

# VALUE CHOICES AND AMERICAN PUBLIC OPINION

Running Head: Value Choices and American Public Opinion

Keywords: Values; value choices; value conflict; ambivalence,  
issue attitudes, sophistication, issue framing

William G. Jacoby  
Michigan State University  
*[jacoby@msu.edu](mailto:jacoby@msu.edu)*

February 2006

A report containing supplemental analyses and additional information  
relevant to this study is available on the author's web site:  
<http://polisci.msu.edu/jacoby/>

Special thanks go to George Rabinowitz and Sandra K. Schneider; this project could not have been completed without their assistance. I would also like to thank Paul Sniderman for making me a part of the 1994 Multi-Investigator Study and for his continued interest in, and support of, this research. I appreciate very much the excellent comments and suggestions that were provided by Stanley Feldman, John Geer, George Marcus, Michael Martinez, David Peterson, Gregory Pettis, David Redlawsk, Darren Schreiber, Marco Steenbergen, Christopher Wlezien, the Politics Group of Nuffield College, Oxford University, the Fall 2003 New York Area Political Psychology Seminar, the University of North Carolina-Duke University American Politics Research Group, and the three anonymous *AJPS* referees.

## **ABSTRACT**

Individual preferences among core values are widely believed to be an important determinant of political attitudes. However, several theoretical perspectives suggest that people experience difficulties making choices among values. This paper uses data from the 1994 Multi-Investigator Study to test for hierarchical structure in citizens' value preferences. The empirical results show that most people make transitive choices among values and that their value preferences have an impact on subsequent issue attitudes. To the extent that citizens exhibit intransitive value choices and/or apparent difficulties in the "translation process" from value preferences to issue attitudes, it is due more to low levels of political sophistication than to the existence of value conflict.

This paper examines value choices within the American mass public. The most fundamental reason for doing so lies in the fact that core values are widely believed to be important determinants of subsequent political orientations and behavior. But, a more immediate motivation stems from a contradiction that seems to be developing in the literature on this topic: On the one hand, longstanding social psychological theories about human values stress the importance of value *structures*— individuals' organized, consistent preferences across a range of separate values. On the other hand, recent political science research suggests that some people may be unwilling or unable to make “real” choices between values. The latter perspective not only calls into question the existence of hierarchical value preferences; It also has important consequences for understanding the nature and sources of American public opinion. At the present time, however, it is not clear which of these two general perspectives provides the most accurate representation of core values.

The analysis presented below uses a unique dataset— the 1994 Multi-Investigator Study— to test the existence of value structures within the American public. The empirical evidence to be presented here suggests that most people do, in fact, make consistent, hierarchically-organized, choices across values. And, to the extent that some individuals do not exhibit fully-ordered value preferences, it is due to low levels of political sophistication, rather than substantively-motivated difficulties in making the choices. Stated simply, value conflict does not seem to be a very pervasive phenomenon, and individual choices among core values do provide useful guidelines for structuring mass political attitudes.

## **BACKGROUND**

For present purposes, *values* can be defined as each individual's abstract, general conceptions about the desirable and undesirable end-states of human life (Rokeach 1973). As such, values provide criteria for judging external stimuli and interacting with other elements of the social environment. They effectively define what is “good” and “bad” in the world. A critical distinguishing feature of values, at least as they are traditionally conceived, is their applicability across different contexts: Schwartz and Bilsky (1987, pg. 551) state that “values ... transcend specific situations.” Because of their

“transsituational” nature (Schwartz 1996), values provide individuals with a general evaluative standard for confronting the world (Rokeach 1973). When conceptualized in this manner, it is easy to see why values are widely believed to be a fundamental building block of human behavior (e.g., Kuklinski 2001; Feldman 2003).

## **Value Structures**

Most contemporary understandings of human values can be traced to the pioneering work of social psychologist Milton Rokeach, whose influential Values Survey (1973) showed that people seem to possess value *hierarchies*, which summarize their personal assessments about those values that are more important and those that are less important. Value preferences appear to be quite reliable (i.e., they are stable over time), comparable from one person to the next, and related in reasonable ways to other interesting aspects of human behavior (e.g., social class distinctions, racial prejudice, and political ideology).

Subsequent investigations of values have proceeded in a wide variety of different directions (e.g., Spates 1983; Seligman, Olson, Zanna 1996). But, the basic notion that value *structures* are the key to understanding human behavior (e.g., Schwartz and Bilsky 1987; Schwartz 1992) remains a central component of most analyses. People are rarely affected by single values, in isolation from other values. Instead, values are arranged into personal preference rankings (Verplanken and Holland 2002). The impact on other behaviors stems from the juxtaposition of values that is inherent in such a structure: “Indeed, values may play little role in behavior except when there is value conflict— when a behavior has consequences promotive of one value but opposed to others that are also cherished by the person (Schwartz 1996, p. 2).”

The implication from this line of work is that it makes little sense to examine the impact of a single, particular value on public opinion. Instead, it is necessary to observe how choices among different values impinge on individual political orientations. This, in turn, requires taking the hierarchical structure of value preferences into account.

## Non-Ordered Value Choices?

There is a clear consensus in the psychological literature regarding the hierarchically structured nature and contextual stability of individual value choices. However, some recent research— particularly, in political science— has taken very different, and potentially contradictory, positions with respect to these value characteristics. For example, one prominent line of work focuses on value *ambivalence*. The desirable end-states implied by values like liberty and equality are, themselves, in short supply. Therefore, attainment of one value (e.g., liberty) will almost certainly restrict or inhibit the degree to which some other desirable end-state is achieved (e.g., equality). For individuals who actually recognize such conflicts, value ambivalence— the inability to state that one value is unambiguously more important than another— is a likely result (Feldman and Zaller 1992; Alvarez and Brehm 2002). This, in turn, restricts the degree to which value choices can be combined into fully hierarchical structures.

A second potential source of non-ordered value choices is *indifference* (Maio and Olson 1998). When confronted with lofty and emotion-laden terms like “liberty,” “equality,” and so on, many citizens could easily respond that they are all equally important, without thinking about, or perhaps even recognizing, the potential contradictions that might arise between those values. Such responses would be fully consistent with the relatively simplistic political socialization processes (e.g., Easton and Dennis 1969), lack of attitudinal constraint (e.g., Converse 1964), and difficulties in making “connections” between different political stimuli (Zaller 1992) that are known to be widespread within the mass public. Regardless of its exact source, this kind of value indifference would make it impossible to rank-order separate values in the ways that are implied by the concept of a value hierarchy.

A third challenge to the general idea of value structures is posed by the potential malleability of value choices. For example, Tetlock’s theory of value pluralism is based upon the idea that varying situational contexts affect the relevance of particular core orientations for human reasoning, causing some values to increase or decrease their importance, compared to other values (Tetlock 1986). Similarly, a prominent theory of issue framing holds that varied presentations of a policy controversy generate different responses by manipulating the relevance of particular values to the conflict at hand (Nelson,

Clawson, Oxley 1997). But, if such value pluralism or issue framing effects exist on a widespread basis, the very idea of hierarchical value preferences is rendered meaningless: “If values or value types do reorder themselves across situations, then we must ask what purpose the general value system serves. (Seligman and Katz 1996, pg. 72)”

A fourth, and perhaps more “technical,” source of seemingly non-ordered value choices is simple measurement error— random “noise” among individual responses to value stimuli. There has been quite a bit of disagreement over the best strategy for measuring value preferences (Alwin and Krosnick 1985; McCarty and Shrum 2000). Indeed, Kuklinski (2001) points out that research on values has “... often dwelled on ... narrow questions about measurement (p. 355).” Any imperfections in the empirical assessment of value preferences could produce sets of choices that seem to be non-ordered, even though the underlying (and unobservable) “true” feelings about values conform to a hierarchical pattern.

