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Political Sophistication and Economic Voting in the American Electorate: A Theory of Heterogeneous Attribution

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This article presents a theory of heterogeneous attribution, in which an individual's ability to make causal associations depends on his level of political sophistication. Specifically, we maintain that political sophistication dramatically influences the relative importance of personal and national economic judgments in shaping presidential candidate preference. Pocketbook voting, we argue, should be common only among relatively *sophisticated* voters, who are able to make the associative linkage between changes in their personal financial status and governmental policy. Additionally, we hypothesize that sociotropic evaluations should be most influential for *less* sophisticated voters. Low sophisticates, we argue, will tend to assume that the national economy is entirely in the President's hands (and vote accordingly), whereas more sophisticated voters understand that the economy is affected by many actors and conditions that are largely beyond the President's control. Testing our theory using data from 1992, 1996, and 1998, we find strong support for our hypotheses.

There is little doubt that changing economic conditions profoundly influence voters' electoral decisions. Since the work of Kramer (1971), a large body of research has accumulated indicating that electoral results at both the state and national levels are driven at least partly by economic fluctuations (Tufte 1975; Hibbs, Rivers, and Vasilatos 1982; Chappell and Keech 1988). There is, however, less consensus on how individual voters, many of whom "have only the fuzziest of notions about many aspects of politics and government," (Markus 1988, 137), evaluate the economic information they receive and connect it to the political world. Do voters assess political candidates based on their personal economic well being (the "pocketbook" voting hypothesis), or on the perceived health of the national economy (the "sociotropic" voting hypothesis)? The answer depends centrally on how voters attribute causal responsibility for changes in both personal and national economic conditions, a process that, we argue, is strongly influenced by the voter's level of political sophistication.

In this research, we explicitly incorporate political sophistication into the model of economic voting. For years, researchers have debated the degree of sophistication that voters bring to bear when making politically relevant evaluations (Suzuki 1991; Mackuen, Erikson, and Stimson 1992). At the macro-level, the debate has hinged largely on the difference between voter evaluations based on retrospective assessments and those guided by more "sophisticated" prospective economic forecasts. This dichotomy is typified by Mackuen, Erikson, and Stimson's (1992) distinction between retrospective voters, or cognitive "peasants," and prospective voters, or cognitive "bankers." Micro-level theorists have also noted the importance of

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cognitive sophistication in shaping an individual's ability to make economic evaluations. According to Abramowitz, Lanoue, and Ramesh, the ability to attribute responsibility for pocketbook conditions to societal forces may be a function of education, since educated voters are "better able to perceive the influence of government policies and macroeconomic fluctuations on their own economic fortunes" (1988, 856–857). However, despite tantalizing allusions to its influence, political sophistication has generally been ignored as a source of heterogeneity in economic voting. Indeed, the most prominent work in the field (Kramer 1971; 1983; Kinder and Kiewiet 1979, 1981) treats voters as monolithic, asking whether the electorate as a whole votes according to pocketbook or sociotropic considerations. Our study ameliorates this restrictive assumption, proposing that heterogeneity in economic voting is a function of alternative decision criteria used by individuals at various levels of political sophistication.

Specifically, we articulate a theory of heterogeneous attribution, in which an individual's ability to make causal associations is conditioned by his level of cognitive sophistication. We argue that the breadth and depth of an individual's political knowledge base largely determines his ability to make proximal or distal attributions for socio-political phenomena. Thus, a person's ability to give credit or blame to individual versus systemic factors is a function of his capacity to make associative linkages between political information in different spheres. We maintain that political sophistication dramatically influences the relative importance of personal and national economic judgments in shaping individual candidate preference. First, we posit that pocketbook voting should be common only among relatively sophisticated voters, who are able to make the associative linkage between changes in their personal financial status and governmental policy, specifically the actions of the President, the Congress, and other national decision makers. Secondly, we posit that sociotropic voting should be relatively more powerful for low sophisticates than for higher sophisticates. Our claim here is that low sophisticates will tend to assume simplistically that the national economy is exclusively the President's responsibility, whereas high sophisticates understand that the economy is also affected by a number of other actors and economic forces beyond the President's control. Among sophisticated voters, the President is a target of both pocketbook and sociotropic evaluations, but not the *sole* target in either case. For less sophisticated voters, conversely, the President is essentially absent as a target in the domain of pocketbook evaluations, but dominant when it comes to sociotropic evaluations. Thus, low sophisticates should show no evidence of pocketbook voting, but very strong sociotropic voting. More sophisti-

cated citizens, by contrast, should demonstrate a balance of both.

Significantly, these hypotheses run counter to the received wisdom on political sophistication and economic voting. At least since *The American Voter*, "primitive self-interest" in the form of pocketbook voting has been regarded as the least intellectually demanding type of electoral decision making, and thus the one most readily available to less sophisticated voters (Campbell et al. 1960). According to Fiorina, using a pocketbook heuristic significantly eases the cognitive demands of rational voting. "In order to ascertain whether the incumbents have performed poorly or well," he argues, "citizens need only calculate the changes in their own welfare" (1981, 5). Similarly, Kinder and Kiewiet assert that "[p]ocketbook politics requires little in the way of political expertise. Knowing who the incumbents are, where the polling place is located, and a few other details are all that is needed" (1981, 130). More recent studies also reinforce the notion that individuals at lower levels of sophistication tend to "vote their pocketbook," while more sophisticated people are willing and able to consider sociotropic factors.¹ Mutz (1992) argues that a "sociotropic priming effect" exists in media coverage of economic events, prompting those with high levels of media exposure to emphasize their evaluations of the national economy over their own economic circumstances. Likewise, Weatherford holds that "personal conditions... are consistently emphasized more by low than by high media users" (1983, 167). Finally, Delli Carpini and Keeter argue explicitly that pocketbook voting is more common among less knowledgeable individuals.² "For many of the

¹In much of the literature, sophistication, awareness, and education are used almost interchangeably. While they are distinct concepts, they are closely related, and tend to serve reasonably well as proxies for one another (Sniderman, Brody, and Tetlock 1991; Zaller 1992). Thus, we regard previous work on media exposure (a strong correlate of sophistication and awareness) and economic voting as clearly relevant to our analysis.

²The Delli Carpini and Keeter (1996) claim, so clearly opposed to our own and made in the context of the 1988 presidential election, is surprising, particularly since our measures of sophistication as "knowledge in use" are consistent with their political knowledge measures. While Delli Carpini and Keeter do not provide full details on their vote choice model, they admit that it is significantly underspecified, excluding important variables such as party identification (1996, 259–261). Unfortunately, without knowing their exact model specification it is impossible to replicate their analyses. We have, however, done our own analysis of the 1988 election, employing a pooled model with the same independent variables that we use for 1992 and 1996, plus (sophistication × economic evaluation) interaction terms. This analysis confirms the patterns that we observe in the two more recent elections: the effect of pocketbook evaluations on presidential voting is conditioned by political sophistication (MLE = .073; S.E. = .026), though the

least informed citizens,” they assert, “voting . . . was based on simple retrospective evaluations that rewarded or punished the incumbent party depending on personal circumstances. . . . Among better-informed voters, personal economic circumstances did not make an independent contribution to the vote; rather, they tended to use national economic conditions . . . as one piece of a more complex decision-making process” (1996, 260). Clearly, the existing consensus on sophistication and economic voting is that pocketbook considerations should predominate for low sophisticates, while sociotropic factors should weigh heavily for the more sophisticated.

