BANKRUPT RHETORIC
HOW MISLEADING INFORMATION AFFECTS KNOWLEDGE ABOUT SOCIAL SECURITY

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Abstract   Most citizens know little about politics. Scholars often attribute political ignorance to individual-level factors, but we concentrate on the quality of the information environment. Employing a combination of experimental methods and content analysis, we code statements from the 1998–99 debate over Social Security reform as either misleading or not misleading. Then, using surveys conducted during the debate, we examine the impact of individual- and environmental-level variables on political knowledge about the program's future. We show that misleading statements about Social Security's future cause some citizens to get an important fact about the program wrong. More precisely, many citizens mistakenly believe that Social Security will run out of money because political elites occasionally use words that lead to overly pessimistic assessments of the program's financial future. Our findings have important implications for policymakers who are attempting to remake America's largest federal program, scholars who study citizen competence, and citizens in a representative democracy.

According to Philip Converse, two "simple truths" characterize the distribution of political information in the United States: the mean is low, and the variance is high (1990, p. 372). Whereas low and uneven levels of political knowledge often are attributed to individual-level factors, such as the unwillingness of citizens to front the cost of acquiring information (Downs 1957) or particular social and demographic characteristics (Delli Carpini and Keeter 1996), we examine the role of the information environment. The notion that the environment may contribute to public ignorance is not new (e.g., Key

1966). However, with the exception of a handful of studies (e.g., Althaus 2003; Hutchings 2001; Jerit, Barabas, and Bolsen 2006), there has been relatively little attention to the mechanisms and limits of this influence. We also are unsure about the relative impact of individual versus environmental correlates of knowledge or, indeed, if the two factors interact with one another.

Our inquiry is part of a recent trend in the study of citizen competence, one that focuses on the context within which citizens make political judgments (e.g., Kuklinski et al. 2001; Nicholson 2003; Sniderman 2000). Though previous research has examined the impact of the information environment in election campaigns (Dalton, Beck, and Huckfeldt 1998; Druckman 2005; Freedman, Franz, and Goldstein 2004; Just et al. 1996), our study is among the first to examine the information environment of a policy debate. In doing so, we ask a series of questions: How does the quality of public debate affect political knowledge? Do misleading statements by journalists and political elites lead to lower levels of knowledge? And, finally, can personal traits such as education counteract deficiencies in the information environment?

Knowing the answers to these questions has important normative implications. Proponents of participatory democracy (Barber 1984; Pateman 1970) desire a more engaged citizenry; and yet, greater engagement with the political system will not lead to a more informed electorate if the quality of the information environment is poor. At the opposite extreme, adherents of elite democracy (Lippmann 1922; Schumpeter [1942] 1950) fault citizens for their lack of political knowledge without recognizing that elites may be the source of ignorance or misinformation in some instances. Therefore, an investigation into the individual and environmental correlates of political knowledge is long overdue. We examine this subject in the context of the Social Security reform debate and find that misleading statements about Social Security's future cause some citizens to get an important fact about the program wrong.

Mediated Political Information

Given the complexity of the political problems that confront modern societies, deliberation over public policies is largely mediated (Page 1996). We delegate the responsibility of studying alternative policies to journalists, experts, elected officials, and other elites, and they in turn publicly debate the relative merits of competing policy solutions. This division of labor is the hallmark of a representative democracy. And yet, there is a potential danger with this arrangement. To the extent that we depend on professional communicators to deliberate for us, Page writes, "public opinion is bound to depend, in good part, upon the political information and ideas that are conveyed to it" (Page 1996, p. 2; also see Key 1961; Robertson 1976).[1]

1. Most citizens rely on the mass media for political information, either directly or indirectly through discussions with friends and colleagues (Huckfeldt 2001; Katz and Lazarsfeld 1955; Mutz and Mondak 2006).

At the least, then, information about important problems and issues must be available. When it is, citizens are more likely to be familiar with the facts relevant to policy debate—the nature of the policy problem, the contours of the proposed solutions, and the relative merits of competing plans (Page and Shapiro 1992, p. 355). When important issues do not receive adequate coverage or when elites fail to disseminate policy-relevant information, citizens' judgments lack an important foundation. Of course, more information is not necessarily better (e.g., Lupia and McCubbins 1998, p. 27). Given the public's limited appetite for news about politics, there likely is a declining marginal effect for increasing amounts of political information. In addition, a number of factors mediate the acceptance of elite messages, such as political predispositions (Zaller 1992) and preconceived beliefs about the political world (Hochschild 2001; Kuklinski et al. 2000). Thus, citizens might not incorporate factual information into their judgments even if it were widely available. Notwithstanding these important caveats, it is reasonable to presume that some minimal amount of information must be available in order for citizens to form sensible judgments about policy proposals.

From the standpoint of evaluating the information environment, what is said does not matter nearly as much as how it is said (Page and Shapiro 1992, p. 34). When discussing a policy proposal, for example, elites may provide a literal description, such as, "The administration's plan uses the Social Security surplus to reduce the federal debt, saving billions in interest payments that would then be used to extend the life of the program." Alternatively, elites may adopt a thematic approach (e.g., "The vice president's plan provides security to millions of elderly Americans") or invoke images (e.g., "lock box") to make their point (Edelman 1964). There are a number of ways to communicate the same idea to the public, and political operatives conduct extensive research on public opinion to identify the words, arguments, and symbols that are most persuasive (Jacobs and Shapiro 2000).

Although judgments about the quality of the information environment have the potential to be highly subjective, most would agree that completeness and accuracy are preferable to distortion and selective presentation. When elites provide information that is inaccurate, incomplete, or misleading, citizens may make mistaken evaluations of policy alternatives (Page and Shapiro 1992). At a minimum, their understanding of the important issues—the nature of the problem and the substance of the proposed solutions—will be compromised. The very nature of our political system, with its decentralized network of professional communicators, contains an important check against the wholesale manipulation of the mass public. As long as the sources of news are diffuse and competitive, the quality of the information environment ought to be high (Key 1961; Mill [1859] 1947; Page and Shapiro 1992; Zaller 1992, chap. 12).

But not all messages have an equivalent effect on citizens. As Nadeau and Niemi (1995) p. 327, observe, "certain types of information stand out more than others and are therefore used as a basis for generalization." For instance,

vivid information is more easily recalled than dull or pallid stimuli (Fiske and Taylor 1984, p. 256). Thus, news stories that are emotionally interesting, concrete, or image-provoking will be better remembered than those that are not (Graber 2001). Studies also have shown that people pay more attention to and are better able to recall negative information (e.g., Pratto and John 1991). Finally, individuals tend to be risk averse which can make them highly sensitive to the prospect of future losses (Kahneman and Tversky 1984). In short, individuals are drawn to information that is vivid, negative, or signals a potential threat. The greater the reliance on these types of cues, the more likely people are to draw incorrect inferences about the world around them (Nadeau and Niemi 1995, p. 326).