### **Hierarchical Structure or Non-Ordered Value Choices?**

All of the mechanisms discussed in the preceding section call into question the existence of hierarchical value structures. But, the existing empirical evidence is ambiguous and indeterminate. Some analyses focus on reactions toward individual values, without ever requiring people to juxtapose their feelings about separate values against each other (e.g., Feldman 1988; Feldman and Steenbergen 2001; Grant and Rudolph 2003). Other studies take an indirect approach, and examine the *consequences* of value orientations, rather than choices and/or ambivalence among explicitly-named values (e.g., Feldman and Zaller 1992; Alvarez and Brehm 2002).

The issue framing studies have produced rather contradictory results. Those that seem to reveal value-based framing effects examine differences in reactions to single values (Nelson et al. 1997; Grant and Rudolph 2003). However, some of the same researchers also show that preference orders across multiple values do *not* vary systematically across different issue frames (Nelson et al. 1997, pg. 576).

Several scholars have pointed out that, regardless of theoretical expectations, the empirical relationships between values and other behavior are often contradictory, weak, or even nonexistent (Kristiansen and Hotte 1996; McCarty and Schrum 2000; Kuklinski 2001). Such results are fully

consistent with the kind of attenuation that would result from measurement error. But, another explanation might be that values are simply not the fundamental constructs they are usually believed to be. For example, Maio and Olson (1998) argue that values are “truisms” or affective reactions with very little in the way of cognitive foundation or linkages to other psychological orientations.

Even those studies that explicitly acknowledge the importance of hierarchical value structures are problematic. Most of their measurement instruments (e.g., Rokeach’s Values Survey) simply ask people to rank-order a pre-specified set of values according to their importance (e.g., Rokeach 1973; Schwartz 1992). Experimental subjects and survey respondents are usually willing to comply cheerfully with interviewer instructions, regardless whether their overt responses are truly indicative of some meaningful underlying psychological trait (e.g., Schuman and Presser 1996). In the present context, this implies that some people may specify one value is more important than another simply because they have no other response alternative available to them.

Thus, the very existence of hierarchical value structures has never been rigorously tested. Accordingly, their prevalence and impact within the mass public remains largely unknown. Given the theoretical importance of values across a variety of scholarly disciplines, this is a critical gap that needs to be resolved.

### **DATA FOR MEASURING VALUE PREFERENCES**

It is quite difficult to obtain the kind of data that are required to examine patterns of value choices in American public opinion. Standard sources, such as the biennial CPS National Election Studies (NES), often contain a few items that purport to measure particular values (e.g., individual commitments to equal opportunity, moral traditionalism, and humanitarianism in the case of the NES). But, they rarely incorporate enough distinct values to tap the presence of value *structures* in any meaningful way. Furthermore, survey question formats often vary from one value to the next (within the same interview schedule), thereby inhibiting valid individual-level comparisons across different values. For these reasons, the present study will rely on data from a different source: The 1994 Multi-Investigator Study (MIS), carried out by the University of California-Berkeley’s Survey Research Center.

The MIS is based upon a nationwide random sample of 1464 American adults. It combines the factor manipulations of experimental designs with the broad coverage and external validity of public opinion surveys (Sniderman, Brady, Tetlock 1994). So, along with a variety of more or less standard survey questions (e.g., party identification and ideology sequences, a battery of feeling thermometer ratings, and standard demographic characteristics), there are many innovative items included in the interview schedule.<sup>1</sup> Among the latter, the MIS asked respondents to make paired-comparison choices among four values: Liberty, equality, economic security, and social order.

The introduction to, and content of, the MIS value preference questions is a bit lengthy. But, this is a unique set of items, so it is useful to go over them in some detail. Respondents were contacted by telephone and presented with the following introductory statement and battery of questions:

Now let's talk about things that are important for our society such as liberty, equality, economic security, and social order. Before we get to the questions, let me first explain what we mean by these ideas.

By LIBERTY we mean a guarantee of the widest freedom possible for everyone to act and think as they consider most appropriate.

By EQUALITY we mean narrowing the gap in wealth and power between the rich and the poor.

By ECONOMIC SECURITY we mean the guarantee of a steady job and a decent income.

By SOCIAL ORDER we mean being able to live in an orderly and peaceful society where the laws are respected and enforced.

All four of these ideas are important, but sometimes we have to choose between what is more important and what is less important. In your opinion, as things stand right now, which is more important for our country— liberty or equality?

How about economic security or social order? As things now stand, which do you feel is more important for our country?

How about liberty or economic security?

How about equality or social order?

How about liberty or social order?

How about equality or economic security?

Several features of this question battery deserve particular emphasis. First, these four values are firmly rooted in American political culture. This is important because there are ongoing disagreements about *which* values need to be taken into account for understanding human behavior (Kuklinski 2001).

Here, liberty and equality are central components of classical liberalism (e.g., Devine 1972; McClosky and Zaller 1984) while economic security and social order address some of the challenges to the predominant American ideology posed by the complexities of the modern world (e.g., Hochschild 1995; Rossiter 1962). Certainly, there are many other values that are potentially relevant to the ways that citizens think about political phenomena. But, it is still the case that virtually all domestic political issues can be traced to the problematic achievement of these four values.

Second, the four terms—liberty, equality, economic security, and social order— are defined explicitly for the respondents. This is important because these values are, by their very nature, quite broadly conceived. So, each value could potentially mean many different things to different people. Providing a single definition for each one, and asking respondents to use that in their choices, reduces any such extraneous variability in the responses (Sears, Huddy, Schaffer 1983). Therefore, observed variability in the pairwise choices is more likely to be due to actual differences in beliefs about value importance, rather than to individual differences in the understandings of the values, themselves.<sup>2</sup>

Third, the use of pairwise value comparisons makes the judgmental task particularly easy for the survey respondents. If people really do distinguish between these different values, then there should be no difficulties in sorting them out when they are considered two at a time. Certainly, the cognitive tasks involved in formulating the responses should be far easier than the rank-ordering of several dozen values that is required in other instruments, such as the Rokeach Values Survey (Einhorn and Hogarth 1981).

The fourth advantage of this question format— and, the most important for present purposes— is that it makes the very existence of individual-level value hierarchies an empirical question. To the extent that such hierarchies really do exist, they can be reconstructed from a person's responses to the pairwise value choices. In contrast, people who experience difficulties making choices between values (due to ambivalence, indifference, and/or measurement error, etc.) will be less likely to provide a complete rank-ordering of the values on the basis of their perceived importance. This ability to *test* explicitly for hierarchical structure in value choices is very different from more traditional value measurement strategies, which either *ignore* or merely *presuppose* the existence of value hierarchies.

## CHOICE AND STRUCTURE IN EMPIRICAL VALUE PREFERENCES

Clearly, the MIS respondents had little difficulty answering the questions in the values battery. Only about five percent refused to make the choices (a refusal rate that is comparable to, and often lower than, other items in the MIS interview schedule). And, on each pair of values, a tiny handful of people (between six and sixteen— never more than one percent of the sample) insisted that both values were important. This leaves the vast majority of respondents ( $n = 1352$ ) willing to state that one value is more important than the other in all of the pairs.