We contend that this view misses the mark. It stems largely, we believe, from a tendency to focus on economic voting as a problem of information acquisition, rather than one of attribution. We agree with those scholars quoted above that sociotropic voting imposes at least marginally higher information demands than pocketbook voting. However, one should not overestimate the level of knowledge needed for sociotropic voting. As Kinder and Kiewiet explain: “It is not necessary for sociotropic voters to undertake a sophisticated analysis of the economy . . . Rather, voters must only develop rough evaluations of national economic conditions, and then credit or blame the incumbent party accordingly” (1981, 131). Thus, while there is a nontrivial difference in the level of information required for sociotropic versus pocketbook voting, it is rather modest. Were it the only relevant cognitive factor, one would certainly expect less sophisticated people to be more likely to engage in pocketbook voting. However, when one views the sociotropic–pocketbook dichotomy as fundamentally a question of attribution, the prediction changes considerably. It is *much* easier to attribute responsibility for the national economy to the President than to plausibly connect his policies to successes or reverses in one’s own financial circumstances. Thus, the increased cognitive burden of a more distal and abstract attribution associated with pocketbook voting vastly outweighs the modest decline in informational requirements. As a result, we arrive at the seemingly counter-intuitive hypotheses to be tested here.

Economic Voting in the American Electorate

To even the most casual observer, it is obvious that economic conditions play a central role in American electoral politics. From Herbert Hoover’s promise of “a

magnitude of the effect is slightly attenuated (perhaps owing to the absence of an incumbent).

chicken in every pot” to the Clinton campaign’s 1992 mantra of “it’s the economy, stupid,” presidential candidates have long focused on economic health (either good or ill) in their bids for office. The implicit assumption in these campaigns is that economic considerations figure prominently in voters’ political decision making. This reality has been universally acknowledged among political scientists as well, but the precise nature of the relationship between the economy and vote choice has been the subject of more than three decades of debate and refinement.

Scholarly perspectives on economics and voting traditionally have fallen into two main camps: those arguing that people vote according to changes in their own personal economic circumstances (Campbell et al. 1960; Kramer 1971, 1983), and those holding that individuals look primarily to the overall state of the national economy and vote “sociotropically” (Kinder and Kiewiet 1979, 1981). Typically, sociotropic variables have emerged as the strongest cross-sectional predictors of individual candidate choice (but see Kramer 1983 and Markus 1988), perhaps because of the very diffuse attributions associated with pocketbook assessments (Lane 1962; Feldman 1982). Yet in the debate over whether the electorate as a whole places more weight on pocketbook or sociotropic evaluations in determining vote choice, there has been a tendency to gloss over significant and systematic *variation* among voters in the economic heuristics used to choose between presidential candidates. That some groups of individuals might engage in exclusively sociotropic voting, while others employ a pocketbook decision calculus instead of or in addition to the sociotropic one, is not generally acknowledged. Not all studies, however, have fallen victim to this oversimplification. Several have suggested significant heterogeneity in the nature of economic voting, along some interesting and important lines, including American core values (Feldman 1982), collectivism (Kinder and Mebane 1983), and media usage (Weatherford 1983).

Strangely lacking from these accounts, however, is any consideration of the role that political knowledge and sophistication might play. In fact, in comparing the pocketbook and sociotropic theories of economic voting, Weatherford goes so far as to say that “there is no obvious difference between the two approaches in levels of sophistication” (1983, 158–159). We would strongly disagree. An examination of differential levels of political knowledge and sophistication in the electorate provides a theoretically compelling and empirically powerful account of which individuals will be most likely to engage in pocketbook voting. Simply put, despite strong claims about the simplicity of the decision rule, we argue that

evidence of pocketbook voting should be confined to the more sophisticated and knowledgeable segments of the American electorate.

Political Sophistication and the Process of Attribution

The central psychic mechanism at work in economic voting is the cognitive process of causal attribution. As Iyengar asserts, "attributions of responsibility are critical ingredients of social knowledge" (1989, 879). Causal attributions have been shown to have powerful effects on an individual's attitude toward the self, emotional arousal, and interpersonal evaluations (Fiske and Taylor 1984; Hewstone 1989). Indeed, the capacity of causal attributions to frame interpersonal evaluations is fundamental to political opinionation, particularly assessments of political leaders (Iyengar 1989) and vote choice (Lau and Sears 1981; Feldman 1982).

Interpersonal attributions require individuals to be informed about a stimulus at hand and then correctly associate that stimulus with its rightful source. Both social and political psychologists examining the process of attribution have pointed to the interplay of information and contextual cues as a source of variation in the ability to construct attributions of responsibility. Experimental psychologists have shown that the amount and clarity of available relevant information strongly conditions the ability to make reliable attributions (Zanna, Klosson, and Darley 1976). However, information is frequently filtered through the perceptual screens of an individual's predispositions, resulting not only in a biased understanding of the information, but in a similarly biased attribution of causal responsibility. Weatherford (1983), for instance, argues that the likelihood of pocketbook voting varies systematically with the individual's consumption of media information and his tendency to vote on the basis of symbolic or contextual cues such as partisanship. Abramowitz, Lanoue, and Ramesh (1988) show that attributions of economic responsibility are similarly affected.

However, several questions about individuals' capacity to make attributions remain. Is the process of causal attribution the same for all voters? Should all voters be affected equally by the amount of information available to them? Do all voters use contextual cues in a similar way? In our view, the answer to all of these questions is "no." Building on Luskin (1987) and Sniderman (1993), our argument suggests that individuals with differing levels of political sophistication will vary in their ability

to make associative linkages between problems and their sources. Thus, the ability to attribute changes in both personal and national economic conditions to political leaders is fundamentally dependent on cognitive ability. Individuals at various levels of political sophistication cognitively engage the political world in different ways, using heterogeneous decision rules in processing political information and making political choices. Far from maximizing the consistency of belief system elements across the board, individuals with differing levels of political sophistication seek congruence selectively (Sniderman, Brody, and Tetlock 1991). Unlike Converse's (1964) model of the political belief system, the sophistication model suggests that it is the least sophisticated individuals, not the most, who attempt to maximize *proximal consistency* among belief elements, bringing closely related political information into congruence. Alternatively, highly sophisticated individuals seek *distal consistency* in their political belief systems. These political sophisticates recognize and evaluate the more abstract elements of the political world and seek congruence between newly obtained information and more distant components of their belief systems, such as their ideologies.