The Social Security Debate of 1998–1999

In the late 1990s political elites began a dialogue on how to reform the nation's retirement security system.[2] The board of trustees overseeing Social Security warned that in the early part of the twenty-first century, the Social Security program would stop taking in more money through payroll taxes than it pays out in benefits. Although surpluses would be sufficient to meet benefit obligations for another 20 years, assets in the trust fund were projected to be depleted by the 2030s.[3] As the trustees and other policymakers cautioned, unless action was taken to address the future deficit, Social Security would be able to finance roughly 75 percent of the benefits, assuming no other changes were made (Rubin et al. 1998; also see Aaron and Reischauer 2001, 2; Gramlich 1998, p. 33; Page and Simmons 2000, p. 85).

At about the same time, President Bill Clinton put the issue squarely on the national agenda in his 1998 State of the Union address, and political elites engaged in a national public debate over the future of the Social Security program. Over the next year and a half, Social Security was among the most heavily covered topics in the national media. Thus, information about Social Security reform clearly was available. However, some have criticized the reform debate, charging that the discussion was couched in a "language of crisis" (Page 2000, p. 191; also see Page and Simmons 2000) and that the whole idea of a Social Security crisis was "phony" (Baker and Weisbrot 1999). The question we sought to answer was, did the quality of political rhetoric have an effect on citizens' knowledge about Social Security?

We begin by noting a key assumption of this study: when people are asked survey questions about the financial status of Social Security, they canvass the cues, beliefs, and feelings that are most accessible.[4] As the preceding discussion

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2. In keeping with Page's (1996) notion of "professional communicators," we adopt a broad view of elites, including journalists, pundits, elected officials, group representatives, and experts.
3. The dates are revised each year based on economic performance and demographic trends.
4. Nadeau and Niemi (1995) state the process by which people answer factual questions is similar to the one by which they respond to opinion questions—i.e., both are top of the head phenomena.

implies, some types of information are more likely to be sampled than others. Considerations about the "impending bankruptcy" of the program should be particularly accessible, given that such elite rhetoric forecast a negative outcome *and* that this outcome was likely to be perceived as threatening. During 1998–99, partisans and journalists alike were sounding the same doomsday message regarding Social Security (Page and Simmons 2000, pp. 83–84). Even if citizens recalled few details from the debate (Lodge, McGraw, and Stroh 1989), their general impression of the program's future probably was not positive.[5]

We expect that higher levels of misleading information in the news media should alter the balance of considerations in citizens' heads—in the direction of overestimating the severity of the funding dilemma—and cause them to incorrectly state that Social Security will run out of money completely when asked about the program's future (H1). Moreover, the effect of misleading rhetoric should be greatest for those who were following the debate (H2).

The decision to examine the case of Social Security reform was deliberate. As America's largest federal program, Social Security is viewed as an important issue both by citizens and their elected representatives (Campbell 2002). Moreover, major changes in how the program operates may occur in the near future (Diamond and Orzag 2004). In an analogy we will return to later, many people mistakenly believe the Social Security program is like a car rambling down the road with its gas gauge approaching empty. If citizens are to play a meaningful role in Social Security reform, they should be able to assess the severity of the situation (i.e., is the gauge really on empty?) and what will happen if no changes are made. Misleading rhetoric about the future of Social Security is important because it may dramatically alter the direction of reform.

Data and Methods

To test our hypotheses regarding the information environment, we combined two data sets. The first is a series of four public opinion surveys that asked detailed questions relating to Social Security and its future; the second is a collection of all Associated Press (AP) stories that mentioned Social Security during the one-month period before each of the four surveys. We discuss each of these, beginning with our measure of political knowledge.

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5. Exposure to misleading information may be more pernicious than it may at first seem. Research in education psychology has shown that exposure to incorrect information impairs subjects' memory for correct information (Brown, Schilling, and Hockensmith 1999)—a finding originally called the "negative suggestion effect" (Remmers and Remmers 1926). Moreover, repeated exposure to incorrect information enhances its credibility (e.g., Begg and Armour 1991; see Bullock 2006 for more on the effects of false information).

POLITICAL KNOWLEDGE ABOUT SOCIAL SECURITY

Given the prominence of Social Security reform on the public agenda, Princeton Survey Research Associates (PSRA) conducted four cross-sectional random sample surveys of the American public from March 1998 to May 1999.[6] These surveys asked a number of questions that measured citizens' knowledge of and preferences regarding various reform options. Of special interest to us was a question tapping respondents' understanding of the nature of the financial problems facing the Social Security program. This particular topic was a continuing thread throughout the debate. In contrast to some of the other questions PSRA asked (e.g., who is eligible for Social Security, or how much financial experts say individuals will need in retirement), we had strong expectations that the public debate over Social Security reform would influence the likelihood of correctly answering this question.

The wording of the question was, "If no changes are made to the Social Security program . . . what do you think will happen? Will Social Security run out of money completely; have only enough money to pay everyone less than half the benefits they would get today; have enough to pay everyone about three-quarters of the benefits they would get today; [or] have enough to pay full benefits to everyone." The correct answer was "three-quarters," although no more than 15 percent of the respondents answered the question correctly across each administration of the survey. By contrast, about a third of the respondents in each survey thought the program would run out of money completely. The modal response was "half."[7]

People may draw different conclusions from these figures. Considering only "bankrupt" responses, just a third of respondents (between 33 percent and 35 percent) thought the program was going to run out of money completely. Taken at face value, that is not too bad (see Cook and Jacobs 2002, p. 87). However, an even smaller percentage (no more than 15 percent) provided the correct (i.e., "three-quarters") response. Moreover, knowledge of this particular feature of Social Security was lower than other aspects of program (e.g., Jacobs and Shapiro 1998; Shaw and Mysiewicz 2004). So, while two-thirds of the public selected something other than a "run out of money completely" response, nearly the same proportion thought the program was on shakier financial footing than was really the case (see Cook, Barabas, and Page 2002, pp.156–58, for discussion).

6. The first survey was conducted March 13–22, 1998 ($N = 1,202$), the second ran July 8–22, 1998 ($N = 1,200$), the third lasted from February 2 to February 14, 1999 ($N = 1,000$), and the fourth was fielded May 3–17, 1999 ($N = 1,001$). These random digit dial surveys were conducted in English and Spanish with nationally representative samples of adults age 18 and older in the continental United States. The response rate using the American Association for Public Opinion Research (AAPOR) definition (response rate 4) was 40 percent (AAPOR 2006). The analyses use data that have been weighted to be nationally representative.
7. There is little evidence of over-time learning. The percentage getting the question correct actually declined across the four periods.

THE PUBLIC DEBATE OVER SOCIAL SECURITY REFORM

In order to determine the quality of information about Social Security, we conducted a content analysis of Associated Press stories in the one-month period preceding each survey.[8] Although a number of studies have relied on the AP (e.g., Flowers, Haynes, and Crespin 2003; Jacobs and Shapiro 2000), our use of this source warrants some explanation. In the United States alone, the Associated Press serves 1,700 newspapers and 5,000 radio and television stations by providing ready-to-print news stories and reliable resources to fill holes in stories. Because it has such an extensive reach, content analysis of AP stories provides us with a good sense of the kind of information respondents in our surveys might have encountered in media outlets around the country.[9] Indeed, Jacobs and Shapiro (2000, p. 160) defend their use of the AP by noting, "Editors and journalists widely use the AP wire service throughout the nation; while regional news outlets have a narrow geographic scope and audience, AP stories get reported nationally."