The information provided by the paired comparisons is used to determine each MIS respondent's beliefs about the relative importance of the separate values. This is accomplished by assigning each value a score, showing the number of times the person selects that value over any other value (Peffley, Knigge, Hurwitz 2001). As a simple example, consider three values: A, B, and C. Assume that these are presented to respondents in pairwise fashion, and that an arbitrary respondent indicates A is more important than B, A is also more important than C, and B is more important than C. For this person, A would receive a score of 2, since he/she chose it over two other values (B and C); B would be scored 1 (it was only chosen over C); and C would receive a 0, since it was not chosen over any other values. With the MIS data, there are four values, so the scores for each value can range from zero to three.

### The Distribution of Value Preferences

Table 1 shows the distribution of preference scores for each of the four values. The most striking feature of the table is the wide variability in the preferences. At the individual level, there does not seem to be general agreement about which values are most (or least) important. "Liberty" received the largest number of high ("3") scores but even so, only about 28% rated this value as more important than any other. At the other extreme, "social order" received the largest number of zero scores. But, again, only about one-fourth of the MIS respondents (27.44%) ranked this value in last place. Overall, it is fair to say that each of the four values shows up in every possible position within the value hierarchies of a substantial number of people.

The dot plot shown in Figure 1 summarizes succinctly the aggregate distribution of importance ratings for each value. Specifically, the horizontal position of the point plotted within each row corresponds to the mean importance score for that value; the solid bar around each point represents a 95% confidence interval. From the figure, it can be seen that economic security is considered (on average) to be the most important value of the four, by a statistically significant margin. Liberty receives the second-highest mean importance rating and it, in turn, significantly exceeds the mean scores for the remaining two values. Equality has a higher mean than social order, but the confidence intervals overlap, so this difference may simply be due to sampling error.

At the aggregate level, the American public does seem to exhibit a fairly clear ordering of the four values. They range from economic security as most important, through liberty and equality, down to social order as least important. But, any notion of a societal ranking of values must be qualified by the previously-noted fact that there is wide variability in the rankings from one person to the next.

### **Do Value Hierarchies Really Exist?**

Let us next consider the fundamental question motivating this study: Do people possess value hierarchies, in which they fully differentiate the relative importance of different values? The scores assigned to the separate values enable us to test for their existence. If individuals really do distinguish the importance of the values, then their pairwise choices should be *transitive*. That is, for any set of three values (again, say A, B, and C), choices on two of the pairs imply the choice that will be made on the third pair. So, if A is chosen over B, and B is chosen over C, then transitivity implies that A is also chosen over C. If an individual's choices among the values are fully transitive (i.e., the transitivity relation holds for all possible subsets of three values), then each of the values will receive a distinct score. Therefore, it is possible to assemble that person's pairwise choices into a complete rank-ordering of the four values.

Now, consider a person who really believes that the three hypothetical values are all equally important. Remember that the format of the MIS survey question requires respondents to select one value over the other—ties are not permitted (even though a few people insisted on this response in each pairwise comparison). Instead, the inability to rank the separate values would likely be manifested as

*intransitivity*: Sets of choices among three values in which the third choice is not implied by the other two choices. For example, A is chosen over B, B over C, and then C is chosen over A. Here, each value is only selected over a single other value, so all three receive scores of one. Such ties in the importance ratings should not occur if people really do maintain complete value hierarchies.

Non-ordered value preferences could be “translated” into intransitive value choices by the following process: Assume a hypothetical person who truly believes that values A, B, and C are equally important. But, this individual is presented with a survey question that requires him/her to indicate which value from a pair (say, A and B) is more important. Since tied choices are precluded by the question format, the person must still choose either A or B, or refuse to answer the question (a course of action that was taken by very few MIS respondents). Since he/she really feels the values are equally important, the empirical response is just “error,” which is conceptualized as a random answer— in effect, the result of a mental coin-flip.<sup>3</sup>

Intransitivity can occur when this “error” response accumulates across three pairwise value choices: Say, on A versus B, the error moves the person toward A; on B versus C, the person responds B (again, because of the random fluctuation, and not because of an innate preference); then finally, on A versus C, a third “flip of the mental coin” causes the person to answer C. Combining these three choices produces the intransitivity.

Of course, it is also likely that random errors will cause some individuals with non-ordered preferences to provide fully-ranked (i.e., transitive) choices. And, such sets of responses will be, at least on their face, indistinguishable from the responses provided by people who really do possess hierarchical value preferences. For this reason, the observed level of intransitivity will probably underestimate the actual number of people who experience difficulties (for whatever reason) making choices between pairs of values.

Table 2 provides the relevant information. The leftmost column shows the empirical intransitivities. Within this column, the first row provides the proportion of MIS respondents who exhibit any intransitivity within their pairwise choices across the four values, while the remaining rows give the

proportion of intransitive choices that occur for each distinct subset of three values (“value triads”). The middle column of entries in Table 2 shows 95% confidence intervals for each of these proportions.

Slightly more than one-fifth of the respondents (21.4%) show intransitive choices. But, these intransitivities are “spread across” the full set of values. The proportions of intransitive choices on each triad fall within a fairly narrow interval, from 6.0% for liberty, equality, and social order, to 9.9% for liberty, equality, and economic security. Thus, the overall amount of intransitivity is quite small, and it does not really seem to be concentrated within choices among any particular subset of the values.

The low levels of intransitivity revealed in Table 2 could suggest that most people do, in fact, maintain fully-ordered value preferences. However, the empirical results are also consistent with a very different interpretation: They may reflect a subset of the general public that experiences difficulties making choices among values (again, due to such factors as ambivalence or indifference).

While the “boundaries” of any such subset cannot be determined from the MIS data, probability theory can be used to determine the potential size of the subset that would exist under an explicit model of value choice behavior. To that end, let us assume two conditions. First, everyone with ordered value preferences makes fully transitive choices (i.e., there is no “noise” while moving from internal preferences to overt behavior). Second, the subset of people with non-ordered preferences behaves (in the aggregate) as if the probability of choosing one value over another is 0.5. These two conditions are a bit stringent. But, they do provide a standard for estimating the size of a subset that might be experiencing difficulties in choosing between values, based upon the observed number of intransitive choices.

The rightmost column of Table 2 shows the sizes of the subsets with non-ordered value choices that would exist under the preceding model.<sup>4</sup> Here, the first row represents the size of a subset that has difficulty with *all* of the choices; the remaining rows show the subsets that would have non-ordered preferences on each specific value triad. In each case, the data are consistent with a situation in which a sizable minority of the public cannot (or will not) choose between values. For example, the 21.4% of the MIS respondents who show *any* intransitivity could occur because one-third of the sample (34.24%) are ambivalent and/or indifferent about *all* pairs of values. At the same time, the 9.9% who give intransitive

choices for liberty, equality, and economic security may reflect a subset of 39.6% who maintain non-ordered preferences with respect to these three values. Of course, similar interpretations would apply for the remaining value triads. The major point here is that the low levels of intransitivity that actually occur in the MIS data could, in fact, signal a fairly large number of people (although still a minority within the overall public) who have difficulty making choices between values. Therefore, it is important to determine why these intransitivities exist.

### **EXPLAINING INTRANSITIVE VALUE CHOICES**

There are several factors that may cause problematic value preferences. How is it possible to distinguish between the different possibilities, since they all produce the same empirical manifestation (i.e., intransitive value choices)? The answer depends upon *where* the intransitivities occur within the general public.

#### **Possible Determinants of Intransitivity**

First, consider value ambivalence. If this is the source of the intransitivities, then the latter should occur most frequently with specific values— those with associated end-states that are especially difficult to reconcile with other values. “Liberty” and “equality” come immediately to mind in this regard (e.g., McClosky and Zaller 1984), but other value juxtapositions may also lead to problematic choices (e.g., “liberty” and “social order”). Furthermore, Feldman and Zaller (1992) argue that liberals should experience particular difficulty in reconciling their feelings toward the full spectrum of values inherent in American political culture. This should lead to more pronounced ambivalence and, presumably, more intransitive choices among liberals than among moderates or conservatives. Alvarez and Brehm (2002) also point out that, regardless of ideological orientation, people must *recognize* contradictions between values before they can experience truly ambivalent feelings about those values. And, this recognition is most likely among those individuals who are especially attuned to the nuances of the political world— the educated and politically knowledgeable strata within the general public.