The contrasting decision rules employed by individuals at different levels of political sophistication have direct implications for the process of attribution and for our understanding of economic voting. When low sophisticates receive information about economic conditions, whether personal or social, they possess a limited capacity to integrate this information into their understanding of the political world. First, low sophisticates lack a significant number of political referents. Thus, their capacity to make associative linkages between economic conditions and other elements of their political belief systems is inherently limited when compared to their sophisticated counterparts. Secondly, low sophisticates are restricted in their ability to comprehend the political-economic linkage, making it more difficult for them to attribute changes in economic conditions to appropriate political actors. For low sophisticates, attribution of responsibility is largely restricted to *proximate* or *local* causes. Less sophisticated voters generally will identify the *most obvious* potential source as being responsible for a given outcome. Thus, low sophisticates will tend to attribute personal economic responsibility to the actor most closely associated with their pocketbook: themselves. For individuals at low levels of political sophistication, the linkage between their pocketbook finances and national economic policy is too remote, generally speaking, for politically meaningful causal attributions to be made. Therefore, we expect that, for low sophisticates, pocketbook economic assessments will

not be significantly related to candidate preference. This is not to suggest that the less sophisticated voter cannot accommodate any economic considerations in his decision calculus. Indeed, on this matter, our theory of heterogeneous attribution also provides guidance. It is not merely that low sophisticates can use the national economy in formulating their vote choice; for them, we argue, sociotropic evaluations should play a relatively *greater* role in presidential voting than they do for high sophisticates. This prediction is consistent with the idea that less sophisticated individuals will tend to attribute responsibility for outcomes to the single most obvious actor in the relevant sphere. For the national economy, this actor is the President. Thus, for low sophisticates, positive or negative judgments about national economic health should be particularly focused on the President, heightening the importance of sociotropic evaluations in their presidential candidate selection.

For more sophisticated voters, the cognitive patterns of attribution are much different. When encountering new economic information, either personal or national, they are much more likely to make *distal* associative linkages between the new data and their conceptions of political reality. High sophisticates possess an abundance of information, and they attempt to integrate broadly their newly acquired information with their reserve of political knowledge. High sophisticates are able to make distal linkages between cognitive elements and are more likely to make *global* as well as local attributions. For these individuals, the associative link between personal economic well being and national economic policy is indeed possible. High sophisticates are more likely to understand political-economic cycles, to appreciate partisan differences in economic policy, and to be aware of major economic decisions made by the President, Congress, and others. While clearly realizing that they bear great responsibility for their own economic welfare, more sophisticated individuals are better able than their less sophisticated counterparts to divide credit or blame for economic outcomes between a variety of actors at varying levels of proximity. High sophisticates should be more able to make some associative linkages between their own economic situation and national political actors (including the President), and thus should be more likely than low sophisticates to “vote their pocketbooks.”³

³That more sophisticated individuals can make the link between their own pocketbook and national economic policy is not exactly the same thing as saying they make a link between *the President's* policy and their pocketbook. Indeed, the same sophistication that leads them to divide credit or blame among multiple governmental actors in the context of sociotropic evaluations should have a similar effect when it comes to pocketbook assessments. However, for

Our theory of heterogeneous attribution also has implications for sociotropic voting among the politically sophisticated. Like their less knowledgeable counterparts, high sophisticates can easily link national economic conditions to the policies of the incumbent administration. Thus, we would expect some sociotropic voting to occur among more sophisticated citizens. Yet, high sophisticates may also understand the limits of governmental economic control in an expanding global marketplace. High sophisticates are also more likely to appreciate that the President is not the only actor who affects national economic policy. Because of this expanded number of referents, we believe that high sophisticates may actually place relatively *less* weight on national economic evaluations in determining their presidential candidate preference than do low sophisticates. They should be more likely to attribute at least some credit or blame to other political actors, such as members of Congress, the Federal Reserve, or even governors, for the economic conditions of society. As with pocketbook evaluations, greater sophistication makes individuals less likely to attribute *exclusive* responsibility to the single most obvious actor in the relevant sphere (in this case the President). While sociotropic presidential voting will occur among this sophisticated group, it should be relatively less powerful (owing to diffuse attributions) than among unsophisticated voters.

Data and Method

In our examination of political sophistication and economic voting in American presidential elections, we draw primarily on data from the 1992 and 1996 American National Election Studies. In addition to being the most recent presidential elections for which data are available, these two years have other features that make them well suited for our analysis. To begin with, an incumbent President is on the ballot in both years, providing a clear object for citizen assessments of credit or blame based on their retrospective evaluations of economic circumstances. Moreover, the two incumbents (George Bush in 1992 and Bill Clinton in 1996) are of

pocketbook voting to occur, sophisticated citizens need not ascribe exclusive (or even primary) responsibility for pocketbook outcomes to the president. As long as he is accorded some appreciable measure of credit or blame, pocketbook voting is likely. Based on this same logic, we expect a certain amount of sociotropic voting among the politically sophisticated, though not to the same degree as among the less sophisticated. While diffuse attributions of responsibility may attenuate pocketbook voting among the politically sophisticated, they certainly don't preclude it.

different parties, suggesting that patterns of results consistent across the two elections should be devoid of spurious partisan causes. Most importantly, in 1992 the incumbent President was defeated primarily because of poor citizen evaluations of the economy, while in 1996 the incumbent won a handy victory largely because of general economic prosperity. Thus, the two election years differ in at least two significant ways, providing for a generalizable test of our hypotheses.

In modeling the relationships outlined above, we face important choices about how best to operationalize our key concepts of interest: pocketbook and sociotropic economic evaluations, individual political sophistication, and candidate choice. For the economic evaluations, the answer is straightforward. Both the 1992 and 1996 studies contain the standard NES questions asking respondents whether their own family's economic circumstances have gotten "much worse, worse, about the same, better, or much better" over the past year and providing the same set of response categories for an analogous question about the national economy. We use responses to these queries in creating our variables for pocketbook and sociotropic economic evaluations. In weighing the relative importance of these two factors in citizens' candidate choices, we believe that it is important to employ measurement strategies for the two concepts that are as nearly identical as possible. Thus, these citizen self-reports of economic conditions are for our purposes preferable to objective aggregate economic data (like that used in Kramer 1971, 1983) as measures of pocketbook circumstances. As Rosenstone, Hansen, and Kinder (1986) demonstrate, self-reports attained via the five-category NES query are quite reliable, correlating strongly with specific events in the respondents' lives (loss of a job, falling behind on bills, etc.), and with economic data on real disposable personal income. By using the respondent answers as the basis for both our pocketbook and sociotropic items, we avoid the potential pitfall of weighing "real" data on one side against subjective assessments of improvement or decline on the other. Thus, both of our economic condition variables are based directly on respondent assessments and consist of five-point scales ranging from "much worse" to "much better."

