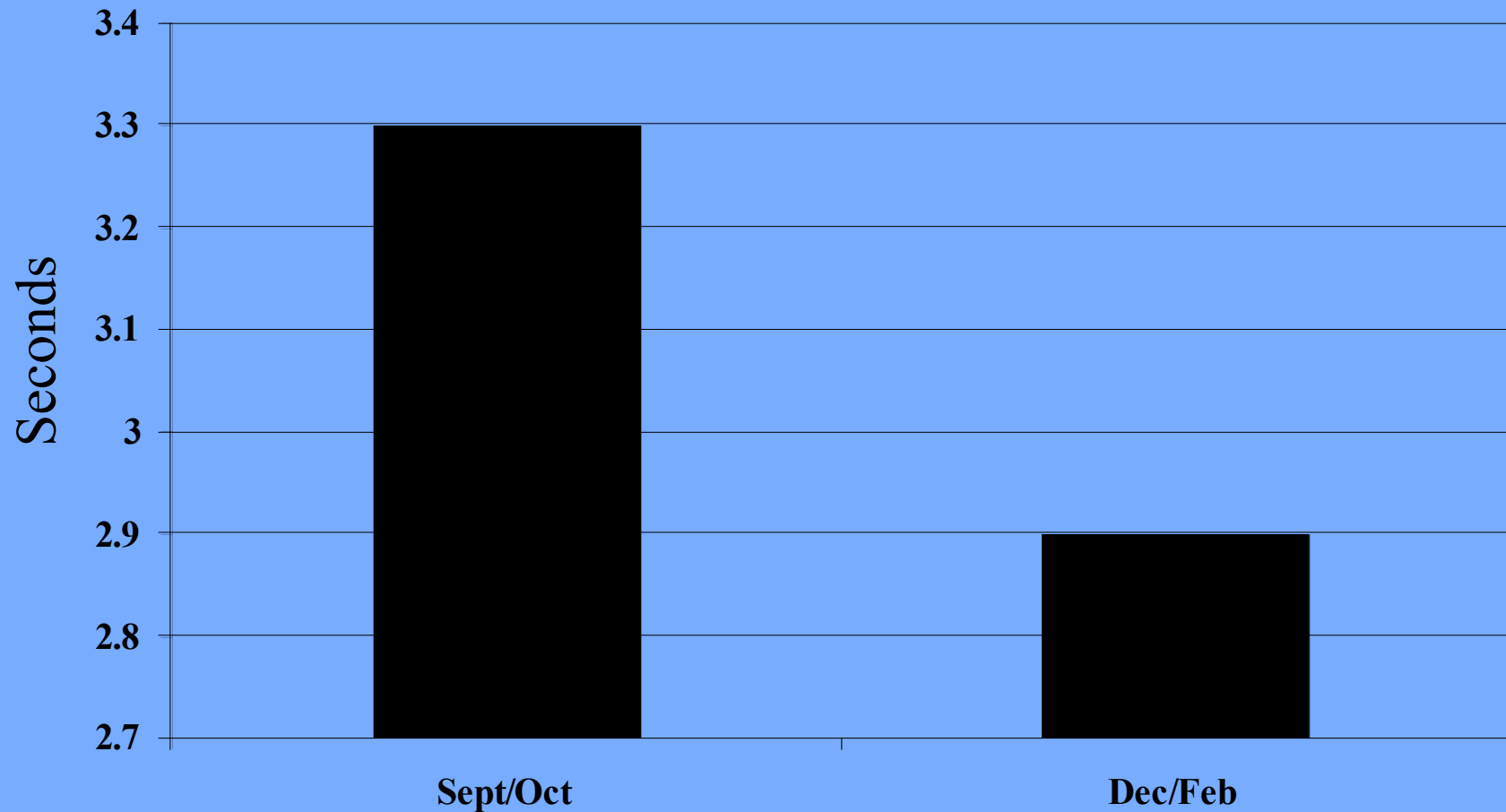


More Thinking About Global Warming

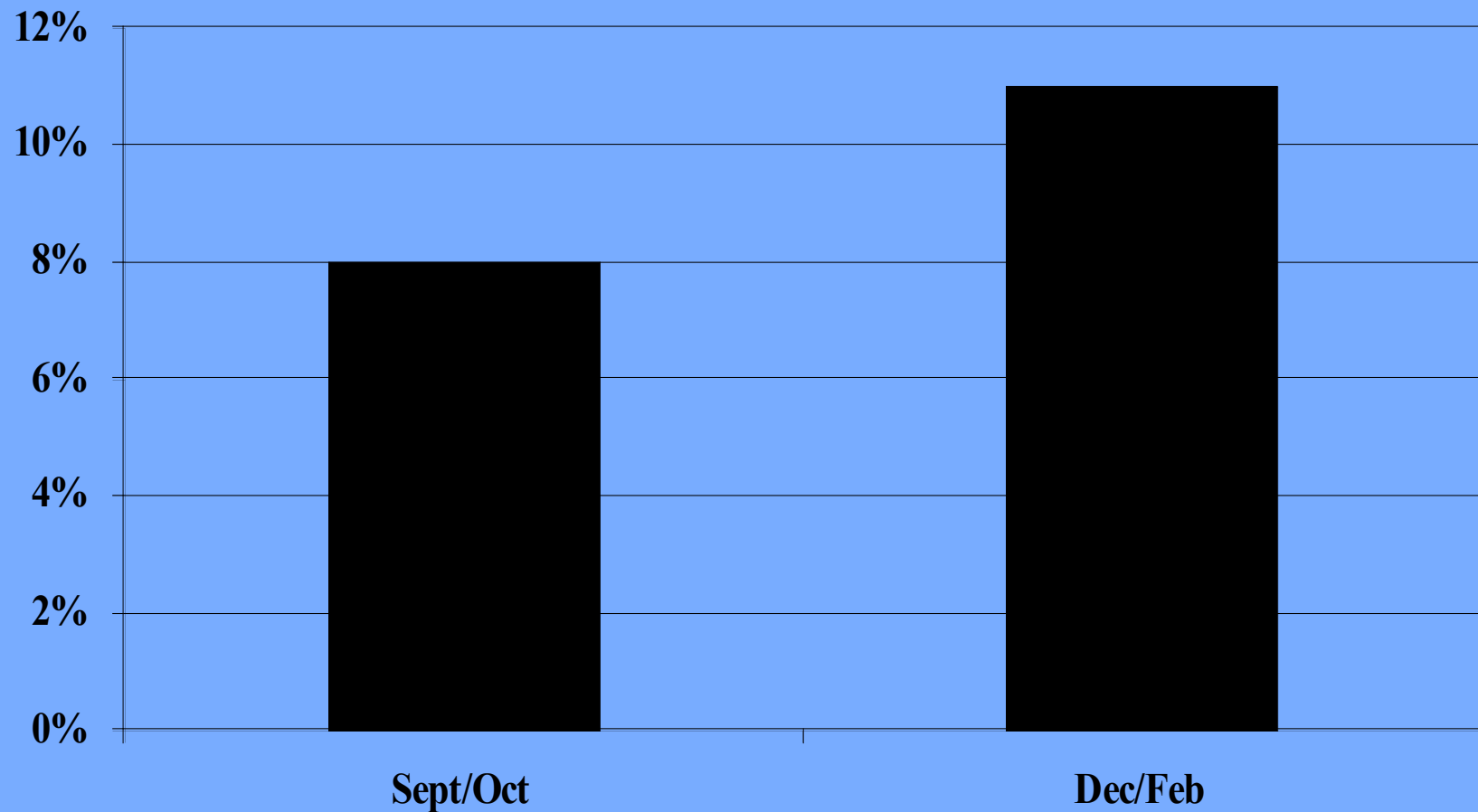
(% “A Lot” & “A Moderate Amount”)