Second, value indifference implies a subjective state in which one value is neither more nor less important than another. This is, in turn, most likely to occur among people who have given little thought

or consideration to the different values and with their implications— that is, those with low educational attainment and little interest in, or integration with, the political world. In other words, value indifference can be viewed as yet another way that political sophistication affects the clarity and consistency of individual orientations. Most of the work in this area has focused on outcomes like belief system organization, issue attitudes, and voting decisions (e.g., Sniderman, Brody, Tetlock 1991). But, sophistication could also influence value choices, as well (Zaller 1992; Maio and Olson 1998).

Third, empirical intransitivities may be due to measurement error. If so, then the contents of the overt survey responses would be dominated by random noise. And, given the stochastic nature of such error, the resultant intransitivities should be largely unpredictable.<sup>5</sup>

### **Testing Possible Determinants of Intransitive Choices**

In order to test the possible sources of intransitivity, we will focus on the value triads. There are four distinct subsets of three values that can be formed from the original set of four values. Hence, there are four triads (and, therefore, possible intransitivities) per person. The number of MIS respondents with no missing data on any of the variables (to be described below) is 1294. Therefore, the total number of “observations” for this part of the analysis is  $(4 \times 1294)$  or 5176.<sup>6</sup>

The dependent variable is a dichotomy, scored zero when choices across the three values in a triad are transitive and scored one for intransitive choices. Again, each individual’s responses to each value triad comprise a separate “observation.” Of course, the triads are not independent within each respondent and this will need to be taken into account during the statistical analysis.

Four independent variables are specifically included to test the ambivalence hypothesis. Three of these are dummy variables, scored one if a triad includes “liberty,” “equality,” or “economic security,” respectively. The fourth value, “social order,” is excluded in order to avoid perfect collinearity. If ambivalence is associated with particular values, then some of these dummy variables should be associated with a higher probability of intransitive choices. The fourth variable is an individual’s liberal-conservative ideology, measured on a standard seven-point scale, with larger values indicating more

conservative identification. According to Feldman and Zaller's (1992) argument, larger values of this variable should correspond to lower probabilities of intransitive value choices.

Ambivalence and indifference should produce different relationships between political sophistication and intransitive choices. The ambivalence hypothesis suggests that higher sophistication levels should lead to more intransitivity, while indifference implies that intransitive choices should be least likely among the most sophisticated strata of the public. In order to test these competing hypotheses, several variables are used as indicators of political sophistication. One of these is a political knowledge index, defined as the number of correct responses to five factual questions about American government and politics.<sup>7</sup> The recent literature has suggested that knowledge constitutes the most direct and valid measure of *political* sophistication. But, for present purposes, it seems useful to take a somewhat broader view of sophistication, taking into account variations in formal training and exposure to social environments that go beyond the explicitly political context covered by the knowledge index. Therefore, education is operationalized as two dummy variables for people with less than, or more than, a high school degree, respectively. And, family income is measured in ten-thousand dollar units.

Finally, two demographic characteristics are used as control variables. Race is operationalized as a dummy variable scored one for African Americans and zero for all others. Gender is a dummy variable, scored one for females and zero for males. These variables are included because the life experiences of blacks and women may lead them to think about certain values (e.g., equality and economic security) differently than whites and men, respectively.

## **Empirical Results**

The results for this part of the analysis are presented in Table 3. The entries in the table show the maximum likelihood coefficients, robust standard errors (clustered on the individual MIS respondents), and odds ratios for a logistic regression equation in which the probability of an intransitivity is expressed as a function of the independent variables described above. The chi-square value for the equation is significantly greater than zero, showing that the equation fits better than the null model (i.e., that the occurrence of intransitive choices is independent of the explanatory variables). But, this result is hardly

surprising, given the large number of observations. In fact, the overall equation fit is not very impressive: The pseudo- $R^2$  value is only 0.031. Poor model fit is often cause for concern and disappointment. In the present context, however, it is important because this is precisely what we would expect to find if the observed intransitivities are due (at least in part) to measurement error.

The existence of measurement error compromises the reliability of the empirical value choices. While this is somewhat troublesome, it should not be particularly surprising. After all, the MIS items only provide a single comparison for each value pair, while measurement theory holds that multiple observations of any phenomenon are necessary to enhance reliability (e.g., Traub 1994). Unfortunately, the data required for the latter (i.e., replicated choices among pairs of values) are simply not available in the MIS. At the same time, there is probably no reason for undue pessimism, since the observed levels of intransitivity (and, presumably, the attendant unreliability) are relatively low within the MIS data.

Turning to the explanatory variables, the empirical results provide no support for the ambivalence hypothesis. The coefficients for the three dummy variables representing specific values are all positive and statistically significant. This shows that intransitivities are more likely to occur when a triad includes liberty, equality, or economic security rather than social order. But, such a result is almost certainly due to the fact that Americans consider social order to be a less important value than any of the other three (as shown in Figure 1). Thus, the MIS respondents are unambiguously *less* likely to select social order over any of the other three. Such consistency would also reduce the potential for intransitivity in triads that involve social order and this is exactly what occurs in Table 3.

Note that the sizes of the coefficients for the three value dummies are all very close to each other. The ML estimates only range between 0.436 (for liberty) and 0.540 (for economic security), and the differences among the three coefficients are not statistically significant. In other words, the probability of intransitive choices is relatively constant across these three values. That should *not* be the case if ambivalence poses difficulties for choosing between particular subsets of values.

Next, consider the effect of individual liberal-conservative orientations. The coefficient on the ideology variable has the expected sign (negative). However, the estimate is quite small, at -0.061 and it

is not statistically different from zero. This shows that conservatives are no less (or more) likely than liberals to exhibit intransitive choices within value triads. And, that result is contrary to what we would expect if liberals really did experience particularly high levels of value ambivalence, relative to moderates or conservatives within the American public.

In contrast to the null results for the preceding ambivalence variables, Table 3 reveals clear evidence of sophistication effects: Higher levels of political knowledge, larger family incomes, and education beyond high school all correspond to significantly lower probabilities of intransitive choices among value triads while lower levels of education increase that probability. The statistical significance levels for the individual variables differ. But, the full set of sophistication variables shows a significant *net* effect, in the negative direction, on intransitive choices.<sup>8</sup> This result is directly opposite to what would be expected from the ambivalence hypothesis. Instead, intransitive value choices are distributed throughout the public in a way that is consistent with indifference, due to low levels of political sophistication.

Stated simply, sophistication enables people to see the connections across different ideas. In turn, it should clarify and enhance the consistency of politically-relevant judgments, decisions, and choices. This has been demonstrated repeatedly with respect to more abstract political orientations, such as issue attitudes and the use of ideological concepts. The present findings show that similar relationships exist among more immediate and seemingly-personal phenomena like value choices (Peffley, Knigge, Hurwitz 2001; Maio and Olson 1998).

### **VALUE CHOICES AND ISSUE ATTITUDES**

The theoretical importance of personal value choices is largely due to their hypothesized impact on subsequent aspects of human behavior. Values are within everyone's mental grasp, so they could be employed as a general evaluative standard for generating and organizing reactions to political issues (e.g., Peffley and Hurwitz 1985; Feldman 1988). And, this process is facilitated by the fact that the policy controversies confronting the public are, themselves, almost always phrased in terms of values (Stone

1997). For these reasons, the public's value *preferences* are expected to affect their positions on political issues.