Individual political sophistication is a bit more difficult to operationalize.⁴ Ideally, we wish to capture some

⁴ One simple method would be to use the interviewers' assessments of respondents' "apparent intelligence" and/or "level of knowledge about politics" found in the NES. In addition to being fraught with potential biases, however, these measures suffer from the fatal defect of insufficient variance. Interviewer ratings cluster at the middle of the scale, as there is a tendency to call all but truly exceptional respondents "average." Another possible method of measuring sophistication is to rely on the "levels of conceptual-

mix of knowledge and awareness in the domain of politics, to assess the level of cognitive complexity with which an individual is likely to approach social and political phenomena. In the 1992 study, a good variety of items tapping these concepts is available. We build a scale based on eight factual queries in the NES, including the offices held by Dan Quayle, Boris Yeltsin, Tom Foley, and William Rehnquist, the majority parties in the House and Senate, and the branches of government constitutionally charged with nominating judges and with ruling on the constitutionality of federal laws. This construction is very much in the spirit of Zaller's (1992) notion of political awareness and of Jacoby's (1995) political knowledge scale. The 1996 study, however, is more problematic, in that it omits the constitutional knowledge items. Thus, we are left with the task of constructing an equivalent eight-item scale (for easy direct comparison with the 1992 results) without the same knowledge items. What we have done, therefore, is to retain in the scale the identifications of political figures and add to them identifications of four major national network news anchors. Admittedly, this strategy is less than optimal. We would ideally have preferred to construct the information scales with exactly the same items across the two years, but that is unfortunately not possible. We believe, however, that the two scales capture the same general concept of attentiveness to and knowledge about political affairs.⁵ As Delli Carpini and Keeter (1993) have demonstrated, these NES items combine well to create a robust and effective measure of political sophistication.⁶ Details on the components of our sophistication scales are found in the appendix.

Finally, we are faced with difficult decisions about how to operationalize our main dependent variable, candidate choice. The problems here are two-fold: first, what to do with Perot voters (present in both 1992 and 1996), and second, whether to use pre-election or post-election

zation" proposed by Campbell et al. (1960). These, however, have been the subject of numerous criticisms, and are in any event highly correlated with political knowledge, media usage, and psychological involvement in politics, concepts tapped by our sophistication scales (Hagner and Pierce 1982).

⁵Such shifts in the measurement of political knowledge or sophistication are often necessary in multi-year studies using NES data, because of inconsistency in questions across the studies (see, for example, Jacoby 1995). Descriptive statistics on the scales for each year are presented in the appendix, allowing for a comparison between the two.

⁶In fact, Delli Carpini and Keeter (1993) argue that a five-item scale is sufficient to make meaningful distinctions between individuals at different levels of political sophistication. In the interest of clearer differentiation and more certainty of measurement, however, we have consistently employed an eight-item knowledge battery across all years.

reports of candidate preference. As for the first question, our response is fairly simple: we have included Perot voters with supporters of the major-party challenger (Clinton in 1992 and Dole in 1996), thus producing a dichotomous dependent variable coded 1 if the respondent supports reelection of the incumbent and 0 if he supports any other candidate. As both Downs (1957) and Fiorina (1981) assert, economic voting is essentially an up-or-down referendum on governmental performance; thus, a vote for Perot and a vote for the major-party challenger are equivalent repudiations of the incumbent President.⁷ On the second issue, we opt for the candidate preference question in the pre-election phase of the election studies. We make this choice for two main reasons. First of all, the economic assessment items are asked in the pre-election phase. Using the pre-election candidate preference measure allows for a contemporaneous model of economic assessment and candidate choice, avoiding the problems associated with modeling vote choice reported in November or December as a function of economic assessments offered in September. Additionally, using the pre-election candidate choice measure allows us to retain the 200–300 respondents that are typically lost between the pre-election and post-election survey waves.⁸ This feature is important, given that we divide the sample into four sophistication categories, and seek to maintain sufficiently large populations in each cell. Thus, we believe that the pre-election candidate choice query is the most appropriate and analytically useful for our purposes.

Findings

In Table 1, we provide an initial test of our prediction of heterogeneity in pocketbook attributions. Drawing on a unique indicator from the 1992 National Election Study, we examine our claim that high sophisticates are more likely than low sophisticates to attribute responsibility for their personal economic circumstances to the national government (and hence, at least in part, to the President).⁹

⁷The pattern of results reported here, however, is clearly *not* a product of including Perot voters in the models. When the analyses are replicated with Perot voters dropped, a very similar pattern of results emerges, confirming all of the findings presented here.

⁸We have estimated models alternating candidate preference (pre-election) and vote choice (post-election) as the dependent variable and have found no major differences between them. Indeed, in 1992, the correlation between pre-election candidate preference and eventual reported vote choice is .94.

⁹Ideally, we would like to have a question that asks whether *the President's* policies (as opposed to just federal government policies) have had an impact on individuals' personal financial cir-

TABLE 1 Probit Model: Credit/Blame of Federal Government for Personal Economic Circumstances (1992)

Variable	M.L.E. (S.E.)	Δ
Constant	-0.43*** (0.13)	
Political Sophistication	0.73*** (0.15)	0.26
Pocketbook Evaluation	-0.30*** (0.03)	-0.40
Party Identification	0.08*** (0.02)	0.17
Party Identification × Pocketbook Evaluation	0.03** (0.02)	0.07
Log Likelihood	-770.69	
LR χ^2	177.47 (4)***	
% Predicted Correctly	70.16	
% Reduction in Error	22.38	
N	1290	

Note: Marginal effects (Δ) indicate the proportional change in the predicted probability of y given a discrete change in x from its minimum to maximum.

*** $p < .01$, one-tailed test

** $p < .05$, one-tailed test

* $p < .10$, one-tailed test

Respondents who reported some change in their family's economic well being were asked if they thought federal government policies were responsible for that change.¹⁰ The dependent variable is dichotomous, coded 1 for respondents who said that federal economic policy had made a difference in their lives (for better or worse) and 0 for those who saw no real effect. Of course, there are a variety of competing hypotheses for which we must control. One such possible explanation is that the more sophisticated groups may differ significantly from the less sophisticated in their mean assessments of pocketbook economic conditions, particularly since the correlation between income and political sophistication is a non-trivial .39. As several scholars (e.g., Bandura 1982, Madsen 1987) have pointed out, people are much more likely to

cumstances. In the absence of such a query, however, we believe that the more general "federal government" item is a reasonable proxy, tapping the same key concept of the individual's ability to make distal linkages. While the President is clearly not coterminous with the federal government, he is its single most significant actor.

¹⁰The exact question wording is: "Over the past year have the economic policies of the federal government made you (and your family) better off, worse off, or haven't they made much of a difference either way?"

make self-attributions for positive outcomes than for negative ones. Thus, differences in mean pocketbook assessments according to sophistication could influence patterns of attribution in the electorate, quite apart from any cognitive disparities. Another possible influence on the likelihood of making a global attribution of responsibility for one's own economic circumstances is party identification. On the simplest level, Democrats for ideological reasons may be more inclined to see government as a major influence on economic conditions than Republicans. More important, however, is an interactive measure. All else equal, Republican citizens should be more likely to credit Republican presidents if they have had personal economic success, and less likely to blame a Republican president for their own financial downturns. For Democratic citizens, exactly the opposite patterns should apply. Thus, in 1992, Republicans for whom things have gotten better and Democrats for whom things have gotten worse should be more likely to attribute causality nationally than individuals of the opposite party in similar economic circumstances. Finally, of course, our key contention is that, even controlling for these additional explanatory variables, more sophisticated individuals should be substantially more likely to associate government policy with pocketbook outcomes than their less sophisticated counterparts. These four explanations are tested simultaneously in our multivariate model.