Scholars familiar with the Social Security debate (Baker and Weisbrot 1999; Page 2000) have noted that elites, journalists, and other talking heads tended to exaggerate the financial problems of Social Security. One plausible measure of the quality of the information environment is the extent to which the public debate presents a misleading picture of the viability of the program. Since identifying misleading statements had the potential to be subjective, we conducted an experiment to help us with the task.

We first culled stories and took note of the words and phrases that were most commonly used when elites, journalists, and other political actors were discussing the viability of the Social Security program.[10] This effort yielded 41 words and phrases, which in theory may be placed along a continuum, with the most accurate statements at one end (e.g., "If politicians do not make any changes to the fund, Social Security will be able to finance only 75 percent of benefits in future years") and potentially misleading statements at the other (e.g., "Social Security will begin to go bankrupt . . . if we don't find solutions now"). In order to determine whether a particular word or phrase was misleading, we conducted an experiment ($N = 268$) in which randomly assigned subjects were exposed to statements from the Social Security debate and then asked to answer the "If No Changes" question described above. In other words, the experiment allowed us to establish empirically which kinds of rhetoric were associated with estimates that Social Security would run out of money (for more details on the experiment, see the appendix). We then used

8. The results we report below are robust to shorter time periods (e.g., one- and two-week intervals).
9. Coverage of the Social Security debate in other outlets (*New York Times*, CNN, and CBS) was similar to that in the AP. The correlation in the number of stories about Social Security across the four sources ranges from .62 to .73 ($p < .01$).
10. Statements about the viability of the Social Security program constituted anywhere from a third to a half of all statements that were made during each of our four content analysis periods. We examine the effect of other types of rhetoric and report those results later.

our experimental findings to code the 41 target words and phrases as either misleading or not when they appeared in news reports.

OPERATIONALIZATION OF KEY VARIABLES AND MODEL CHOICE

The dependent variable in our analysis is the "If No Changes" question. In its original form, this variable is ordinal, which is to say that the response options can be ranked from low ("run out of money") to high ("pay full benefits"), and the distance between adjacent categories is unknown. The ordered probit model, introduced by McKelvey and Zavonia (1975), is a natural choice in this context (Long 1997).

Alternatives to ordered probit include models with a dichotomous dependent variable (e.g., where 1 = "run out of money") or multinomial logit (where the response categories are treated as nominal categories). We prefer the original, ordered version of the "If No Changes" variable for a number of reasons. A dichotomous dependent variable discards useful information. A multinomial logit, by contrast, generates estimates for multiple equations, making interpretation and the presentation of results more complicated. Finally, much like the gauge on a gas tank that denotes whether a car is full of gas or empty, the response options of the "If No Changes" question clearly are ordered, making ordered probit the most appropriate choice. (In this case, the correct answer is the third response option, and all other responses technically are inaccurate.) Fortunately, our substantive conclusions change little when we explore models for dichotomous or nominal dependent variables.[11]

Our first group of independent variables describes the information environment prior to each survey. For each one-month period preceding the four surveys, we tallied the proportion of statements related to Social Security that used misleading language.[12] We hypothesize that the higher the proportion of misleading statements, the more likely our respondents would be to incorrectly respond that Social Security will run out of money completely (i.e., go "bankrupt"). In order to account for differences in media coverage of Social Security throughout 1998 and 1999, the model also includes a measure of media salience. Using the total number of news stories reported by the Associated Press on nineteen domestic and international issues, we determined how much attention was devoted to Social Security relative to other issues in each

11. Two other methodological decisions deserve mention. Following Mondak (2001; Mondak and Davis 2001), we randomly assigned the "don't know" responses to the remaining answer choices in an effort to avoid discarding the 480 respondents (nearly 11 percent) who failed to answer the knowledge question. Estimating the model without the "don't know" cases does not alter our substantive conclusions. To offset listwise deletion in our independent variables, we used the Amelia software program (King et al. 2001) to obtain imputed values for respondents who did not provide their age, income, education, and financial expertise.
12. The values of the misleading variable across the four periods range from just over 10 percent of the information environment (.11) to nearly a third (.28).

of the four periods.[13] Our expectations regarding media salience are unclear. On the one hand, more media attention might provide a greater diversity of viewpoints, thereby increasing the likelihood that accurate information about the program's future will reach members of the public (Page 1996). On the other hand, devoting more attention to an issue will increase knowledge only if the overall quality of political rhetoric is high. If greater media attention to Social Security simply reminded citizens of menacing images (such as an empty bank account), we might expect media salience to be associated with lower levels of knowledge.

In addition to these environmental measures, we included a number of individual-level variables. Unfortunately, the PSRA surveys did not ask the standard series of questions that could be used to create a general political awareness measure (Zaller 1992). Our model includes education, a measure that others have used as a proxy for political sophistication (Zaller and Hunt 1994; also see Nadeau and Niemi 1995). Fortunately, PSRA did ask respondents how closely they were following the Social Security debate. Similar measures have been used in past studies to control for varying levels of interest in and attention to elite communications (e.g., Dalton, Beck, and Huckfeldt 1998, p. 121; Hetherington 1996, p. 377).[14] Given the fact that partisan actors on both sides of the aisle were sounding a similar message— "Social Security is going broke"—we expected those who followed the debate to be most susceptible to the effects of misleading rhetoric. Finally, we expected a number of other individual-level variables to be related to knowledge. Building on research in this area, we included demographic and background characteristics such as age, education, and income (Delli Carpini and Keeter 1996). The topical nature of the PSRA surveys also provided us with other relevant variables, such as measures of discussion, strength of views, and financial expertise.[15]

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13. The variable represents the number of stories devoted to Social Security as a proportion of all stories reported by the AP. It indicates how much attention Social Security received in the media relative to other issues. Of course, individuals differ in how important they think Social Security is; we control for that with a different set of variables. The values of the media salience variable across the four time periods were .11, .10, .21, and .12. See the appendix for more details.

14. The question reads, "There has been a lot of debate lately in Washington and around the country about the Social Security program. This is the government's program to provide income for older people. How closely have you been following this debate? Would you say very closely, fairly closely, not too closely, or not closely at all?" We created a dichotomous version of the variable to account for subjective differences in the way individuals interpret the question (1 = following very or fairly closely, 0 = all other responses). Our results do not change when we use a 4-point version or in models that account for the potential endogeneity of this variable.

15. The range and coding for these variables are as follows: female (0–1; 1 = female), age (0–97; 97 = 97 years old), age-squared (324–9,409; 9,409= age 97 squared), education (1–5; 5 = schooling after college), black (1–0; 1 = black), income (1–7; 7 = $100,000 or more), married (0–1; 1 = married), Republican (0–1; 1 = Republican), Democrat (0–1; 1 = Democrat), discussion (0–1; 1 = discusses Social Security), strength of Social Security views (0–3; 3 = very strong), Social Security top priority (0–1; 1 = Social Security should be top priority for the president and Congress). See the appendix for question wording.

The nature of our data posed one final challenge to model estimation. There was a significant amount of clustering because we pooled four cross-sectional surveys. Individual differences in attention to the debate aside, respondents in any given administration of the survey were nested within similar media environments. As such, we rely on White's (1980; Huber 1967) procedure for robust standard errors and the clustering feature in Stata 8.2 SE (see Carsey 2000 for a similar approach; Jerit, Barabas, and Bolsen 2006 employ an alternative technique).