However, problematic choices among values may affect the clarity of the process by which values are brought to bear upon issue attitudes. For example, the specific language employed to convey information about the opposing positions on an issue could well prime individuals to think about certain values and ignore others while working out their own responses (e.g., Ball-Rokeach and Loges 1996; Nelson et al. 1997; Barker 2002; Grant and Rudolph 2003). This would, in turn, be manifested as issue framing effects in the ways that value choices affect personal attitudes. Any such variability in the impact of values would be contrary to the broad and stable effects that are predicted by many value theorists (e.g., Rokeach 1973; Schwartz and Bilsky 1987; Schwartz 1996)

At the same time, the theory of value pluralism asserts that intra-personal conflicts among core values should lead an individual to more complex forms of reasoning (e.g., Tetlock 1986); in turn, this should inhibit the person's ability to express his/her policy stands in a single response to an issue question on a public opinion survey. Similarly, Alvarez and Brehm (e.g., 2002) argue that ambivalent feelings about values have an adverse effect on the degree to which people express crystallized, consistent feelings about issues, because a number of conflicting considerations come more readily to mind when people formulate their own responses to public policy controversies. Value pluralism or ambivalence would not necessarily determine an individual's stand on a policy issue. However, value conflict from these (or any other) sources should weaken the relationship between his/her value choices (or lack thereof) and subsequent issue attitudes.

The preceding hypotheses can be tested by performing a heteroskedastic regression analysis of value preferences and ambivalence on an important political issue: Government spending. Disagreements over the government's ability and/or willingness to fund programs cut to the heart of the basic distinction between liberal and conservative ideologies and modern partisan alignments (e.g., Jacoby 1994). Government spending also seems to lie at the core of predominant trends in macro-level public opinion—the characteristic that has come to be known as the “public mood” (Stimson 1999). And, citizen reactions

to the government spending issue differ markedly, depending upon whether the issue is presented in general or specific terms (Jacoby 2000). Thus, the political prominence and substantive importance of government spending, along with the presence of significant framing effects, make it important to understand public opinion on this issue.

Heteroskedastic regression uses a maximum likelihood approach to estimate simultaneously two functions (King 1989): First, the expected value of the dependent variable is specified to be a linear function of regressors created from the independent variables— just as in a traditional, OLS, regression. Here, the independent variables will be composed of relative value preferences along with other, more-or-less standard determinants of issue attitudes. These variables' effects also will be allowed to vary across different frames of the government spending issue. Second, the error variance is expressed as a function of another set of explanatory variables, containing measures of value conflict and political sophistication. The former should make political attitudes more difficult to predict and, thereby, increase the error variance in the regression equation. The latter should facilitate the “connections” between different political orientations, decreasing the average size of the squared errors.

### **Variables in the Model**

The dependent variable for the regression analysis consists of a two-item scale. At an early point in the MIS interview schedule, respondents were asked the following question:

Some people think that it is necessary to decrease government spending, even though it would mean cutting back on services. Other people think that it is necessary to increase government spending in order to provide more services. If you had to choose, do you think government spending on services should be decreased or increased?

Follow-up questions asked how much spending should be decreased/increased, and the resultant responses are combined to form a five-point scale, with successive integer scores ranging from 1 for “Spending should be increased a great deal” through 5 for “Spending should be decreased a great deal.”

At a later point in the interview schedule, respondents were asked another spending question (with follow-ups), in which the “targets” of government spending were specified more explicitly. Three different versions were presented to randomly-determined subsets of respondents: The first mentions

“social services for the needy,” the second mentions “social services for minority groups,” and the third mentions “spending on crime, the environment, and public education.”<sup>9</sup> Regardless of question version, the coding scheme for responses is identical to that used on the first spending question. This variation in question wording can be used to test the hypothesis that public support for government spending differs according to the perceived beneficiaries of that spending (Jacoby 2000).

Each person’s responses to the two spending items are combined to form a single scale. This increases the reliability of (and, concurrently, reduces the effect of random measurement error on) the dependent variable, while retaining any variability due to the wording manipulation in the survey questions.<sup>10</sup> At the aggregate level, issue framing effects do, in fact, exist in the MIS data. A one-way analysis of variance, examining government spending attitudes across the three subsets (i.e., with different spending targets specified in the second survey item) produces an *F* statistic of 41.18 (with 2 and 1346 *df*) and an observed probability value that is effectively zero (prob < 0.000). Furthermore, the pairwise contrasts are also significant: The MIS results show that Americans are most supportive of spending on crime, the environment, and public education, and least supportive of spending on social services for minorities.

There are several kinds of independent variables that are hypothesized to influence issue positions. First, there are two measures that tap value choices. One is the signed difference in the importance rating scores assigned to *liberty* and *equality*. These values are combined in this manner because the literature clearly emphasizes their ongoing conflict in American political culture (Lipset 1963; McClosky and Zaller 1984; Hochschild 1995). The resultant variable ranges from -3 (for a person who rates equality more important than, and liberty less important than, all other values) to +3 (for a person who rates liberty more important than, and equality less important than, all other values).

The other value measure is the importance rating score assigned to *economic security*. This value has obvious substantive relevance to the dependent variable. But, there is no clearcut contrast to the other two values mentioned previously; therefore, it is included separately. Again, this variable ranges from zero to three, with larger values indicating that economic security is increasingly regarded as more

important than the other values. It is important to emphasize that the preceding two variables tap not only feelings about particular values, but also relative assessments of each value, compared to the others.

Note that the fourth value, *social order*, is not included in the analysis. From a substantive perspective, this value has no immediate connection to the content of the government spending variable. And, empirically, feelings about social order are unrelated to spending attitudes. Therefore, this value's exclusion from the model specification should not be problematic.

The second set of independent variables consists of two symbolic predispositions: Party identification and ideological self-placement. A long line of previous research shows that these variables have strong, pervasive effects on the formation of issue attitudes (e.g., Sears 2001). Therefore, they provide a useful standard of comparison for the magnitude of any influence that personal value preferences may have on attitudes toward government spending. Here, party identification and ideology are both measured using the standard seven-point scales, coded so that larger values indicate more Republican identifications and conservative self-placements, respectively.

Third, there are two sociodemographic variables which represent background influences: Family income (in ten-thousand dollar units) and race (a dummy variable for African-Americans). These variables are included primarily as controls, to improve the overall model specification. Therefore, they are probably of somewhat less interest than the other variables, at least for present purposes.

Finally, there are several variables that take into account the question-wording manipulation in the dependent variable. Two dummy variables are used to distinguish among the subgroups: The first is coded one for those respondents who were presented with the "services for the needy" version of the second spending item, and zero for everyone else. The second dummy variable identifies respondents who received the "services for minority groups" form of the question. Respondents who were asked about spending on "crime, the environment, and public education" were left as the reference category (i.e., they were coded zero on both dummy variables). The two dummy variables are also used to create multiplicative terms with all of the other independent variables. This enables a direct test of the framing

hypothesis, that different presentations of the government spending issue evoke different values, predispositions, and orientations toward that issue.<sup>11</sup>

There are two variables that are hypothesized to affect the variance of the disturbances in the regression equation. First, value conflict is measured by taking the number of ties in the preference scores assigned to liberty, equality, and economic security. Recall that ties can only occur when values are involved in an intransitive triad. Therefore, they serve as an empirical indicator of problematic value choices. According to the value conflict hypothesis, this variable should have a positive effect on the size of the disturbance variance. Second, political sophistication is measured using the political knowledge scale that was introduced earlier. This variable should have a negative impact on the variance, according to the sophistication hypothesis.