Faster Reaction Time in Reporting Attitudes Toward Global Warming



38% Increase in the Size of the Issue Public (% “Extremely Important”)

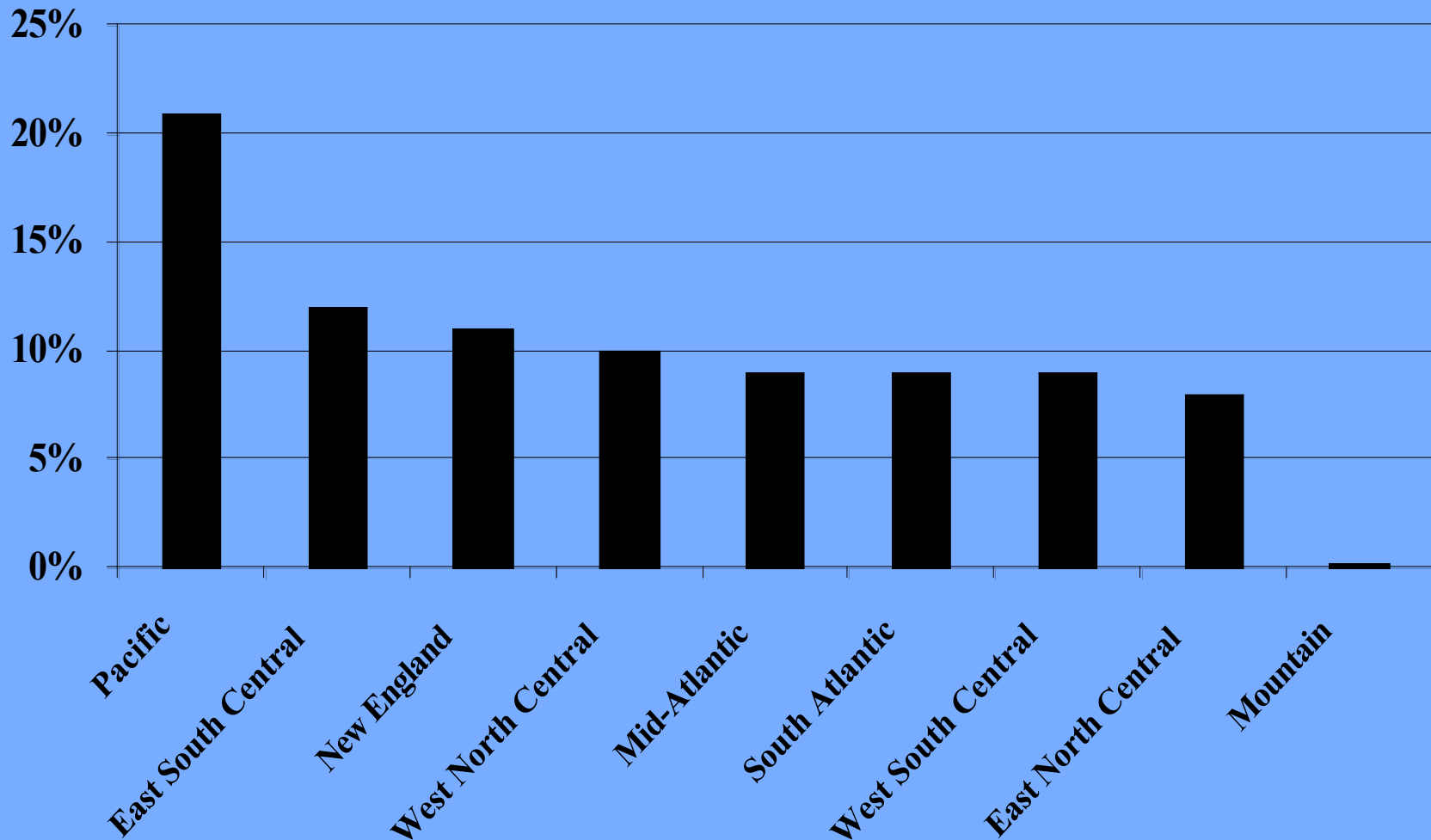


Issue Publics in the United States

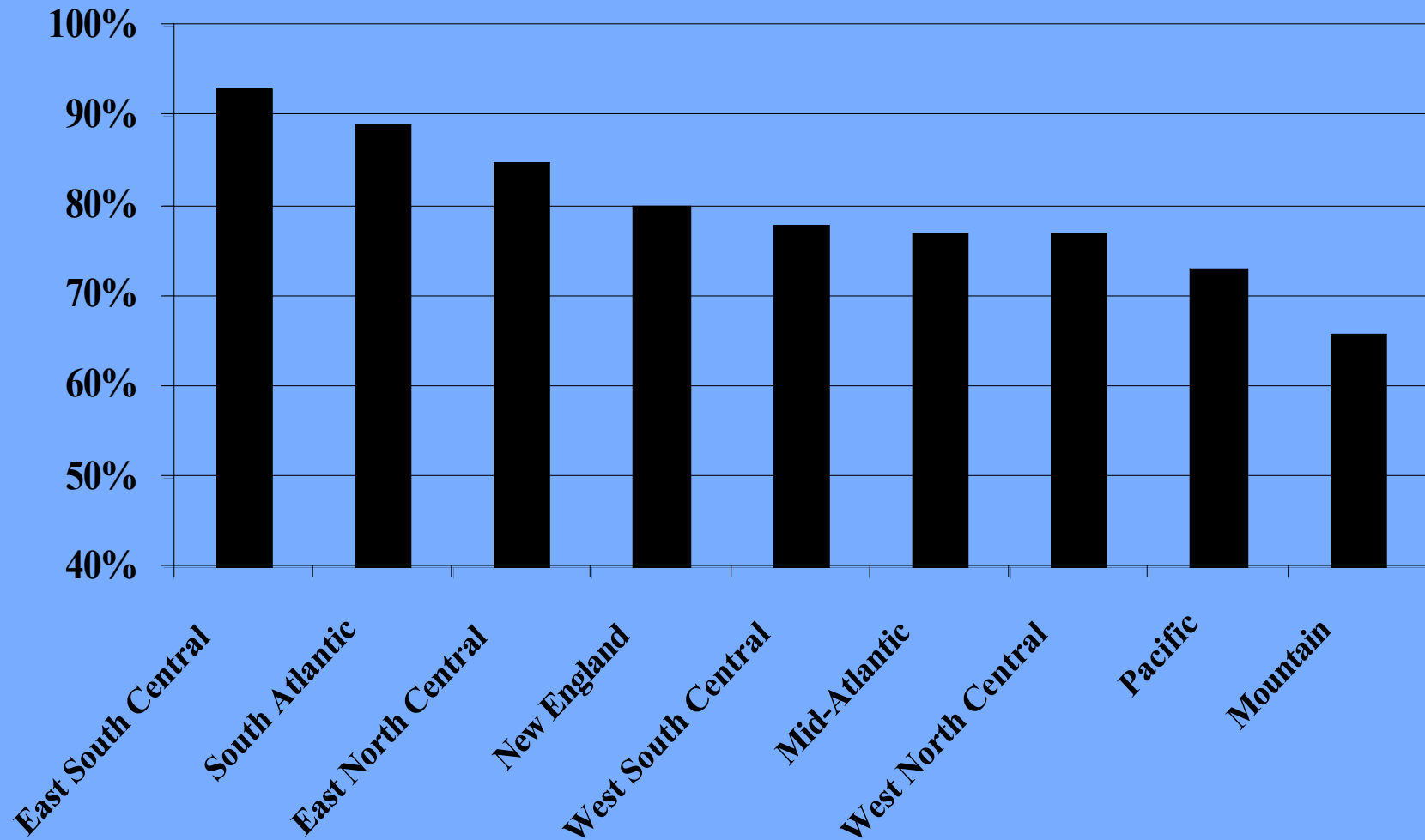
Abortion	31%
Government Social Services Programs	21%
The Environment	18%
Gun Control	17%
U.S. Military Spending	16%
Capital Punishment	14%
Women's Rights	12%
<u>Global Warming</u>	<u>11%</u>
Race Relations	10%
Unemployment	9%

Other Sources: National Election Studies, General Social Surveys

December-February:
Size of the Issue Public
(% “Extremely Important”)