Empirical Results

We report the results of our analysis in table 1. Our dependent variable is a 4-point measure where "1" represents "run out of money completely" and "4" represents "have enough money to pay full benefits." The coefficients indicate whether a variable has a significant effect on responses to the "If No Changes" question.

Both environmental variables (misleading rhetoric and media salience) have a significant effect. Thus, in addition to the individual-level variables that previous studies have shown to be related to political knowledge (e.g., education and income), the quality of political rhetoric and the amount of attention devoted to an issue also matter. Several of our cognitive and attitudinal measures affect political knowledge: following the debate, one's level of financial expertise, the strength of one's views about Social Security, and naming Social Security as a top priority for policymakers. Interestingly, a respondent's party identification bore no relationship to knowledge about Social Security, underlining our claim that partisan actors on both sides of the aisle were making predictions about the looming bankruptcy of the program.[16]

As is often the case with the ordered probit model, interpreting the results involves more than a simple reading of the sign and significance of a coefficient (Greene 2000, pp. 875–79). In our case, we were interested in the extent to which a variable simultaneously reduced the probability of selecting the first response option ("bankrupt") and increased the probability of selecting

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The financial expertise variable is a 5-point additive index with one point for correctly responding to each of the following: (1) stating the minimum percentage financial experts say a person should set aside each year for retirement; (2) stating how much money financial experts say individuals will need after they are retired to maintain their standard of living; (3) knowing how much a person like the respondent will get in monthly benefits from Social Security; (4) requesting a letter from Social Security stating contributions to date; and (5) calculating the amount of money needed to maintain the respondent's present standard of living in retirement. Financial expertise is distinct from knowledge about Social Security. The correlation between financial expertise and the dependent variable is modest ($r = -.05$; $p < .05$).

16. Explicit interaction terms between misleading statements and education or financial expertise were insignificant ($p > .05$). Including these or other interactions did not improve model fit as measured by the Bayesian Information Criterion (Raftery 1996), so we do not report those results.

Table 1.   Ordered Probit Analysis of Social Security Knowledge

Variable	Coefficient	SE
Misleading rhetoric	−0.22	(0.10)**
Follows Social Security	0.18	(0.01)**
Misleading × Follows	−0.35	(0.11)**
Media salience	−0.12	(0.02)**
Education	0.03	(0.02)**
Income	−0.02	(0.01)**
Female	−0.07	(0.04)*
Married	−0.07	(0.03)**
Age	−0.00	(0.00)
Age-squared	0.00	(0.00)**
Black	−0.02	(0.07)
Republican	−0.06	(0.04)
Democrat	0.05	(0.05)
Discusses Social Security	−0.08	(0.06)
Financial expertise	0.05	(0.02)**
Strength of Social Security views	−0.23	(0.04)**
Social Security top priority	−0.07	(0.04)*
Ancillary Parameters		
Cut point 1	−0.60	(0.09)**
Cut point 2	0.45	(0.08)**
Cut point 3	1.03	(0.07)**
Log-likelihood	−5445.8	
N	4,403	

NOTE: Robust standard errors in parentheses.
*$p < .10$.
**$p < .05$ (two-tailed).

the third ("three-quarters"). Thus, in the remainder of this section, we focus on predicted probabilities rather than the coefficients.
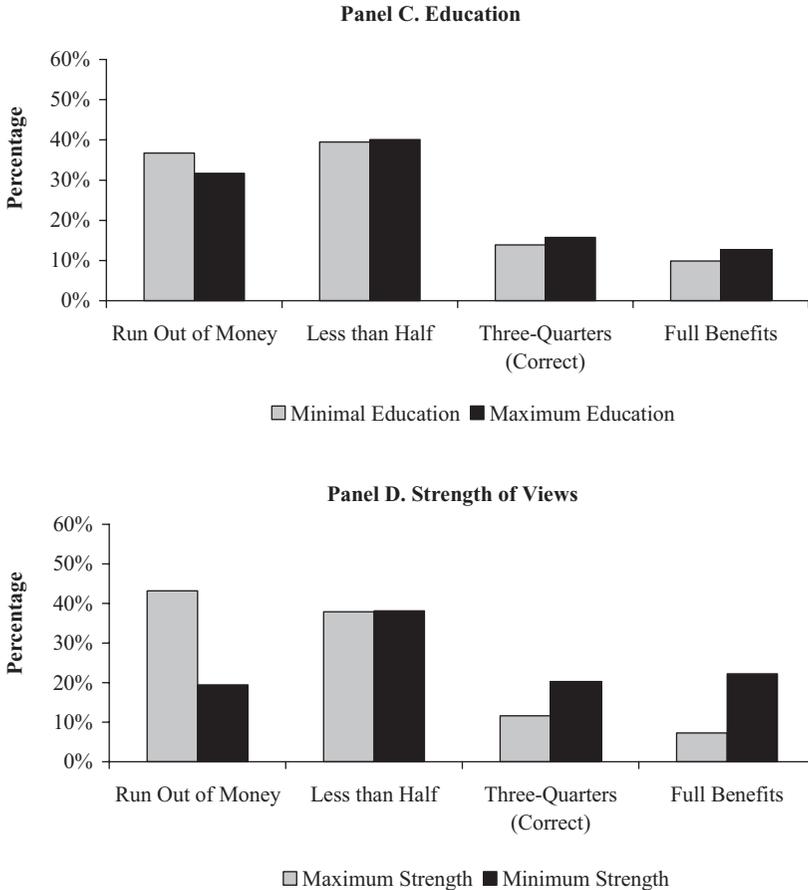
   Figure 1 shows the predicted probability that an otherwise typical respondent will select each of the response options under a variety of circumstances. Panel A illustrates these probabilities for the average respondent under the "best" (i.e., minimally misleading) and "worst" (i.e., maximally misleading) rhetorical environments.[17]

17. With the exception of the environmental variables, all other measures were held at their mean or mode. In order to explore the effect of the "best" and "worst" rhetorical environments, we evaluated misleading rhetoric at its theoretical minimum (0 percent) and maximum (100 percent). Naturally, the percentage point differences are less dramatic when we use the sample minimum and maximum. The more important point from our perspective is that we observe any effect at all for misleading rhetoric. As table 1 makes clear, this variable has a significant effect on knowledge, even after we control for a host of individual-level factors.