In the table, we report both maximum-likelihood estimates and changes in predicted probabilities (Δ) for each variable. All four of the expected relationships hold to a highly significant degree. Democrats seem to see government policy as more economically consequential than do Republicans. Also, Republicans are more willing to give President Bush a break (by ascribing their own misfortunes to nongovernmental forces) than are Democrats. The federal government, as expected, gets more blame for bad personal outcomes than it does credit for good ones. Most importantly, however, even when these factors are taken into account, sophistication remains a major predictor of whether an individual will make the distal connection between federal economic policy and personal economic outcomes. Substantively, the most sophisticated respondents are 26 percent more likely, *ceteris paribus*, to credit or blame the federal government for changes in their own economic welfare than are the least sophisticated respondents. This effect, while not as great as the self-congratulatory "positivity bias," is larger than the *combined* effects of party identification and the partisan interaction term. The link between sophistication and attributional processes appears genuine, not merely an artifact of differing economic states or partisan attachments.

The preceding analysis provides strong support for our argument that political sophistication increases an individual's likelihood of associating *personal* economic conditions with government policy. What it does not test, however, is our claim about sophistication's effect on attributions of credit or blame for *national* economic conditions. As discussed previously, we maintain that less sophisticated individuals will tend to focus disproportionately on the President's responsibility for national economic outcomes, as he is the single most obvious actor on the national stage. More politically sophisticated people, by contrast, are more likely also to recognize other, nonpresidential causes of national economic prosperity or recession, including the decisions of Congress, the Federal Reserve, the business community, and international actors, among others. Thus, all else equal, political sophistication should decrease an individual's likelihood of ascribing primary or exclusive responsibility for national economic outcomes to the President. While it is difficult to construct a good test of this proposition with questions available in the 1992 and 1996 NES, the 1998 study contains two new items that address the issue directly. In one question, respondents are asked who they feel "is most responsible for the economic conditions of the past few years;" in another, they are asked who "deserves more of the credit for the federal budget surplus." In both cases, they are presented with a variety of response choices, including both the President and Congress along with others. Clearly, these items provide an excellent opportunity to assess whether political sophistication indeed decreases the likelihood that an individual will attribute primary responsibility for these national economic outcomes to the President.

In Table 2, we present probit models based on these two queries. In addition to political sophistication, likelihood of attributing prime responsibility to the President is modeled as a function of sociotropic evaluations, party identification, and their interaction. The assumption here is that Democrats are more likely to identify President Clinton as chiefly responsible for national economic conditions than are Republicans, particularly if they believe things have been going well (as most do). This expectation is clearly borne out in the results. Democrats are much more likely than Republicans to see President Clinton as primarily responsible for both the general state of the national economy and for the federal budget surplus. Even after controlling for these predictable partisan biases, however, political sophistication remains a significant factor. High sophisticates are 9 percent less likely than low sophisticates to give the President primary credit for general economic conditions and, more tellingly, 33 percent less likely to give him primary credit

TABLE 2 Probit Model: President’s Responsibility for National Economic Circumstances (1998)

Variable	General Economic Conditions ^a		Budget Surplus ^b	
	M.L.E. (S.E.)	Δ	M.L.E. (S.E.)	Δ
Constant	-1.05*** (0.10)		-0.55*** (0.09)	
Political Sophistication	-0.36** (0.17)	-0.09	-0.85*** (0.16)	-0.33
Sociotropic Evaluation	0.02 (0.07)	0.01	-0.36*** (0.06)	-0.52
Party Identification	0.45*** (0.10)	0.12	1.50*** (0.09)	0.54
Party Identification × Sociotropic Evaluation	-0.23 *** (0.09)	-0.06	0.21 *** (0.09)	0.33
Log Likelihood	-577.82		-668.01	
LR χ^2	63.07 (4)***		410.76 (4)***	
% Predicted Correctly	81.21		75.50	
N	1261		1261	

^a People often hold different parts of the government or society responsible for economic conditions . . . tell me who you feel is more responsible for the economic conditions of the past few years, the Congress, the President, working people, or business people (recoded so that President = 1; others = 0)?

^b Who do you think deserves more of the credit for the federal budget surplus, the Clinton administration, the Republican Congress, neither, or both [vol] (recoded so that Clinton administration = 1; else = 0)?

Note: Marginal effects (Δ) indicate the proportional change in the predicted probability of y given a discrete change in x from its minimum to maximum.

*** $p < .01$, one-tailed test

** $p < .05$, one-tailed test

* $p < .10$, one-tailed test

for the budget surplus. In both models, our hypothesis is substantiated: Politically sophisticated respondents are appreciably less likely to attribute prime responsibility for national economic conditions to the President. These results provide strong evidence for our contention that political sophistication is associated with more diffuse attributions of responsibility for national economic conditions, and thus for less president-centered sociotropic evaluations.

Our analyses to this point demonstrate the individualizing properties of political sophistication as a predictor of both pocketbook and sociotropic attributions. They do not, however, address directly the *conditioning effect* of sophistication on candidate choice suggested by our theory. Political sophistication clearly affects judgments of who is responsible for economic outcomes, but do these differential attributions influence the mechanisms of electoral choice in meaningful ways? To answer this question, we present in Table 3 probit models of presidential candidate preference stratified by levels of political sophistication.¹¹ In specifying the models, we incor-

porate several well-accepted indicators as exogenous predictors of candidate preference. We include a battery of socioeconomic factors as statistical controls, including measures of race¹², gender, region, age, income, and education. While each of these variables is theoretically important in explaining candidate preference, we refrain

to engage in pocketbook voting (that is, that this term should be nonsignificant for less sophisticated voters). Empirical validation of this hypothesis in a single interactive model would require the calculation of conditional standard errors and point estimates. Unlike in the regression case (Friedrich 1982), interpretation of the conditional effects of interaction terms in binary choice models is controversial (Berry 1999). A recent article by Huang and Shields (2000) provides a partial solution to the problem, requiring a full application of Taylor’s Theorem in order to assess the instantaneous effect of the multiplicative term. Yet, to our knowledge, there does not exist reliable, Monte Carlo evidence on the calculation of conditional standard errors in these nonlinear models. In secondary analyses, however, we have used a pooled approach with sophistication-interaction variables, which confirms our central hypotheses. These analyses are available from the authors.

¹²The reader will note that, in Tables 3 and 4, there is no coefficient reported for the race (black) variable in the highest sophistication category. This is not because no black respondents fall into this category, but because blacks at that level of sophistication uniformly support the Democratic candidate.