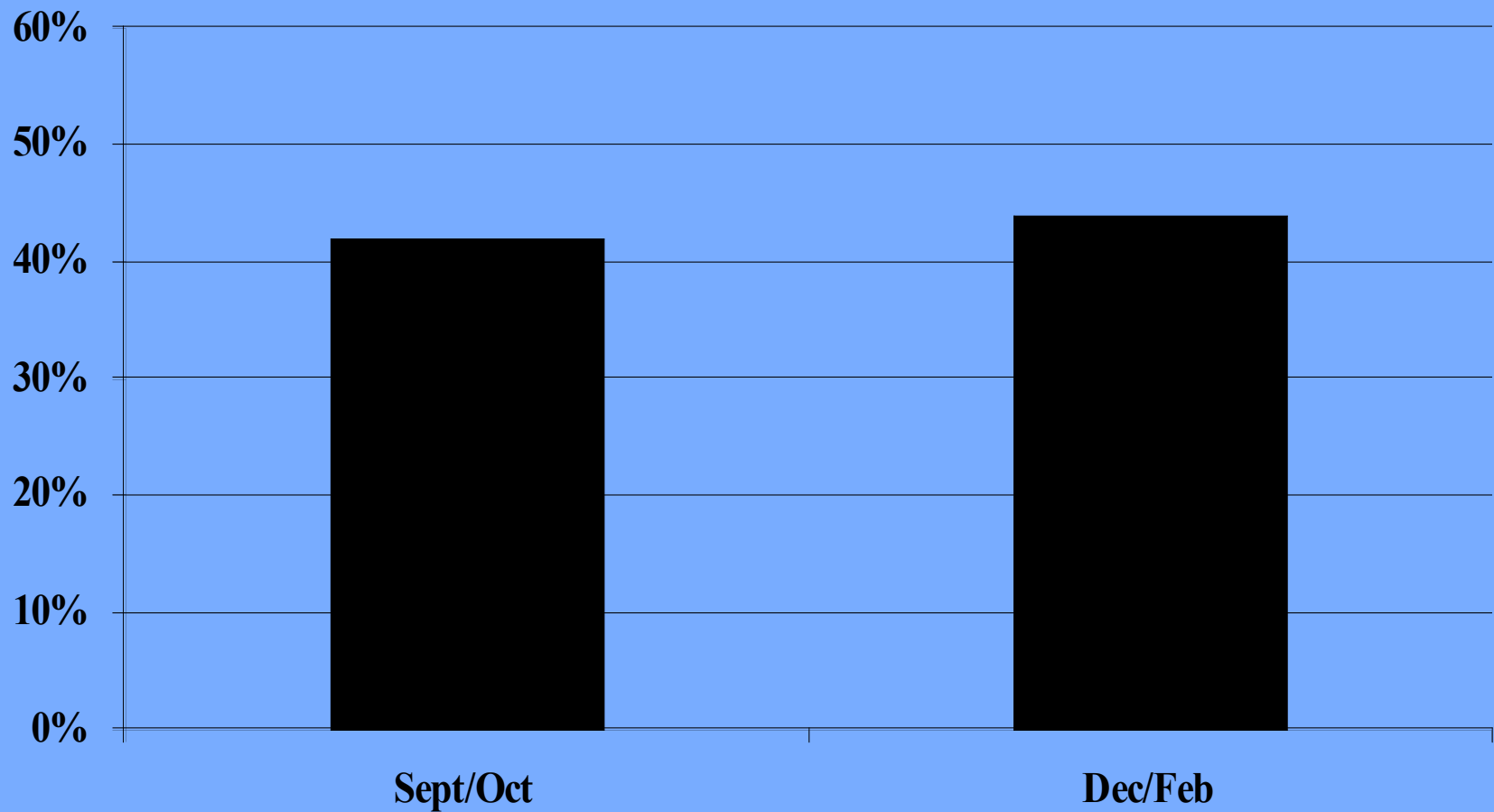


December-February:
Has Global Warming Probably
Been Happening?

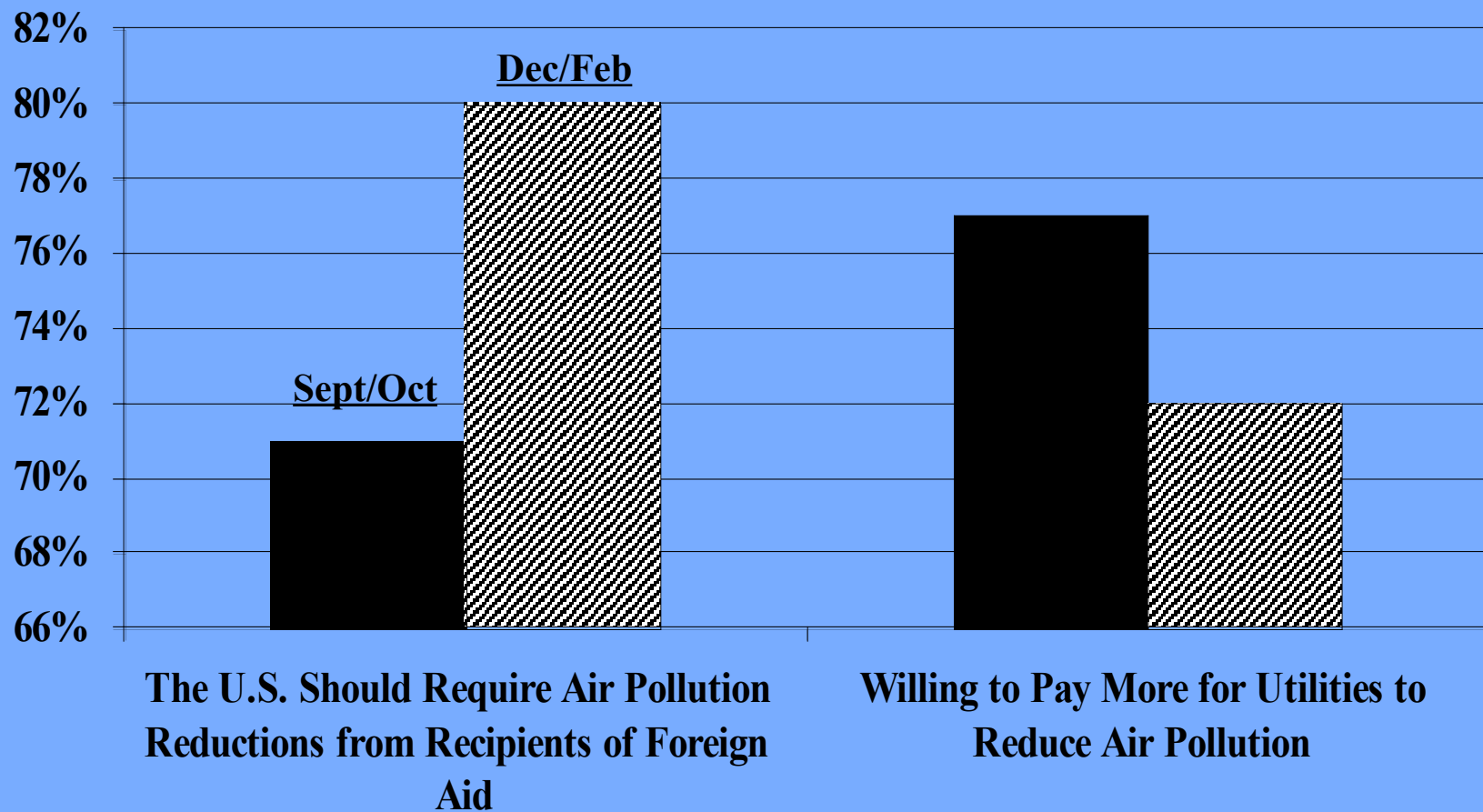


No Knowledge Gained

(% “A Lot” & “A Moderate Amount”)