Panel A. Typical Respondent

Panel B. Typical Respondent Who Follows the Issue
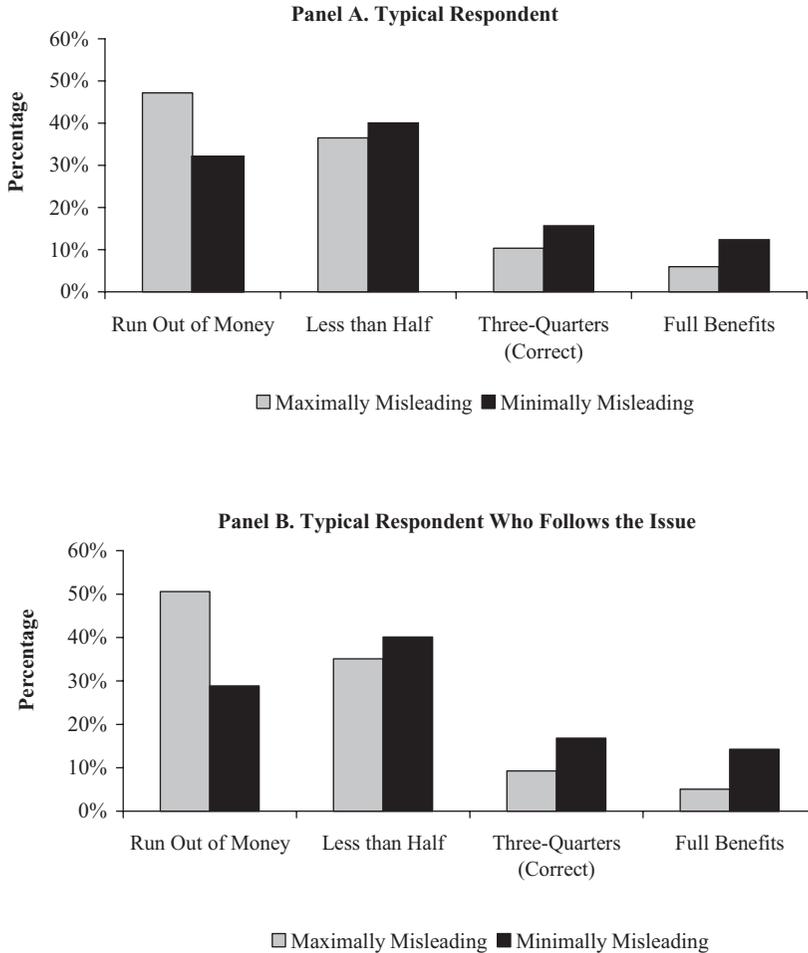
Figure 1. Predicted responses to question of "What happens to Social Security if no changes are made?"

When the typical respondent is exposed to an environment composed entirely of misleading rhetoric (with words such as "bankrupt," "run short of cash," "day of reckoning," and "overwhelmed"), he or she has a 47 percent chance of incorrectly stating that Social Security will run out of money completely. The likelihood of providing the correct response is only 10 percent. When this same person is exposed to an environment composed entirely of benign rhetoric (e.g., "reform," "protect," "preserve," and "reinforce"), the likelihood of giving the incorrect response declines (to 32 percent), while the

Panel C. Education

Minimal Education ■ Maximum Education

Panel D. Strength of Views

Maximum Strength ■ Minimum Strength

Figure 1. *(Continued)*

chances of providing the correct answer increase (to 16 percent). These are, however, best and worst case scenarios. Most environments contain a mix of misleading and nonmisleading words, suggesting that the typical effect is somewhere between the two. For example, a two standard deviation change in misleading rhetoric has about a 4-point effect on whether people say the program will have no money.

Consistent with our expectations, panel B of figure 1 reveals that the impact of misleading rhetoric is heightened by one's attention to the debate. An otherwise typical respondent who follows the debate when the rhetoric is misleading has a 51 percent chance of stating that Social Security will run out of money and only a 9 percent chance of giving an accurate response. The probability of responding "three-quarters" nearly doubles (to 17 percent) when

they are exposed to an environment without misleading rhetoric. By itself, however, following the debate is associated with higher levels of knowledge (results not shown graphically). Going from the minimum to the maximum on the "follows" variable while holding the value of all other variables at their mean or mode translates into a 5% drop in the likelihood of answering "run out of money" and a 2% increase in the chances of responding "three-quarters."

In addition to the effect of the environment, a number of individual-level variables are related to political knowledge. Panel C of figure 1 shows that, holding all other variables at their mean or mode, increasing education to its maximum level translates into a 5-point drop in the likelihood of saying Social Security will run out of money and a 2-point increase in the chances of giving the correct response. Although not shown in figure 1, financial expertise has an effect that is almost double that of education (9-point and 4-point changes, respectively). One of the most interesting findings at the individual level is the impact of our "strength" variable, shown in panel D. Holding all other variables at their mean or mode, an individual who has strong views about Social Security is more likely to say that the program is running out of money compared with someone who does not have strong views (a 24-point increase). This same person is also less likely to provide the correct answer (a 9-point decrease). This finding is consistent with the work of Kuklinski et al. (2000), who found that strong partisans were more likely to be misinformed about welfare than weak partisans and that strong partisans also had a tendency to reject correct factual information.

We have focused exclusively on misleading rhetoric, though other types of rhetoric also might be influencing knowledge. For example, our measure of misleading rhetoric excludes historical information about the Social Security program and other facts that were not directly related to the viability of the program (e.g., the administration of Social Security). We also excluded statements that mentioned Social Security in connection with any number of general principles (e.g., "The Social Security Commissioner emphasized Social Security's successes as a universal social insurance program that protects . . . workers who become disabled and the families of workers who die"). Finally, we excluded statements about the political process (e.g., "The new Congress convened with promises to cooperate on big issues such as Social Security"). It is possible, however, that these statements provide citizens with a critical body of contextual information that they can draw on when answering questions about the program. When we include a measure representing these alternative messages, this variable is positively associated with knowledge (coefficient = .394; $p < .001$). However, our conclusions regarding the effect of misleading information remain intact.

We also included separate measures for the proportion of policy statements (descriptive or persuasive claims about one of the many reform options being considered) and factual statements about Social Security (its proportion of the
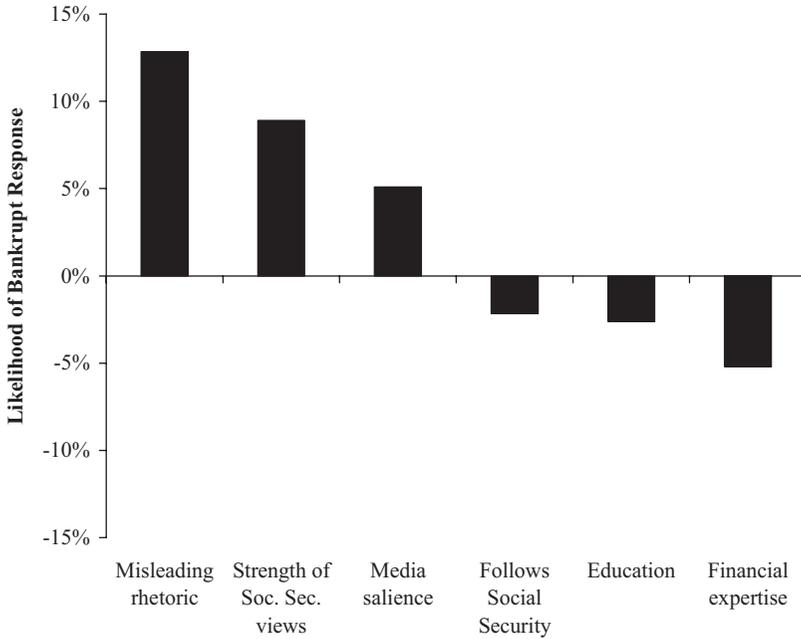
Figure 2. The effects of environmental- and individual-level characteristics on perceptions of Social Security bankruptcy.

federal budget, the retirement age, life expectancy figures, and so on). Each was only marginally related to knowledge ($p = .11$ for both) once we controlled for the impact of misleading rhetoric, which itself changed little. Lastly, we examined whether the source of Social Security messages has an effect on knowledge. We calculated the proportion of statements made by partisan elected officials in each of the four periods. Again, once we control for the impact of misleading rhetoric, this variable is only marginally related to knowledge (coefficient = $-.064$; $p = .11$). In these and other auxiliary analyses, our original pattern of results proved remarkably robust.