¹¹We present our analyses using stratified samples instead of multiplicative interaction terms chiefly because of our hypothesis that individuals at the lowest levels of sophistication should not be able

TABLE 3 Probit Model: Presidential Candidate Choice by Level of Sophistication (1992)

Variable	Low		Medium-Low		Medium-High		High	
	M.L.E. (S.E.)	Δ	M.L.E. (S.E.)	Δ	M.L.E. (S.E.)	Δ	M.L.E. (S.E.)	Δ
Constant	0.12 (0.56)		-0.90* (0.56)		-2.28*** (0.67)		-2.52** (1.43)	
Black	-0.40** (0.22)	-0.12	-0.20 (0.34)	-0.07	-0.44 (0.49)	-0.14		
Female	0.17 (0.19)	0.05	0.63*** (0.17)	0.19	0.23* (0.17)	0.08	-0.03 (0.34)	-0.01
Southern	0.10 (0.18)	0.03	0.03 (0.18)	0.01	-0.21 (0.19)	-0.07	0.53** (0.35)	0.19
Age	0.01*** (0.00)	0.34	0.01 (0.01)	0.14	0.00 (0.01)	0.09	0.02*** (0.01)	0.44
Income	0.00 (0.02)	0.04	0.03** (0.01)	0.23	-0.02 (0.02)	-0.13	-0.07** (0.03)	-0.58
Education	0.03 (0.07)	0.06	-0.09* (0.06)	-0.19	0.09* (0.06)	0.19	0.20** (0.12)	0.30
Party ID	-0.37*** (0.05)	-0.71	-0.49*** (0.05)	-0.85	-0.46*** (0.05)	-0.80	-0.62*** (0.11)	-0.86
Ideology	0.02 (0.05)	0.04	0.18*** (0.07)	0.38	0.33*** (0.07)	0.62	0.36** (0.17)	0.58
Social Spending	-0.14** (0.06)	-0.28	-0.05 (0.06)	-0.12	0.12** (0.07)	0.26	0.06 (0.13)	0.11
National Defense	-0.03 (0.07)	-0.05	0.20*** (0.07)	0.27	0.26*** (0.08)	0.34	0.19* (0.14)	0.22
Racial Attitude	-0.05 (0.05)	-0.10	-0.09** (0.05)	-0.20	0.05 (0.06)	0.10	-0.07 (0.12)	-0.12
Sociotropic Evaluation	0.44*** (0.09)	0.62	0.43*** (0.09)	0.60	0.37*** (0.10)	0.55	0.17 (0.18)	0.23
Pocketbook Evaluation	0.02 (0.07)	0.03	0.08 (0.07)	0.12	0.16** (0.09)	0.24	0.64*** (0.19)	0.70
Log Likelihood	-156.47		-166.94		-151.28		-48.74	
LR χ^2	136.22 (13)***		300.65 (13)***		336.15(13)***		229.15(12)***	
% Predicted Correctly	81.97		84.30		86.60		91.50	
% Reduction in Error	40.54		53.29		63.37		80.00	
N	366		497		485		238	

Note: Marginal effects (Δ) indicate the proportional change in the predicted probability of y given a discrete change in x from its minimum to maximum.

*** $p < .01$, one-tailed test

** $p < .05$, one-tailed test

* $p < .10$, one-tailed test

from discussing such well-known factors in order to focus our attention on those concepts most central to our theory. In addition to the demographic control variables, we also employ measures of the respondent's party identification (high values indicating Democratic allegiance) and political ideology (high values indicating conservatism) as variables in the model. These terms for partisanship and ideology are supplemented by three general measures of the respondent's issue preferences in different policy domains (domestic social spending, national defense, and racial policy).¹³ Finally, the models include

¹³ These three items were chosen for several reasons. First and most importantly, they were significant issues in 1992 and 1996. Sec-

the respondent's self-reported evaluations of both sociotropic and pocketbook economic conditions. These, of course, are our key variables of interest.

The findings presented in Table 3 support convincingly the predictions of our heterogeneous attribution

only, identical or nearly identical questions in these areas are in the NES for both years, allowing us to construct equivalent models for the two electoral cycles. The variable numbers are, for 1992, v3701, v3707, v3724; for 1996, v960450, v960463, v960487. These three issue domains (foreign policy/national defense, domestic taxing and spending, and race relations) mirror those selected by Miller and Stokes (1963), among others, as the central issue areas in American political life. It is important to note, though, that our overall results are not sensitive to the inclusion or omission of these items.

theory. As expected, at all levels of political sophistication partisanship significantly predicts candidate preference in 1992, with Democrats much less likely to favor the incumbent, George Bush, than Republicans. In all cases, strong Democrats are at least 70 percent less likely to support George Bush than are strong Republicans. The issue items are a mixed bag—only attitudes toward national defense emerge as a consistently important predictor of vote choice. More interesting, however, is the observed relationship between ideology and candidate choice at different levels of sophistication. For the least sophisticated group, political ideology is not significantly related to presidential candidate preference. This finding should not come as a surprise, since less sophisticated individuals generally lack the cognitive capacity to understand politically abstract concepts such as liberalism or conservatism, and thus tend not to use ideology in making political choices (Campbell et al. 1960; Converse 1964; Sniderman, Brody, and Tetlock 1991). For the more sophisticated groups of respondents, however, political ideology is a significant predictor of presidential candidate preference, and in the anticipated direction. Once again, this pattern makes sense, given Jacoby's (1995) claim that political knowledge is a strong predictor of more sophisticated ideological thinking, and Knight's (1985) finding that ideology is an increasingly important predictor of vote choice at higher levels of conceptualization. Clearly, this conditional effect associated with ideology helps to validate our measure of political sophistication.

As predicted by our theory of heterogeneous attribution, the results presented in Table 3 demonstrate that pocketbook voting is confined to the politically sophisticated. In neither the "low" nor the "medium-low" sophistication categories is the relationship between pocketbook evaluations and candidate choice statistically significant. As our theory posits, low sophisticates seem to lack the cognitive capacity to make consistently the distal associative linkage between personal economic evaluations and the policies of the incumbent administration. More sophisticated voters, on the other hand, do seem to take their own financial circumstances into account when deciding whether or not to support the incumbent President. In both the "medium-high" and "high" sophistication categories, respondents whose own economic circumstances had improved rewarded President Bush for those positive pocketbook outcomes, while those who were less successful financially penalized him by voting against his reelection. The results for the sociotropic variable, though more even across the groups, are also consistent with our hypotheses. At the three lower levels of sophistication, voters appear to make a link between the President's performance and the perceived state of the na-

tional economy. Among the most sophisticated voters, however, there is less evidence of sociotropic voting; the coefficient, while positive, is nonsignificant. Even more important is an examination of the *relative* impact of pocketbook and sociotropic factors at different levels of sophistication. Whereas for the least sophisticated voters the sociotropic effects dwarf those of personal economic circumstances (by margins of at least 2:1), for the most sophisticated group sociotropic evaluations are significantly less important in shaping candidate choice than are pocketbook concerns (with a Δ of .70 as opposed to .23). Combined with the analyses presented previously, we believe that these clear findings lend considerable credence to our theory of sophistication and attribution.