### **Value Influences on Spending Attitudes**

Table 4 summarizes the results from the heteroskedastic regression analysis. The first panel of the table shows the conditional effects for the hypothesized influences on individual positions with respect to the government spending issue, across the three framing conditions.<sup>12</sup> The equation's overall fit is quite good, with an  $R^2$  of 0.325. And, the separate variables' effects make a great deal of sense, in substantive terms.

The most important result here is the significant positive impact of value choices between liberty and equality. This variable's influence does not change very much across the three frames of the spending issue: The conditional effects range from 0.096 (in the "needy" frame) to 0.123 (for the "minority groups" frame) and the differences between them are not statistically significant. Given the coding of the variables, this shows that people who believe liberty is more important than equality are also more likely to favor reductions in government spending. Conversely, those who value an egalitarian society apparently recognize the relevance of governmental spending and services for achieving this objective.

In contrast to the preceding results, individual choices with respect to economic security do not influence spending attitudes. The conditional effects for this variable are all very small (ranging only from -0.032 to 0.015) and they are never significantly different from zero. Apparently, the relative

importance that people attribute to economic security is just not a determining factor for attitudes on political issues even though the value, itself, is held in high regard within the general public. This, in turn, suggests that values are not applied to subsequent behavior in the broad, nearly “automatic” manner implied by some theories; instead, the impact of value choices seems to be quite selective.

Among the other independent variables in Table 4, ideology exhibits its typical, pronounced effect on issue attitudes. The impact of party identification is also quite strong, but only in the two frames that refer to needy and minority groups. With the latter (admittedly important) qualification, the two symbolic predispositions function precisely as expected: Democrats and liberals favor increased spending and services, while Republicans and conservatives prefer decreases. Finally, people with higher incomes are less supportive of government spending, while African Americans are more favorable toward it. All in all, the results for these variables are quite consistent with the vast literature on the sources of individual issue attitudes.

The first part of Table 4 also reveals the source of the framing effects that occur in government spending attitudes. Differing public reactions appear to be entirely due to the changing relevance of party identification across the varied presentations of the issue. The latter is the only variable with conditional effects that change significantly across the framing manipulation. The respective influences of the other variables are all constant—there are no significant frame-based differences whatsoever in the conditional effects. For present purposes, the most important aspect of this general result involves the variables measuring value choices. The latter do not show any sort of “qualified influence”—that is, effects that are present under certain issue frames but not others. And, for those variables that *do* impinge on spending attitudes (i.e., liberty and equality), the magnitude of the influence does not vary according to the precise presentation of the policy question.

The second panel of Table 4 shows the results for the influences on the error variance (or, more correctly, its logarithm). The  $R^2$  for this part of the model is, once again, very respectable, at 0.336. Thus, the regression equation’s fit to the data does covary systematically with at least one of the hypothesized explanatory variables.

The results for the specific variables' separate influences on the error variance are clearcut. Only political knowledge has a significant effect (MLE = -0.088). The coefficient for tied value rankings is small in magnitude (-0.027), it has the wrong sign (negative, rather than positive), and it is not significantly different from zero. This is important, because it reveals the lack of support in these data for the hypothesized impact of value conflict (whatever its source) on the attitude formation process. In contrast, the error variance only decreases reliably with increasing political knowledge, and this serves as further confirmation for the importance of political sophistication in facilitating the movement from general value choices to specific political attitudes.

Personal feelings about values clearly do affect individual opinions toward government spending. Apparently citizens can “translate” their choices among core values into stands on public policy issues. Furthermore, the clarity and/or effectiveness of this translation process is neither modified by varying issue frames nor diminished by non-ordered choices between separate values. These findings are even more significant because people make the connection entirely on their own; the values in question—liberty and equality—were not even mentioned in the question about government spending. This constitutes strong evidence that value choices should be regarded as a prominent influence on American public opinion.<sup>13</sup>

## CONCLUSIONS

This study makes several contributions regarding the role of personal value choices in Americans' orientations toward the political world. First, it provides information about the distribution of mass value preferences. Stated simply, there is extremely wide variability in personal judgments about value importance. From one perspective, this heterogeneity is not particularly surprising. People experience vastly different socialization experiences and patterns of social interaction; it would be incredible if this did *not* have some noticeable effect on individuals' feelings about desirable and undesirable states of existence— i.e., values.

But, from another perspective, the broad differences in value choices seem to be somewhat at odds with the studies that emphasize the lasting primacy of freedom and equality in American political

culture (e.g., Lipset 1963; McClosky and Zaller 1984). That may be true for elites and intellectuals, but it does not reflect the feelings of ordinary citizens. Their judgments contain a mixture of lofty principles (e.g., liberty is often ranked quite highly) and more immediate concerns (e.g., economic security is often the *most* important value).

Second, the results from this study demonstrate that most people do possess meaningful value *hierarchies*. There appears to be a great deal of individual-level coherence and consistency in public views about what is good and bad in everyday life and society. This finding is definitely not a foregone conclusion. The set of four values presented to the MIS survey respondents were selected precisely because of their prominence in American political culture. Therefore, many people could well find it impossible to make consistent choices between them. And yet, even taking several sources of uncertainty into account (i.e., not only sampling error, but also measurement error, and “slippage” in the translation from underlying preferences to empirical choices), a clear majority of the respondents exhibit consistently transitive judgments about the values’ relative importance for American society. Most citizens do seem to recognize that some values are more important than others, and they make the requisite choices between them.<sup>14</sup>

The preceding result simply would not occur if intra-individual value conflict was widespread throughout the mass public. There is no evidence that specific subsets of values engender particularly difficult choices for those who are confronted with them. Instead, the empirical intransitivities are spread fairly evenly across the value triads and throughout the MIS respondents. This, in turn, suggests that many of these apparent inconsistencies stem from an important, but relatively technical, source— measurement error in the survey items used to elicit value preferences. Beyond this, the systematic patterns that do exist indicate that intransitive choices occur most frequently among those people who are least interested in, or attentive to, the political world. In other words, it is indifference due to low levels of political sophistication and not substantive ambivalence that has a detrimental effect on individual abilities to rank one value as more or less important than another.

Third, this study shows that individuals' general value choices have direct relevance for understanding their issue attitudes. Once again, this is a conclusion that should not be taken for granted. While political scientists have frequently asserted that values influence attitudes (e.g., Kinder 1983; Sniderman 1993), the same authors also admit that direct empirical tests have not occurred very frequently. And, a number of researchers have pointed out that the existing evidence is, itself, somewhat ambiguous (e.g., Kristiansen and Hotte 1996; Maio and Olson 1998; Goren 2005). The results obtained here show that personal feelings about the relative importance of liberty and equality are strongly related to reactions toward government spending. This basic finding is particularly striking because it holds up across several specific presentations of the spending issue, *none* of which explicitly mention either of these two values. In this sense, values function in a manner similar to other symbolic predispositions or heuristic devices like party identification and liberal-conservative ideology. However, an important and fundamental distinction remains between them, because the latter two orientations possess much more overt political content than do the four values under investigation here.

But, one should not go too far with this line of thinking: Specifically, values do *not* seem to provide a general attitude formation routine for relatively unsophisticated citizens who are less attentive to ideological abstractions and other such political cues. For one thing, their overall impact is just not overwhelming. It is comparable to, but does not exceed, that of partisanship and ideology. At the same time, preferences regarding certain values— economic security, in the present case— are simply unrelated to political attitudes, despite their substantive relevance to the welfare concerns that undergird public reactions toward the issue of government spending. Finally, the clarity of individual value choices exhibits sophistication-based individual differences— just like a sizable number of other political orientations. For all of these reasons, analysts should be hesitant to grant core personal values any particular theoretical primacy within scholarly representations of political behavior.