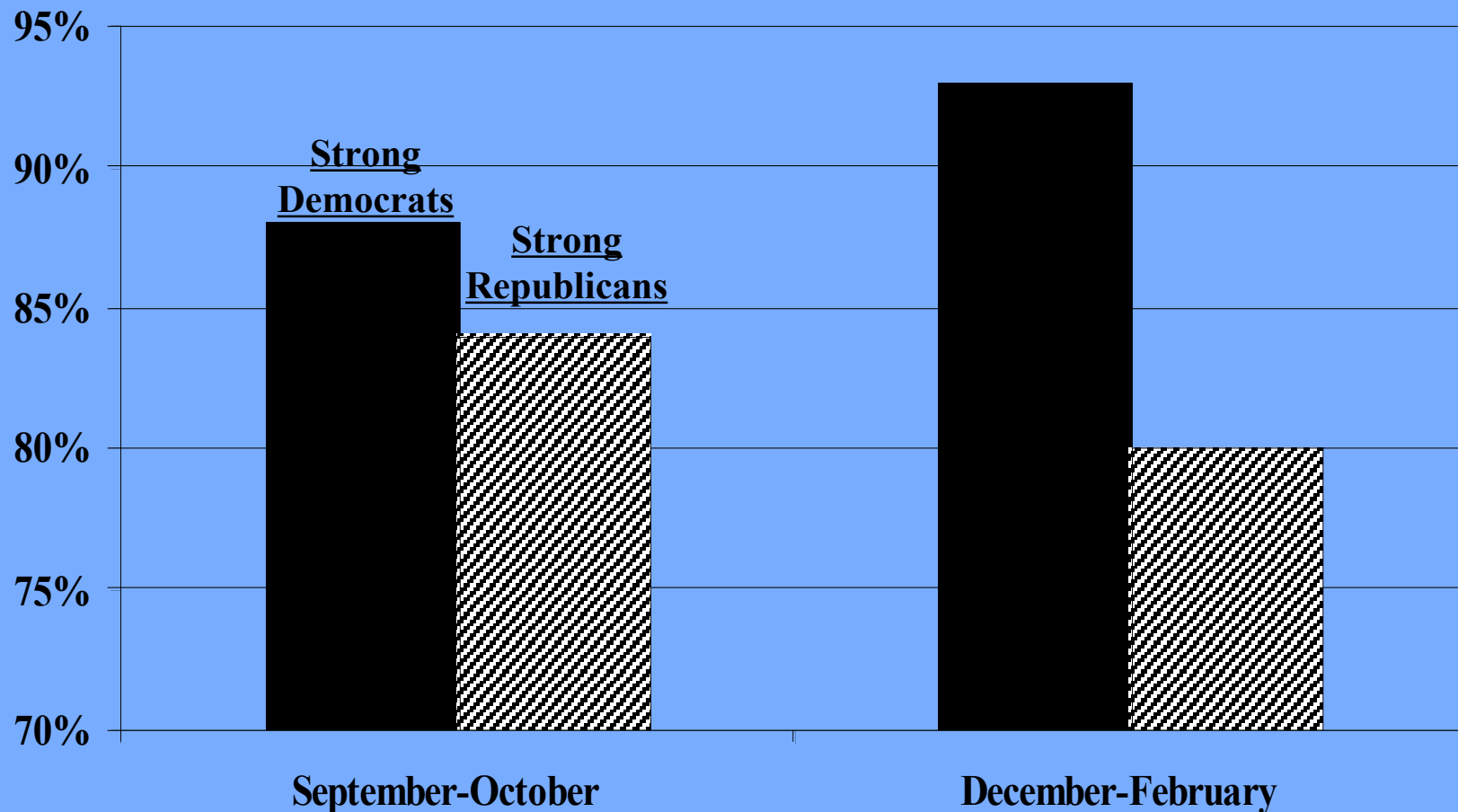


Changes in Policy Preferences and Willingness to Pay



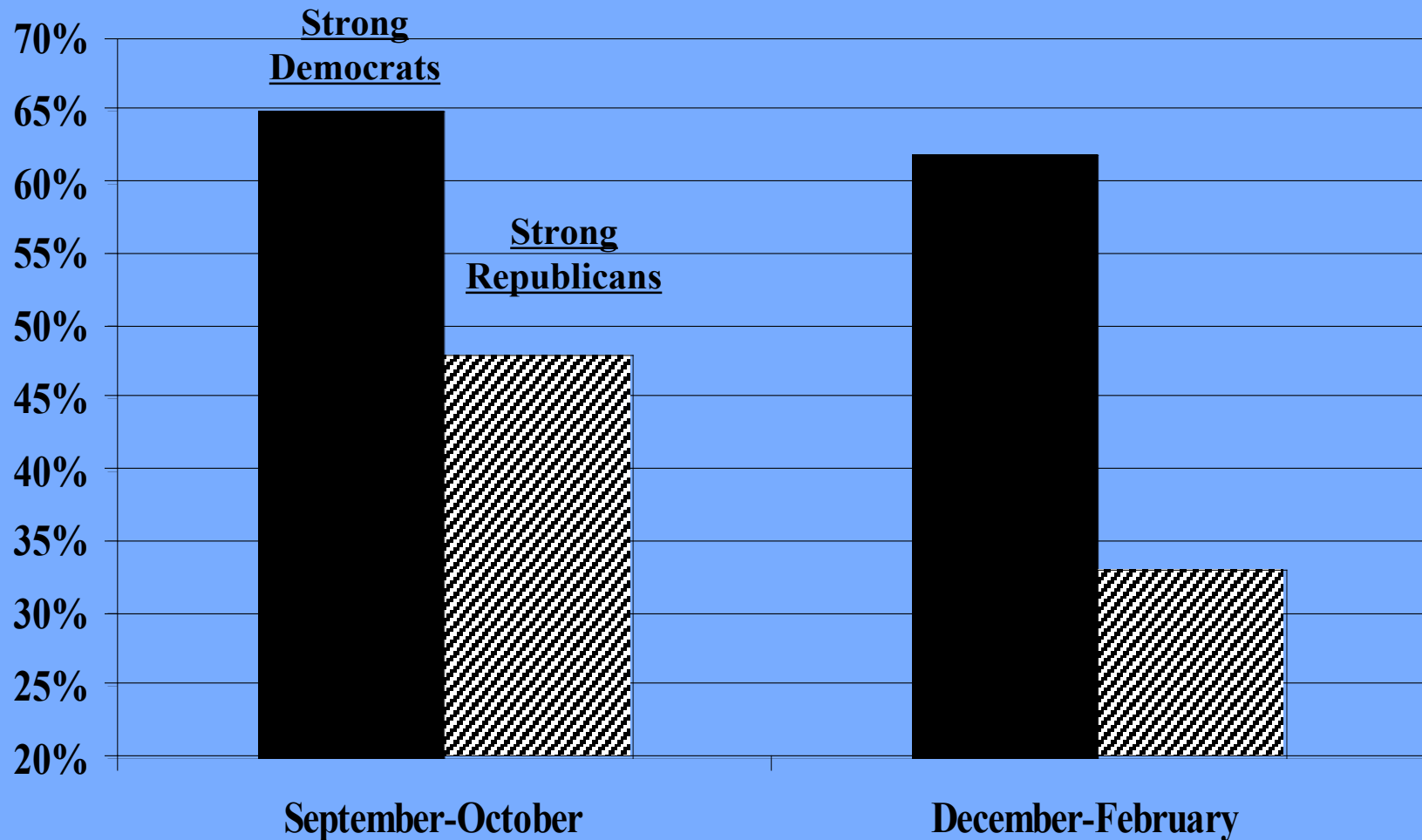
Polarization Along Party Lines

The U.S. Should Limit Air Pollution by U.S. Businesses

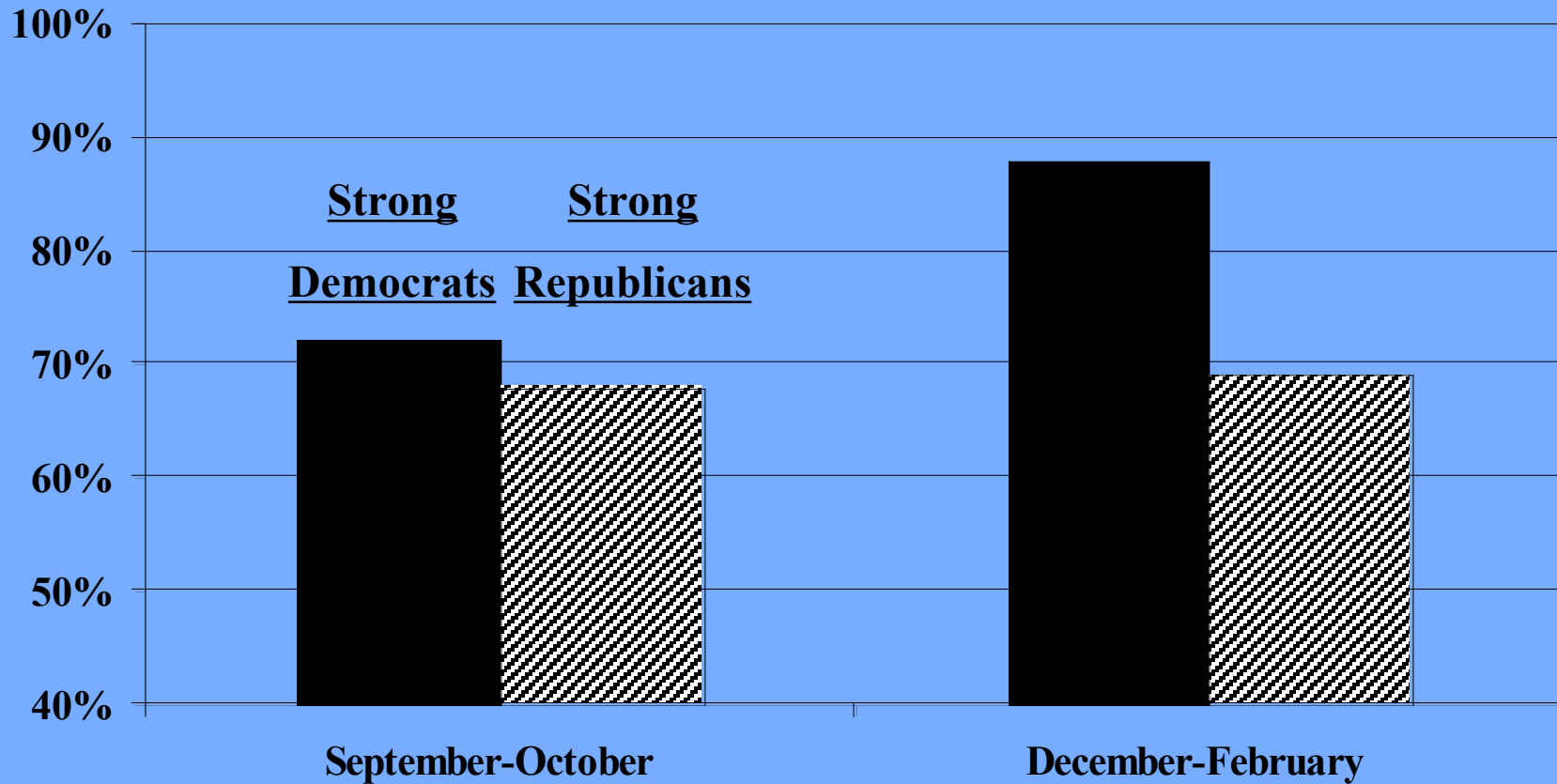


Polarization Along Party Lines

The U.S. Government Should Do “A Great Deal” or “Quite a Bit” To Deal With Global Warming



Polarization Along Party Lines Global Warming Has Probably Been Happening



The Partisan Gap Grew Most Among Low Knowledge People

	<u>Low Knowledge</u>	<u>High Knowledge</u>
Global warming has been happening	19%	2%
Global warming will happen in the future	30%	-12%
U.S. should limit pollution by U.S. businesses	12%	2%
U.S. should require recipients of foreign aid to reduce pollution	25%	-19%

Evaluations of Gerald Ford and Jimmy Carter in the Third 1976 Presidential Campaign Debate

Pre-Debate Preference

	<u>Carter</u>	<u>Neither</u>	<u>Ford</u>
Evaluated Ford Favorably	25%	45%	53%
Evaluated Carter Favorably	71%	55%	21%

Source: Hagner & Rieselbach, 1978, in The Presidential Debates (Praeger)

Four Principal Findings

1: Before the Fall, most Americans believed that:

Global warming is real.