In order to provide additional confirmation of our findings, we also apply our model of presidential candidate preference to data from the 1996 National Election Study. As noted previously, this election differs in several significant ways from 1992, most importantly in the party of the incumbent and in the generally perceived health of the national economy. The findings, reported in Table 4, once again support our theory of heterogeneous attribution. As was the case in our 1992 model, party identification is significantly related to presidential candidate preference, with Democrats much more likely to support President Clinton than Republicans (with a maximum effect of over 85 percent in all cases). The pattern, noted for 1992, in which ideology's impact on presidential preference is conditioned by political sophistication is also present in these 1996 data, as the lowest sophistication group seems entirely devoid of ideological reasoning. Most importantly, the expected heterogeneity associated with pocketbook voting is again apparent. Less sophisticated voters show no evidence of pocketbook voting, whereas individuals in the higher sophistication categories do appear to employ this calculus in their choice of presidential candidates. In both the "medium-high" and "high" sophistication categories, pocketbook economic evaluations are statistically significant and in the predicted direction, with associated changes in the respondent's likelihood of supporting President Clinton of 29 percent and 39 percent, respectively. As in the 1992 analysis, the impact of sociotropic evaluations appears greater among the two less sophisticated groups than among the two more sophisticated ones, though it is significant in all cases.

By presenting findings from two very different presidential elections, we believe that we have clearly demonstrated the importance of incorporating cognitive sophistication into our understanding of economic voting. Furthermore, we believe that our theory of heterogeneous attribution provides an accurate understanding of the decision mechanisms that voters use when attributing

TABLE 4 Probit Model: Presidential Candidate Preference by Level of Sophistication (1996)

Variable	Low		Medium-Low		Medium-High		High	
	M.L.E. (S.E.)	Δ	M.L.E. (S.E.)	Δ	M.L.E. (S.E.)	Δ	M.L.E. (S.E.)	Δ
Constant	0.39 (0.96)		-1.56* (1.09)		-0.52 (1.00)		-0.42 (1.25)	
Black	1.33** (0.58)	0.24	1.46** (0.83)	0.26	0.40 (0.59)	0.11		
Female	0.04 (0.29)	0.01	0.42* (0.26)	0.16	0.27 (0.24)	0.10	-0.29 (0.30)	-0.11
Southern	0.09 (0.31)	0.03	0.16 (0.32)	0.05	-0.28 (0.26)	-0.10	-0.10 (0.32)	-0.04
Age	0.00 (0.01)	0.06	0.01 (0.01)	0.21	0.00 (0.01)	0.02	0.01 (0.01)	0.16
Income	-0.06** (0.03)	-0.40	0.01 (0.03)	0.10	-0.01 (0.03)	-0.10	0.02 (0.03)	0.22
Education	0.05 (0.10)	0.10	-0.06 (0.11)	-0.13	0.03 (0.09)	0.06	-0.07 (0.10)	-0.17
Party ID	-0.52*** (0.09)	-0.87	-0.67*** (0.09)	-0.94	-0.63*** (0.09)	-0.88	-0.57*** (0.09)	-0.91
Ideology	0.02 (0.09)	0.04	0.22** (0.11)	0.39	0.29*** (0.10)	0.47	0.23** (0.11)	0.50
Social Spending	0.12 (0.12)	0.24	0.22* (0.14)	0.42	0.14 (0.09)	0.26	0.19* (0.11)	0.42
National Defense	-0.06 (0.12)	-0.12	0.06 (0.12)	0.11	0.05 (0.11)	0.09	-0.11 (0.13)	-0.26
Racial Attitude	0.16* (0.10)	0.29	0.02 (0.11)	0.04	0.16** (0.09)	0.27	-0.14 (0.12)	-0.32
Sociotropic Evaluation	0.54*** (0.19)	0.65	0.91*** (0.21)	0.92	0.37*** (0.16)	0.48	0.45*** (0.18)	0.63
Pocketbook Evaluation	0.01 (0.15)	0.02	-0.16 (0.14)	-0.21	0.21* (0.14)	0.29	0.26** (0.16)	0.39
Log Likelihood	-52.25		-50.81		-72.50		-56.53	
LR χ^2	115.62(13)***		231.89(13)***		263.05(13)***		243.85(12)***	
% Predicted Correctly	89.32		92.21		89.56		90.70	
% Reduction in Error	65.55		81.90		76.52		80.33	
N	178		244		297		258	

Note: Marginal effects (Δ) indicate the proportional change in the predicted probability of y given a discrete change in x from its minimum to maximum.

*** $p < .01$, one-tailed test

** $p < .05$, one-tailed test

* $p < .10$, one-tailed test

responsibility for personal and societal economic conditions to political candidates. At low levels of political sophistication, voters appear to rely heavily on their evaluations of national economic conditions as a criterion for presidential choice and to discount their own personal economic circumstances. Such a criterion is, of course, meaningful, if not individually "rational." Sophisticated voters, on the other hand, appear to make a more balanced use of both personal and sociotropic evaluations when considering candidates for public office.

Discussion

In this study, we have examined the impact of individuals' political sophistication on their use of economic heuristics in presidential voting. Sociotropic voting, while particularly powerful among the less sophisticated, is ubiquitous; evaluations of the national economy exert some influence on candidate choice for almost all groups of voters, at varying sophistication levels. This consistent effect across the sophistication spectrum of the American elec-

torate explains the general predominance of sociotropic variables in undifferentiated cross-sectional vote-choice models.¹⁴ Instances of pocketbook voting, however, are more selective, and appear to be largely dependent on voter sophistication. In both elections examined, personal financial circumstances exert a significant impact on candidate choice among the two most sophisticated groups of respondents, in one case surpassing in magnitude sociotropic evaluations among the most sophisticated voters. We have explained how greater sophistication helps voters make the sometimes difficult distal connection between financial circumstances in their everyday lives and the President's national policy decisions and have demonstrated that sophistication is indeed an important predictor of whether or not they will make this attributive link.

Our finding that pocketbook voting generally occurs only among the more politically sophisticated proves durable, in that it is strongly confirmed in two very different electoral contexts. Exactly the same pattern emerges in 1992, where the incumbent was a Republican running under unfavorable economic conditions, as in 1996, where a Democratic incumbent enjoyed national economic prosperity. Likewise, the results survive different treatments of third-party voters (both exclusion and incorporation with the challenger's supporters) and somewhat different specifications of the political sophistication scale. This general robustness of our key observations gives us considerable confidence in their validity and suggests that the dependence of pocketbook voting on political sophistication is indeed profound.

That it is pocketbook, and not sociotropic, voting that is dependent on sophistication will likely come as a surprise to many. At least since *The American Voter*, it has been assumed that simply projecting one's own economic circumstances onto the larger polity and voting accordingly is the easiest, most basic vote decision heuristic. For voters with very little awareness of the larger political world, personal factors would seem to constitute a proportionately larger share of the considerations that they might possibly bring to bear in making political choices. Yet, what has been construed as "simple rationality" does not appear to be "simple cognition." To the contrary, we have argued that pocketbook voting is not easy;

¹⁴Indeed, our analysis reinforces the conventional wisdom on economic voting in one respect: for the pooled sample and for the modal voter, sociotropic concerns are more important than pocketbook ones in shaping presidential vote choice. Thus, our challenge is not to the overall primacy of sociotropic evaluations as predictors of electoral decision making, but to assumptions of voter homogeneity and to misunderstandings of sophistication's role in economic voting.

rather, it requires voters to make a plausible distal link between extremely localized circumstances and macro-level policies enacted in a much larger sphere. As a result, less sophisticated voters seem to draw exclusively on sociotropic judgments when incorporating economic factors into their candidate choice calculus. More sophisticated citizens, by contrast, have a broader array of politically relevant economic assessments at their disposal: they have the cognitive wherewithal to engage in sociotropic voting, pocketbook voting, or (more likely) both. These findings indicate that our understanding of economic voting, and especially of the attributional processes underlying it, could benefit greatly from more attention to the psychological and cognitive roots of voter heterogeneity.