So far, our findings indicate that misleading rhetoric is associated with inaccurate perceptions about the future of Social Security—an effect that is strengthened by following the debate. Is there anything that counteracts the influence of the information environment? To answer that question, we turn to figure 2.

The bars in this figure represent the difference in the likelihood of reporting a bankrupt response as an otherwise typical respondent goes from the mean or modal value of a particular variable to the sample maximum.[18] The good news

18. Once again, we use the theoretical maximum for misleading rhetoric and media salience.
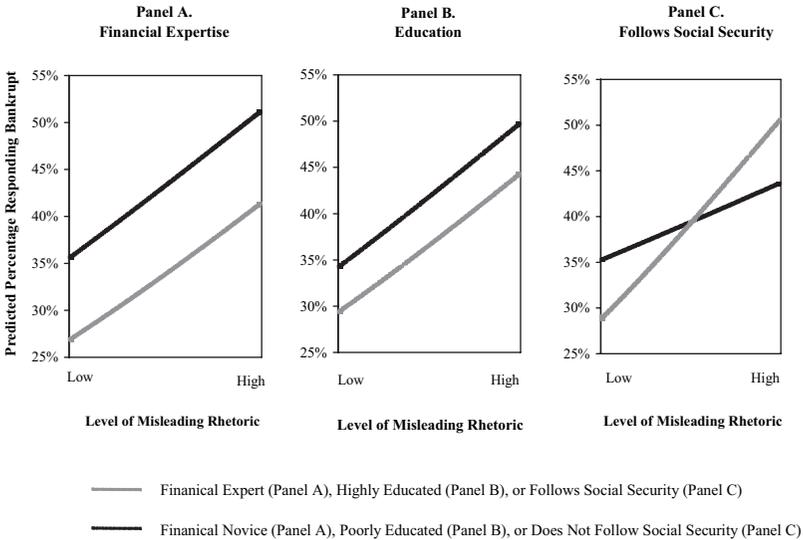
is that individual-level characteristics such as education or financial expertise make an individual less likely to provide a bankrupt response. However, the effects of these variables are smaller than those of misleading rhetoric and media salience. In a hypothetical rhetorical environment of entirely misleading information—one that we did not observe but the model can help us understand—the influence of individual-level characteristics such as education or financial expertise pale in comparison to the effects of the information environment.[19] Moreover, as our final set of figures show, a sizable number of respondents at the highest levels of education and financial expertise still get the "If No Changes" question wrong in an environment with high levels of misleading rhetoric.

Focusing first on panels A and B of Figure 3, the most educated and the most financially sophisticated (represented by the light gray lines) are less likely to say Social Security is going bankrupt than their less educated and less sophisticated counterparts (represented by the dark lines) across all possible environments. When the level of misleading rhetoric is at its highest, however, over 40 percent of even the most educated and financially sophisticated provide the wrong answer to the "If No Changes" question. Panel C provides a graphical representation of the interaction between following the debate and misleading rhetoric. Ordinarily, we might commend someone for closely following a policy debate. But as we expected, people who did so in an environment with misleading rhetoric were actually less informed about Social Security. In a low-quality information environment, citizens might be better off tuning out.

One may object to our reading of the results on the grounds that other news outlets may not use the same vocabulary ("bankrupt," "shortfall," etc.) as the AP. To alleviate these concerns, we searched the text of evening news broadcasts on CBS, NBC, ABC, and CNN during each of our four study periods. We found that well over half of the words we characterized as misleading (62 percent) were being used in those broadcasts as well (also see Jerit 2006).

Moreover, the sort of rhetoric that would have led citizens away from the bankrupt response and toward the correct answer was remarkably rare— even in the AP. Fewer than 1 percent of all coded statements in the AP referenced the "three-quarters" figure or noted that Social Security would be able to pay partial benefits. We refrain from making a sweeping indictment of the Social Security debate because, as our own data show, about half of the words used to describe the problem were not characterized as misleading by our experiment. Nevertheless, it is telling that survey respondents had only mixed reviews of the quality of the debate. Two of the four PSRA surveys included a question that asked whether media coverage of the Social Security

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19. As we noted earlier, these surveys do not include the typical battery of knowledge items often used to create a measure of political awareness. Our conclusions regarding misleading rhetoric do not change when we include a measure of domain-specific knowledge concerning eligibility for Social Security benefits.

Panel A.
Financial Expertise

Panel B.
Education

Panel C.
Follows Social Security

Finanical Expert (Panel A), Highly Educated (Panel B), or Follows Social Security (Panel C)

Finanical Novice (Panel A), Poorly Educated (Panel B), or Does Not Follow Social Security (Panel C)

Figure 3. The effects of individual-level characteristics on bankrupt answers across levels of misleading rhetoric.

debate was "mostly informative" or "mostly confusing." Across party lines, the overwhelming majority of respondents (62 to 65 percent) described coverage of the debate as "mostly confusing." Only a quarter described it as "mostly informative." We cannot say how citizens would have evaluated the debate if there had been greater coverage of the trustees' report (and the three-quarters figure in particular); however, our analysis suggests that the assessment of Social Security's financial situation would have been less dire.

Conclusion

It is well known that individual-level factors, such as education or income, are related to political knowledge. This study is among the first to directly link political knowledge with the information environment of a policy debate. Our findings reveal that misleading rhetoric during the Social Security debate of 1998–99 contributed to the misperception by about a third of the public that the program is going to run out of money completely. Thus, even after controlling for a host of personal factors and behaviors, moderate levels of misleading rhetoric can degrade political knowledge. Inaccurate perceptions about Social Security's future may in turn cause citizens to favor far-reaching policy reforms (Barabas 2005). In these situations,

responsiveness to public opinion hardly can be described as normatively satisfying.

Because we examined the debate over a single issue in just one media outlet during a relatively short period of time, we remain cautious about the generalizability of our results. However, there are some similarities between the period we studied and the Social Security reform debate during the second Bush administration, particularly with respect to elite rhetoric. For example, in his 2005 State of the Union address, President Bush said, "The system . . . is headed toward *bankruptcy*." The president also said, "By the year 2042, the entire system would be *exhausted* and *bankrupt*." Earlier on that same day, Stephen Goss, the chief actuary of the Social Security Administration stated in testimony before the Senate Finance Committee that "if no changes are made, it's projected that the combined trust fund assets of the Social Security program will become *exhausted* in the year 2042" (emphasis added).