In conclusion, this study provides firm empirical support for a number of ideas that have been widely-held, but seldom tested, in previous research efforts— especially, the existence of meaningful individual value hierarchies and the direct impact of value preferences on issue attitudes within the mass

public. At the same time, however, the analytic results present some serious challenges to previous work— particularly, the extreme variability in value choices, the apparent absence of widespread intra-individual value conflict, and the sensitivity of value preferences to levels of individual sophistication. It would, of course, be useful to extend this type of analysis in several directions. One obvious step would be to replicate the same value choices at the present time, eleven years or more after the original MIS. It would be particularly interesting to see how the public compares “liberty” against “economic security” and “social order” in the new uncertainties of the post-9/11 world. Some other possibilities for additional work include: Examining choices among larger sets of values; obtaining replicated value choices in order to reduce the effects of measurement error; attempting to manipulate value hierarchies through exposure to external stimuli; and assessing value influences on a wider variety of political issues. Thus, the present study only represents an initial effort to address a potentially vast subject area. But, the results so far confirm that value choices represent a critical element of individual reactions toward the political world.

## NOTES

1. The codebook and data for the 1994 Multi-Investigator Study are available on the University of California-Berkeley Survey Research Center web site: [http://ucdata.berkeley.edu/new\\_web/FTP/](http://ucdata.berkeley.edu/new_web/FTP/).
2. A possible problem with this approach is that the definition provided in the item may not correspond exactly with the popular conceptualization of the value under consideration. Here, that may be the case with the definition of equality, which seems to focus more directly on equality of outcomes, rather than the more commonly-accepted equality of opportunity (McClosky and Zaller 1984). There is simply no way to get around this with the MIS data. And, I would still argue that popular recognition of this value (along with the others) is widespread enough that interval comparisons remain valid representations of individual value choices. A more complete discussion of the equality definition used in the MIS is provided in a report that is available on the author's web site.
3. Over the long run, if the person were repeatedly asked about A versus B, then he/she should select each one about an equal number of times. But still, on any single choice, one of these values is chosen over the other.
4. The procedure for finding the size of the subset is as follows: If people really do not prefer any given value over another (due to ambivalence, indifference, or any other reason), then all outcomes on the value choices are equally likely.  $Prob_1$  is the probability of observing an intransitivity given equally-likely choices,  $Obs_1$  is the observed proportion of intransitive choices, and  $Sub$  is the desired quantity, the proportion of the public with problematic (i.e., non-ordered) value preferences. Given the conditions described in the text,  $Obs_1 = Sub \times Prob_1$ . Therefore,  $Sub = Obs_1 / Prob_1$ . In order to obtain the probability of an intransitivity,  $Prob_1$ , it is easiest to calculate the probability of transitive choices (assuming equally-probable outcomes) and subtract that from one. For choices among  $k$  stimuli:

$$Prob_1 = 1 - \frac{k!}{2^{\frac{k(k+1)}{2}}}$$

With  $k = 4$  (i.e., the number of values included in the MIS data), the preceding formula results in  $Prob_1 = 0.625$ . Accordingly, the observed proportion of MIS respondents who show any intransitivity across the four values (i.e., 21.4%) is consistent with a subset of 34.2% (i.e.,  $0.342 = 0.214 / 0.625$ ) who cannot make “real” choices among any of the values. With  $k = 3$  (i.e., the number of values in any given triad),  $Prob_1 = 0.250$ . So, for example, the observed proportion of MIS respondents who exhibit intransitive choices between liberty, equality, and economic security (9.9%) is consistent with a subset of 39.6% ( $0.396 = 0.099 / 0.250$ ) who are completely ambivalent and/or indifferent among these values (or cannot choose among them for some other reason). Similar calculations are carried out for the remaining three value triads to produce the values shown in the rightmost column of Table 2. I am very grateful to George Rabinowitz for his help with this problem.

5. Of course, there may also be nonrandom measurement errors. One possible source of systematic error in the MIS data is response set, due to the non-varied presentation of the value stimuli. In other words, “liberty” is always mentioned first in its three paired comparisons, while “equality” is mentioned before both “economic security” and “social order.” The possibility of systematic measurement error based upon stimulus order effects can never entirely be dismissed. Empirically, however, this does *not* appear to be much of a problem. Any such response set should inflate the number of times “liberty” and “equality” are chosen over other values. However, 52% of the MIS respondents chose “economic security” over “liberty.” Similarly, 62% chose “economic security” over “equality.” Thus, the marginal distributions do not seem to signal any serious bias in favor of the first-mentioned values in the paired comparisons.
6. A parallel analysis, using individual MIS respondents as observations, produces results that are identical to those presented in the next section. Full information about this supplemental analysis is provided in a report that is available on the author’s web site.
7. The questions asked: Which party had the most members in the House of Representatives; how much of a majority is required for the Senate to override a presidential veto; which political party is more conservative; who determines whether a law is constitutional; and which political office was held by

Al Gore. The political knowledge index is defined simply as the number of correct answers provided by each MIS respondent.

8. The null hypothesis is that a linear combination composed of the sum of the coefficients for knowledge, income, and higher education minus the coefficient for lower education levels is equal to zero. A two-sided test must be used because the ambivalence and indifference explanations make opposing predictions. Empirically, the linear combination of the coefficients is -0.800 with a standard error of 0.207. This produces a  $t$  statistic of -3.861 which would lead to rejection of the null hypothesis at any reasonable level of statistical significance.
9. The first variant of the second spending question was worded as follows: "Some people feel that it is necessary to decrease government spending, even if it would mean cutting back on services like food stamps, Medicaid, and other forms of assistance for the needy. Other people feel that it is necessary to increase government spending in order to provide more of these services. If you had to choose, do you think government spending on services like food stamps, Medicaid, and assistance for the needy should be decreased or increased?" The second variant was "Some people feel that it is necessary to decrease government spending, even if it would mean cutting back on services like food stamps, Medicaid, and other forms of assistance for minority groups. Other people feel that it is necessary to increase government spending in order to provide more of these services. If you had to choose, do you think government spending on services like food stamps, Medicaid, and assistance for minority groups should be decreased or increased?" The third variant was "Some people feel that it is necessary to decrease government spending, even if it would mean cutting back on programs like fighting crime, protecting the environment, and public education. Other people feel that it is necessary to increase government spending in order to provide more of these services. If you had to choose, do you think government spending on services like fighting crime, protecting the environment, and public education should be decreased or increased?" There was also another question-wording experiment built into this series of items. A randomly-selected half of the sample was given the questions worded as shown here. For the other half of the sample, the locations of the

words “decreased” and “increased” were switched around in the question. This manipulation produced no significant differences in the response distributions.