Our work here suggests several potentially fruitful avenues for future analysis. To begin with, one could examine the impact of sophistication not just on how people use their economic judgments in choosing among candidates, but on how they formulate those judgments in the first place. Additionally, we may gain substantial leverage on the question of sophistication and economic heuristics through an examination of other political choice domains. For example, the same attributional process that makes sociotropic voting less prominent among sophisticated voters at the presidential level may in fact make these voters *more* likely to employ a sociotropic decision heuristic in congressional or gubernatorial elections. Likewise, the dynamics of attribution explained here could shed considerable light on how political sophistication shapes public opinion in many interesting and important areas, including broader issues of individual versus government responsibility. If varying levels of sophistication and the resulting attribution processes produce such significant heterogeneity in presidential economic voting, there is good reason to examine their effects in other areas as well.

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Appendix **The Measurement of** **Political Sophistication**

Our working definition of political sophistication is drawn from Sniderman, Brody, and Tetlock:

"[P]olitical sophistication is a 'bundle' concept: It packs together related, if distinguishable, properties

including a tendency to pay close attention to politics, to have ready at hand banks of information about it, to understand multiple arguments for and against particular issue positions, and to recognize interrelationships among those arguments.” (1991, 21)

The Sniderman, Brody, and Tetlock definition draws upon the psychological concept of *cognitive complexity*, where the complexity of a cognitive structure is determined by its degree of *differentiation* and *integration* (Neuman 1981; Tetlock 1983). As Sniderman, Brody, and Tetlock explain, “[d]ifferentiation refers to the number of evaluatively distinct dimensions of judgment an individual takes into account in interpreting events or in making choices. In contrast, integration refers to the number of conceptual connections among differentiated idea-elements” (1991, 26). This concept of political sophistication is in our view better than that of Converse, whose heavy reliance on “constraint” over-emphasizes the role of integration while discounting differentiation in the belief system.

We measure political sophistication by tapping both the individual’s political knowledge and his attention to politics. Because we use the NES, our ability to measure “knowledge-in-use,” as Neuman (1981) terms it, is limited. However, we have considerable confidence in our current measures as valid indicators of political sophistication (see Delli Carpini and Keeter 1993). In the 1992 study, we construct a sophistication scale based upon eight NES queries:

- (Q1) The first name is Dan Quayle. What job or political office does he now hold?
- (Q2) Boris Yeltsin?
- (Q3) Tom Foley?
- (Q4) William Rehnquist?
- (Q5) Who has the final responsibility to decide if a law is or is not constitutional . . . is it the President, the Congress, the Supreme Court, or don’t you know?
- (Q6) And whose responsibility is it to nominate judges to the Federal Courts . . . the President, the Congress, the Supreme Court, or don’t you know?
- (Q7) Do you happen to know which party had the most members in the House of Representatives in Washington before the election (this/last) month?
- (Q8) Do you happen to know which party had the most members in the U.S. Senate before the election (this/last) month?

From this cumulative scale, we attempt to stratify respondents into quartiles to the greatest extent possible. However, exact quartiles can not be obtained, making some groupings larger than others.¹⁵ Our decision rule for placing a group

¹⁵The exact frequencies of respondents at each position on the full nine-point scale are as follows for 1992: 0 (216), 1 (326), 2 (278),

with one quartile rather than another was the preservation of the sophistication extremes. So, for example, in 1992, “high sophisticates” scored 6, 7, or 8 on the cumulative scale (13.87 percent of the sample). Had we included respondents who scored a 5 as “high sophisticates,” the category would have comprised over 30 percent of the sample. For 1992, the frequencies associated with the sophistication categories are as follows: Low 542 (26.4 percent), Medium-Low 613 (29.8 percent), Medium-High 615 (29.9 percent), High 285 (13.9 percent).

For 1996, the omission of certain questions found in 1992 required that we choose alternative items for scale construction. The first four questions from the scale described above remain the same. Unfortunately, however, questions 5–8 are absent in 1996. Thus, we replace them with the following:

- (Q5) Tom Brokaw. Do you know which network he works for—is it CBS, CNN or which?
- (Q6) What about Peter Jennings?
- (Q7) What about Dan Rather?
- (Q8) What about Bernard Shaw?

For 1996, the frequencies associated with the sophistication categories are as follows: Low 239 (20.0 percent), Medium-Low 278 (23.26 percent); Medium-High 358 (30.0 percent), High 320 (26.8 percent).

Our analysis of sociotropic attributions using data from the 1998 NES incorporates another variation on our sophistication measure. Again, the alternative scale is mandated by the lack of consistency in the NES questionnaire across the three studies. As with our previous scales, knowledge items remain central. Once again, questions 1–4 are constant, but 5–8 shift as follows:

- (Q5) Do you happen to remember the names of the candidates for Congress—that is, for the House of Representatives in Washington—who ran in the November election from this district? Who are they? What is [NAME’S] Party? (1st Recall Accuracy)
- (Q6) 2nd Recall Accuracy
- (Q7) Do you happen to know which party had the most members in the House of Representatives in Washington before the election (this/last) month?

3 (335), 4 (272), 5 (343), 6 (170), 7 (80), 8 (35). For 1996, the frequencies are: 0 (10), 1 (30), 2 (74), 3 (125), 4 (278), 5 (358), 6 (207), 7 (88), 8 (25). While one could possibly debate exactly where the lines between different sophistication categories should be drawn, it is clear that our findings are *not* an artifact of how we have chosen to divide the categories. A single pooled model with multiplicative interaction terms confirms our central finding: the relative impact of pocketbook assessments on vote choice increases with political sophistication. This remains true no matter where (or whether) one divides the sophistication categories.

(Q8) Do you happen to know which party had the most members in the U.S. Senate before the election (this/last) month?

Using this scale for 1998, the frequencies associated with the sophistication categories are as follows: Low 351 (27.4 percent), Medium-Low 453 (35.4 percent), Medium-High 251 (19.6 percent), High 226 (17.6 percent).

Finally, we also tested the unity of the variables constructing our scales using principal-components factor analysis. For 1992, we find one significant factor (eigenvalue = 3.329), and all variables load on the factor to a significant degree (the lowest loading being the Rehnquist identification at .439). For 1996, again, we find only one significant factor (eigenvalue = 3.542). This factor comprised all eight variables (with the lowest loading again the Rehnquist identification at .407). Finally, we also find a single common factor using the 1998 items (eigenvalue = 2.798). Each item loads significantly on the factor (the Rehnquist item again with the lowest loading, .284).¹⁶

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¹⁶It should be noted, however, that the two congressional candidate recall items also load onto a second independent factor (eigenvalue = 1.245).

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