Had the Social Security expert stopped there, he might have left members of Congress with the wrong impression. Importantly, however, Goss put his statement in context by continuing with the following statement: "What this means is that we would no longer be able to pay fully benefits scheduled in current law on a timely basis. Instead, we would be able to pay 73 percent of scheduled benefits." A search of news stories during the first half of 2005 turned up more instances of the three-quarters figure than we observed during the period we studied in the late 1990s. Thus, the more recent Social Security reform debate might be qualitatively better, at least on this dimension.

When it comes to the quality of the information environment, we surmise that some issues, especially those relating to foreign policy, will be especially plagued by misleading rhetoric. It is in these instances that we see fewer competing viewpoints and sometimes even censorship or outright distortion (Bennett and Paletz 1994; Herman and Chomsky 1988). To the extent that the political stakes of some issues are greater than others, the incentives for casting policy problems in a misleading light also may differ across domestic issues.

What do our findings suggest about the health of the democracy in the United States? This study points to the information environment and the effects of misleading statements in particular as one reason why political knowledge might be so low. At the same time, the results suggest a number of ways in which the quality of the news can be improved. Media outlets should encourage responsible debate over important issues by defusing misleading or inaccurate claims. During our examination of the Social Security debate in the late 1990s, journalists helped promote the myth that the system would go bankrupt by failing to discuss the critical 75 percent figure more often. It is our view that important, but reasonable, changes in the way the media report public policy debates can improve the quality of the information environment.

Appendix

DATA COLLECTION

Using Lexis-Nexis, we conducted a broad search of the full-text transcripts of Associated Press stories, using only the term "Social Security" and discarding stories that were not relevant.

In order to eliminate duplicate versions of the same story, we limited our attention to "P.M. cycle" stories and excluded AP Worldstream, AP Online, and AP State and Local Wire news reports.

MISLEADING STATEMENTS EXPERIMENT

The purpose of the experiment was to determine which types of rhetoric were associated with impressions that Social Security is going bankrupt (see Jerit 2006 for more details). We used the experimental results to code statements in the AP as either misleading or not misleading.

We crafted our experimental treatments so that they were as close to the real-world rhetoric surrounding Social Security as possible. After reading each statement, subjects answered the "If No Changes" question. We removed source cues (e.g., "President Clinton") and contextual information (e.g., "The proposal has been languishing in a Republican-controlled committee") from the statements when we thought it would contaminate the treatment. Here are some examples of experiment treatments, along with the original statements from the AP:

Original	*Statement Used in Experiment*
"Social Security will begin to go bankrupt in about 15 years—if we don't find solutions now."	"Social Security will begin to go bankrupt in about 15 years—if we don't find solutions now."
"Federal Reserve chairman Alan Greenspan said today what President Clinton and most other politicians have avoided saying: Any permanent solution to keep Social Security from going broke will almost certainly require increasing taxes or cutting benefits."	"Any permanent solution to keep Social Security from going broke will almost certainly require increasing taxes or cutting benefits."

In order to test all 41 words and phrases, there were 10 versions of the experiment, each with seven statements. The accurate description, which we obtained from the Social Security board of trustees report (Rubin et al. 1998), was repeated in every version. For reasons that will become apparent later, two other expressions ("save" and "strengthen") also were repeated. The other words were randomly assigned to one of the 10 versions of the survey. Subjects came from five undergraduate political science classes at a large university. Variations in sample size are due to differences in class size and item nonresponse.

Table A1 lists the 41 target words and phrases that were used in the experiment, along with the mean, standard deviation, and modal value on the "If No Changes" question.

The line of table A1 in italic represents an accurate description of the problem. Even when subjects were told explicitly that the trust fund would be able to pay three-quarters of the benefits, the mean value on the "If No Changes" question was 2.5, located between the "half" and "three-quarters" response options. In each version of the experiment, however, the modal rating of the accurate description was 3.

The fifth column of table A1 shows the results of a *t*-test in which we used the sample mean on the accurate statement as the comparison point. Words and phrases above the double line elicited a reaction from subjects that was significantly different—in the direction of a "run out of money" response—from that of the accurate description (*p*-values ranged from .00 to .08). We subsequently coded all instances of those words and phrases in AP wire reports as misleading. The remaining words and phrases below the double line in table A1 received a value of "0" on the misleading variable.[20]

Although we randomized the experiment, one might wonder whether the clustering of certain target words/phrases affected our results. Taking advantage of the fact that three items ("save," "strengthen," and the accurate description) were repeated across several versions of the experiment, we determined if the mean rating for each of these words/phrases exhibited significant differences across versions. If they did, that would suggest that the rating had been affected by other target words and phrases. Fortunately, we found no significant differences in the mean values of the ratings across different versions of the experiment (*p* > .05, chi-square). The order of presentation (e.g., whether a target word was placed first, last, or in the middle) also was inconsequential. Therefore, we feel confident in concluding that the particular grouping of target words/phrases did not contaminate the experiment.

Table A1. Experimenal Results: The Relationship Between Political Rhetoric and Perceptions of Social Security Trust Fund Viability

Word/Phrase	Mean	S.D.	Modal Value	T-test vs. accurate *p*-value	*N*
Run out of money[a]	1.3	0.6	1	0.00	26
Bankrupt	1.5	0.8	1	0.00	26
Continue to exist	1.6	0.8	1	0.00	26
Exhausted	1.6	0.9	1	0.00	27
Overwhelmed	1.6	0.7	1	0.00	28
Overburdened	1.6	0.9	1	0.00	28
Brick wall	1.6	1.0	1	0.00	28
Financial problem	1.6	0.6	2	0.00	28
Short of cash	1.7	0.9	1	0.00	26
Shortfall	1.8	0.8	2	0.00	27

20. Two phrases ("Make sure it is there" and "Fiscally sound") had a mean rating that was significantly different (*p* < .05) from the accurate statement in the other direction. We combined these with nonmisleading words because neither appeared in our data very often (once for "Make sure it is there" and three times for "Fiscally sound").

Table A1.   *(Continued)*

Word/Phrase	Mean	S.D.	Modal Value	T-test vs. accurate *p*-value	*N*
Bolster	1.8	1.1	1	0.00	27
Poop-out	1.8	0.9	1	0.00	26
Able to pay benefits	1.9	0.8	1	0.00	25
Fix	1.9	0.9	1	0.00	27
Fiscal problem	1.9	0.9	2	0.00	27
Solvency	1.9	0.8	2	0.00	28
Prop-up	2.0	1.0	1	0.01	26
Stabilize	2.0	0.8	2	0.00	26
Day of reckoning	2.0	1.1	1	0.04	25
Insecure	2.2	0.9	2	0.08	26
Strengthen	2.2	0.9	2	0.00	210
Reform	2.3	1.0	2	0.24	27
Underfunded	2.3	0.9	2	0.23	28
Go broke	2.3	1.2	1	0.43	28
Rescue	2.3	1.0	2	0.46	26
Reinforce	2.4	1.2	2	0.56	25
Safeguard	2.4	1.1	2	0.59	26
Shore-up	2.4	1.2	†	0.81	25
Buttress	2.4	1.1	2	0.80	27
Accurate description	*2.5*	*0.8*	*3*	—	*268*
Overhaul	2.5	0.9	3	1.00	28
Revamp	2.5	0.9	†	1.00	26
Crisis	2.5	1.2	2	0.88	28
Protect	2.5	1.1	2	0.86	26
Troubled system	2.6	0.9	2	0.70	28
Preserve	2.6	1.0	2	0.70	26
Save	2.6	1.1	†	0.09	238
Reserve fund	2.7	1.1	4	0.47	27
Sound footing	2.8	1.2	4	0.16	28
Fiscally sound	3.0	1.1	4	0.03	25
Make sure it is there	3.0	1.1	4	0.02	28

   NOTE: Respondents read statements with various words or phrases describing the condition of the Social Security system and then answered the question, "If no changes are made to the Social Security program over the next few decades, what do you think will happen? Will Social Security . . . run out of money completely (coded "1"), have only enough money to pay everyone less than half the benefits they would get today (coded "2"), have enough to pay everyone about three-quarters of the benefits they would get today (coded "3"), or have enough to pay full benefits" (coded "4"). T-tests were conducted with the assumption of unequal variances.
† = multiple modal values.
ᵃ Includes "run short of money."