It will be bad for people

Governments and businesses should devote substantial effort to combating it.

The federal government should restrict air pollution by American businesses and foreign countries to which it gives aid.

2: The Fall debate engaged people in thinking about the issue, and opinions became more crystallized.

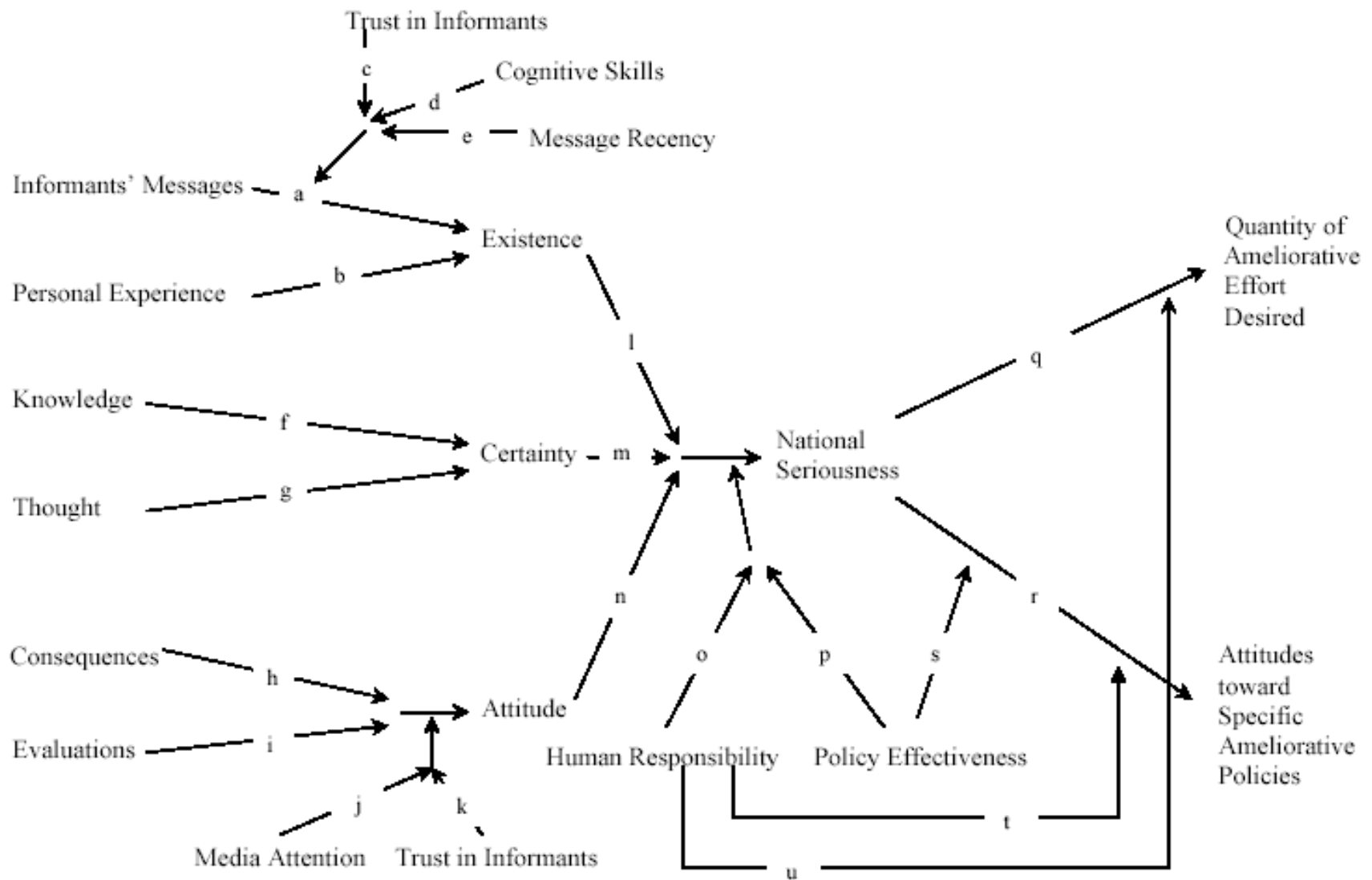
3: The overall balance of opinions did not change dramatically during the Fall.

4: Beneath this “calm” surface, opinions became more polarized along political party lines.

Other Research Projects

Why do some people think GW
is a serious national problem
while other people do not?

Figure 1: ACE Model of the Origins and Consequences of National Seriousness Judgments



What preferences would people have if they were fully informed about the issue?

The Percent of Electricity That Quizzed and Educated Respondents Would Like
to be Generated by Each Method

<u>Question</u>	<u>Average Percent of Electricity to be Generated by Each Method</u>		<u>Difference</u>
	<u>Quizzed Respondents</u>	<u>Educated Respondents</u>	
Coal	11%	21%	10%***
Natural Gas	17%	15%	-2%
Nuclear Energy	20%	16%	-4%+
Hydropower	11%	10%	-1%+
Petroleum	7%	6%	-1%
Solar	19%	13%	-6%***
Wind	14%	20%	6%*

What would people like
government to do about GW?

Which do you favor more?