MEDIA SALIENCE

Our media salience variable represents the number of articles about Social Security as a proportion of all stories about domestic policy, major world events, scandals, natural disasters, and other topics. We derived the categories from Bryan Jones, John Wilkerson, and Frank Baumgartner's codebook for the Policy Agendas Project (http://www.policyagendas.org). Table A2 displays the relative importance of these topics in the AP during our four content analysis periods.

In three of the four periods Social Security was among the top five domestic issues on the public agenda, and in the third period Social Security garnered more media coverage than any other domestic policy issue. The international crises referred to in table A2 were a flare-up with Iraq over weapons inspections (period 1) and Kosovo (period 4). The Monica Lewinsky scandal was covered heavily during the third period of our study. The Columbine school shooting is coded under "Other Domestic Crisis" in period 4. To examine differences in prominence (i.e., signals from journalists regarding the relative importance of a story), we calculated weighted versions of the media salience measure that incorporate story placement within sections of the AP and the number of words used in articles during the coding period. In both cases the substantive results did not change. Finally, auxiliary analyses show that AP stories do in fact appear in newspapers around the country. An examination of the Midwestern newspaper database in Lexis-Nexis revealed that stories from the AP were reprinted in the front sections of regional publications like the *St. Louis Post-Dispatch* and the *Dubuque Telegraph-Herald*.

Table A2. Media Coverage of Social Security and Other Issues in the *AP*

	PSRA1	PSRA2	PSRA3	PSRA4
Social Security	11% (45)	10% (37)	21% (116)	12% (50)
Macroeconomics	17% (67)	21% (78)	12% (66)	15% (59)
Civil Rights	2% (6)	2% (8)	0% (2)	0% (1)
Health	10% (41)	13% (48)	9% (49)	6% (23)
Agriculture	1% (5)	4% (15)	3% (16)	1% (6)
Labor & Immigration	0% (1)	1% (2)	1% (3)	1% (4)
Education	4% (14)	5% (20)	3% (15)	5% (21)
Environment	4% (15)	6% (23)	4% (22)	6% (23)
Energy	1% (5)	4% (13)	2% (10)	5% (19)
Transportation	4% (17)	2% (8)	4% (22)	1% (6)
Law & Crime	15% (59)	15% (54)	17% (96)	12% (49)
Social Welfare	1% (4)	1% (3)	1% (7)	0% (0)
Housing	2% (7)	3% (12)	3% (14)	1% (3)
Banking & Finance	11% (45)	16% (58)	11% (60)	15% (61)
Defense	7% (26)	5% (19)	3% (18)	7% (30)
Space & Technology	1% (3)	1% (3)	1% (4)	1% (4)
International Crises	21% (82)	0% (0)	0% (0)	16% (62)
Government Scandals	0% (0)	0% (0)	37% (148)	0% (0)
Natural Disasters/Other Domestic Crises	0% (0)	0% (0)	0% (0)	9% (34)
Total Number of Stories	397	364	552	405

NOTE: Cell entries represent the percentage of coverage relative to other issues. Story counts are listed in parentheses.

QUESTION WORDING

Education: "What is the last grade or class you completed in school . . . Less than high school graduate (grades 11 or less); high school graduate, grade 12, or GED certificate; technical, trade or business after high school; some college or university work, but no four-year degree; college or university graduate (B.A., B.S., or other four-year degree received); postgraduate or professional schooling after college (including work toward an M.A., M.S., Ph.D., J.D., D.D.S., or M.D. degree)."

Income: "Last year, that is in 1997 [or 1998], what was your total family income from all sources before taxes? Just stop me when I get to the right category . . . less than $10,000; $10,000 to under $20,000; $20,000 to under $30,000; $30,000 to under $40,000; $40,000 to under $60,000; $60,000 to under $100,000; or $100,000 or more."

Married: "Are you now married, living as married, separated, divorced, widowed, or have you never been married?"

Age: "What is your age?"

Black: "What is your race? Are you white, black, Asian, or some other race?"

Partisanship (*Republican* and *Democrat*): "In politics today, do you consider yourself a Republican, Democrat, or Independent? . . . As of today, do you lean more to the Republican Party or to the Democratic Party?"

Discusses Social Security: "Thinking about the last month or so, which of these national issues, if any, have you discussed with your friends, neighbors, family members, or coworkers? Have you discussed or not . . . Social Security?"

Strength of Social Security views: "How strong are your opinions about changing Social Security—very strong, somewhat strong, not too strong, or not strong at all?"

Social Security top priority: "We're interested in your views about what problems our country's political leaders should be working hardest to solve. In your opinion, which one of the following areas should get the highest priority from the president and Congress . . . Social Security?"

Dependent Variable: "If no changes are made to the Social Security program over the next twenty years, what do you think will happen? Will Social Security . . . run out of money completely, have only enough money to pay everyone less than half the benefits they would get today, have enough to pay everyone about three-quarters of the benefits they would get today, or have enough to pay full benefits to everyone?"[21] Table A3 presents the distribution of the dependent variable across all four administrations of the survey.

See footnote 14 for the *Follows Social Security* question wording. Other variables from the analysis in table 1 were not asked (e.g., *Gender* was recorded by the survey interviewer) or were constructed based on the procedures detailed earlier in the appendix (e.g., *Misleading rhetoric* and *Media salience*).

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21. In the last three surveys, there was a question wording experiment. The answer choices to the "If No Changes" question were identical with the exception of the first response option ("run out of money completely" versus "have no money at all to pay benefits"). Chi-square tests show no significant differences in the responses to either form (p > .05) so we combine both versions in the analysis.

Table A3. Knowledge of What Happens If No Changes Are Made to Social Security

If No Changes, What Happens?	% in Survey			
	March 1998	July 1998	February 1999	May 1999
Run out of money	34	35	35	33
Pay less than half benefits	40	35	36	40
Pay three-quarters benefits	15	15	15	14
Pay full benefits	11	15	14	13
N	1,202	1,200	1,000	1,001

NOTE: All data have been weighted to reflect the U.S. population and "don't know" responses have been randomly reassigned (see Mondak 2001; Mondak and Davis 2001). See Cook and Jacobs (2002, p. 88) or Cook, Barabas, and Page (2002, p. 157) for unweighted marginal frequencies.

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