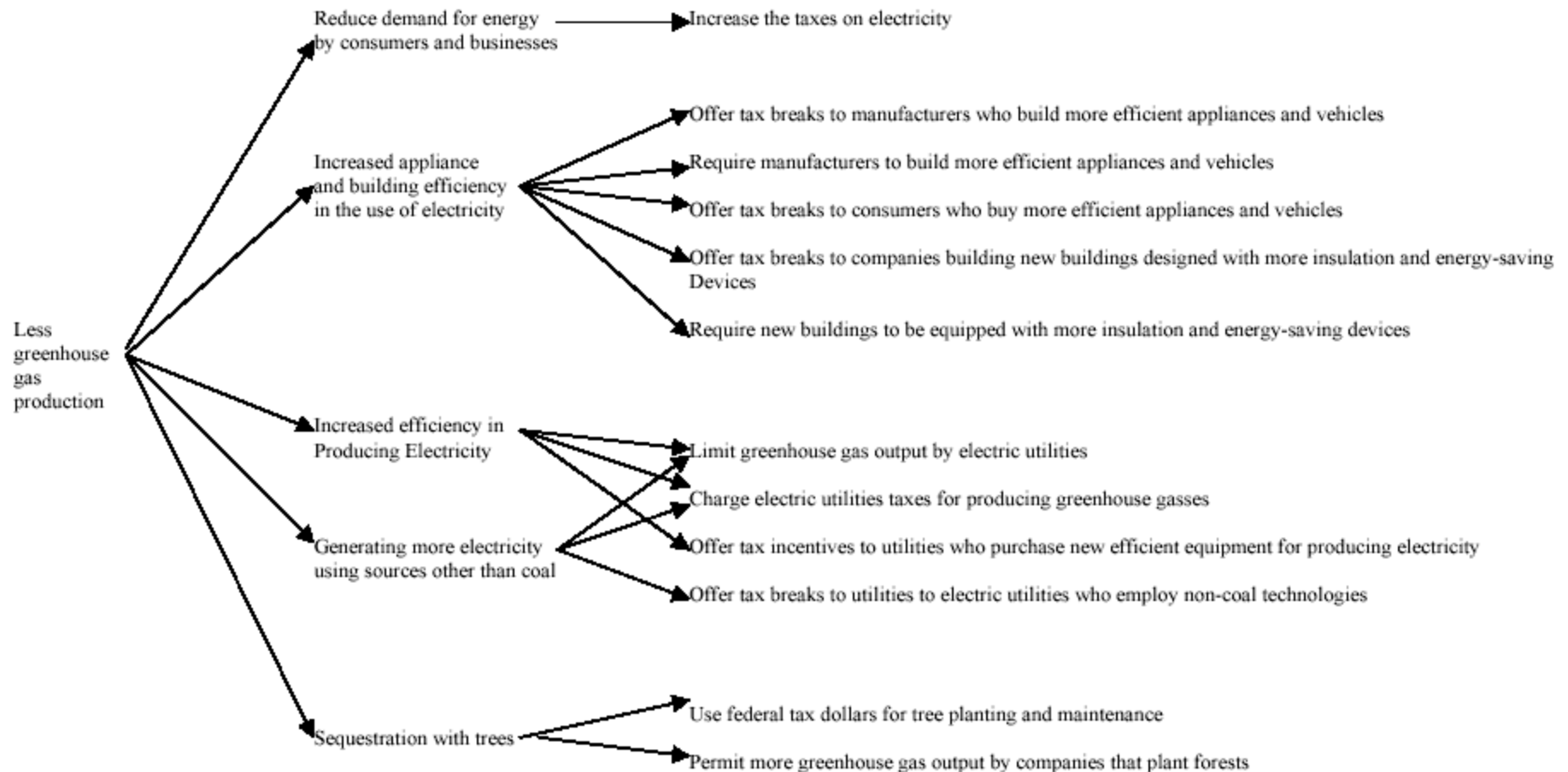
- Reduction 62%
- Adaptation 22%
- No preference 17%

Strategies for Reducing Greenhouse Gas Accumulations

Ultimate Goal

Actors' Behaviors

Government Policies



Strategies for Adapting to Global Warming's Effects

Effects of GW

Adaptation Strategies

Government Policies to Encourage Adaptation

More powerful and frequent tropical storms

Coastal flooding due to rising sea levels

Sporadic rainfall increases in some parts of the U.S., leading to flooding

Reduction in agricultural water supplies in some parts of the U.S.

Reduction in drinking water supplies in some parts of the U.S.

Some animal species may be endangered or face extinction as animals move to adjust to changing climate and face new predators and competitors for food

Die-off in the world's forests

People living on the coast retreat inland

Build new seawalls and drainage systems

Improve drainage and flood protection systems

Planting hardier varieties of plants

Search for new sources of freshwater

Conserve water

Build new reservoirs and wider water distribution systems

Protect threatened animals

Plant trees more suited to the changing climate

Use federal tax dollars to purchase of shoreline property from people

Use federal tax dollars to subsidize building of new seawalls and drainage systems

Use federal tax dollars to fund programs to upgrade drainage and flood protection systems

Offer tax cuts to companies who develop new, hardier varieties of plants

Offer tax cuts to farmers who plant hardier varieties of plants

Federally funded geological surveys

Federally funded research into desalinization

Increase taxes on drinking water

Use federal tax dollars to fund reservoir building and pipe laying

Create nature reserves to protect threatened species in new locations

Prohibit development of land occupied by threatened species

Use federal tax dollars to fund tree planting

Offer permits for greenhouse gas emissions to companies in exchange for tree planting and maintenance

Some Directions for Future Research

1. Explain the diversity of views on global warming in the public.

- Personal experience with the weather.**
- Cue-taking from opinion leaders (scientists, politicians, the media).**
- Political ideology.**
- Selective exposure to different media sources.**

2. Explain why some people have become deeply personally invested in the issue.

- Material self-interest**
- Social identification with others**
- Values**
- Perceived threat of undesirable policy change**

3. Explain why some people support efforts to combat global warming and others do not.

- Belief that humans caused global warming.**
- Belief that nature will repair itself.**
- Beliefs about how effective humans can be in “repairing” the environment.**

4. Explain why people place the greatest weight on food supplies, animal species extinction, and sea level rise in deriving attitudes toward global warming.

- Salience in news media coverage.**
- Magnitude of effects described.**
- Ability to cope and compensate.**
- Basic values.**

5. Explore how easy it would be to change people's opinions, and identify the most potent persuasive messages.

-Experimentally manipulate exposure to information advocating one view or another, and measure change.

6. Explore how much people are willing to pay in increased utility costs or taxes to reduce greenhouse gas emissions.

-Experimentally manipulate methods of reduction, amounts of reduction, and mechanisms of payment, and assess willingness to pay.