10. The reliability of this summary variable (Cronbach’s Alpha) is 0.59.
11. An alternative version of the issue framing hypothesis holds that individual value orientations are, themselves, affected by differing presentations of an issue that invokes those values. Unfortunately, this hypothesis cannot be tested with the MIS data because the wording manipulation in the government spending question occurred after the battery of value choices within the interview schedule. However, this should not cause any serious problems for the analysis. First, and as noted earlier, prior empirical evidence suggests that *relative* value choices are not affected by varied issue frames (Nelson et al. 1997). Second, a recent internet survey, conducted by Knowledge Networks, Inc. during Summer 2005 (and supported by the program for Time-Sharing Experiments in the Social Sciences), elicited value choices under varying conditions that primed particular values before the respondents reported their choices. The empirical results show that the mean importance scores do not change when a particular value is primed. This, in turn, suggests that value choices are relatively insensitive to conditions that emphasize particular values over others. A report discussing these results is available on the author’s web site (Jacoby 2006).
12. These conditional effects are calculated using the procedures laid out by Friedrich (1982). The maximum likelihood coefficient estimates and the variance-covariance matrix used to construct the conditional effects are provided in a report available on the author’s web site.
13. Space restrictions limit this portion of the analysis to a single issue. And, the use of government spending is justified because of that issue’s general salience in American politics. But, it is important to emphasize that similar conclusions (i.e., the impact of value choices on issue position and the lack of an effect for tied value choices on the error variance) would also be drawn from other issues. A report that replicates the analysis for three more issues from the MIS (women’s rights, affirmative action, and tolerance of nonconformist groups) is available on the author’s web site.

14. One lingering concern stems from the unique nature of the MIS, itself: Can the finding about transitivity and hierarchical structure in personal value choices be replicated with data obtained from other sources? Fortunately, the answer to this question is emphatically positive. Two recent internet surveys, conducted by Knowledge Networks, Inc. in 2002 and 2005, used different question formats to elicit respondents' choices among sets of values very similar to that employed in the present study. In the 2002 survey, respondents were presented with a list of six values (the four used here, plus "patriotism" and "morality") and asked to select the one they believed to be most important, followed by the next-most important, and so on, until only one value remained unchosen. Fully 98.13% of the 7,535, respondents provided fully-ranked sets of value choices. Such a high completion rate should not occur with this question series if people are experiencing widespread difficulties in making choices between values. The 2005 survey (which was supported by the program for Time-Sharing Experiments in the Social Sciences) obtained replicated pairwise choices among five values (the four used here, plus "morality). Taking the dominant choice for each pair (i.e., the value that was chosen on a majority of the comparisons), 87.52% of the 649 respondents provided fully transitive sets of choices across the full set of five values. Thus, the findings obtained from the MIS data do not appear to be idiosyncratic. A report discussing this additional evidence is available on the author's web site. The results from the 2002 and 2005 internet surveys are also covered in Jacoby and Sniderman (2006) and Jacoby (2006), respectively.

## REFERENCES

- Alvarez, R. Michael and John Brehm. (2002) *Hard Choices, Easy Answers*. Princeton, NJ: Princeton University Press.
- Alwin, Duane F. and Jon A. Krosnick. (1985) "The Measurement of Values in Surveys: A Comparison of Ratings and Rankings." *Public Opinion Quarterly* 49(4): 535-552.
- Ball-Rokeach, Sandra J. and William E. Loges. (1996) "Making Choices: Media Roles in the Construction of Value-Choices." In Clive Seligman, James M. Olson, Mark P. Zanna (Editors), *The Psychology of Values: The Ontario Symposium, Volume 8*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Barker, David C. (2002) *Rushed to Judgment: Talk Radio, Persuasion, and American Political Behavior*. New York: Columbia University Press.
- Converse, Philip E. (1964) "The Nature of Belief Systems in Mass Publics." In David Apter (Editor), *Ideology and Discontent*. New York: Free Press.
- Devine, Donald J. (1972) *The Political Culture of the United States*. Boston: Little, Brown.
- Easton, David and Jack Dennis. (1969) *Children in the Political System: Origins of Political Legitimacy*. New York: McGraw-Hill.
- Einhorn, Hillel J. and Robin M. Hogarth. (1981) "Behavioral Decision Theory: Processes of Judgment and Choice." *Annual Review of Psychology* 32: 53-88.
- Feldman, Stanley. (1988) "Structure and Consistency in Public Opinion: The Role of Core Beliefs and Values." *American Journal of Political Science* 32(2): 416-440.
- Feldman, Stanley. (2003) "Values, Ideology, and the Structure of Political Attitudes." In *Oxford Handbook of Political Psychology*. David O. Sears, Leonie Huddy, Robert Jervis (Editors). New York: Oxford University Press.
- Feldman, Stanley and Marco Steenbergen. (2001) "The Humanitarian Foundation of Public Support for Social Welfare." *American Journal of Political Science* 45(3): 658-677
- Feldman, Stanley and John Zaller. (1992) "The Political Culture of Ambivalence: Ideological Responses to the Welfare State." *American Journal of Political Science* 36(1): 268-307.
- Friedrich, Robert J. (1982) "In Defense of Multiplicative Terms in Multiple Regression Models." *American Journal of Political Science* 26(4): 797-833.
- Goren, Paul. (2005) "Party Identification and Core Political Attitudes." *American Journal of Political Science* 49(4): 881-896.
- Grant, J. Tobin and Thomas J. Rudolph. (2003) "Value Conflict, Group Affect, and the Issue of Campaign Finance." *American Journal of Political Science* 47(3): 453-469.

- Hochschild, Jennifer L. (1995) *Facing Up to the American Dream: Race, Class, and the Soul of the Nation*. Princeton, NJ: Princeton University Press.
- Jacoby, William G. (1994) "Public Attitudes Toward Government Spending." *American Journal of Political Science* 38(2): 336-361.
- Jacoby, William G. (2000) "Issue Framing and Public Opinion on Government Spending." *American Journal of Political Science* 44(4): 750-767.
- Jacoby, William G. (2006) "Testing for Hierarchical Structure and Priming Effects Among Individual Value Choices." Unpublished paper, available at <http://polisci.msu.edu/jacoby/>.
- Jacoby, William G. and Paul M. Sniderman. (2006) "The Structure of Value Choices in the American Public." Paper presented at the 2006 Annual Meetings of the Southern Political Science Association.
- Kinder, Donald R. (1983) "Diversity and Complexity in American Public Opinion." In *Political Science: The State of the Discipline*. Ada W. Finifter (Editor). Washington, DC: American Political Science Association.
- King, Gary. (1989) *Unifying Political Methodology*. Cambridge, UK: Cambridge University Press.
- Kristiansen, Connie M. and Alan M. Hote. (1996) "Morality and the Self: Implications for the When and How of Value-Attitude-Behavior Relations." In Clive Seligman, James M. Olson, Mark P. Zanna (Editors), *The Psychology of Values: The Ontario Symposium, Volume 8*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Kuklinski, James H. (2001) "Introduction: Political Values." In *Citizens and Politics: Perspectives from Political Psychology*. James H. Kuklinski (Editor). Cambridge, UK: Cambridge University Press.
- Lipset, Seymour Martin. (1963) *The First New Nation*. New York: Norton.
- Maio, Gregory R. and James M. Olson. (1998) "Values as Truisms: Evidence and Implications." *Journal of Personality and Social Psychology* 74(2): 294-311.
- McCann, James A. (1997) "Electoral Choices and Core Value Change: The 1992 Presidential Campaign." *American Journal of Political Science* 41(2): 564-583.
- McCarty, John A. and L. J. Shrum. (2000) "Measurement of Personal Values in Research." *Public Opinion Quarterly* 64(3): 271-298.
- McClosky, Herbert and John Zaller. (1984) *The American Ethos: Public Attitudes Toward Capitalism and Democracy*. Cambridge, MA: Harvard University Press.
- Nelson, Thomas E.; Rosalee A. Clawson; Zoe M. Oxley. (1997) "Media Framing of a Civil Liberties Conflict and Its Effect on Tolerance." *American Political Science Review* 91(3): 567-583.
- Peffley, Mark A. and Jon Hurwitz. (1985) "A Hierarchical Model of Attitude Constraint." *American Political Science Review* 79(3): 871-890.
- Peffley, Mark; Pia Knigge; Jon Hurwitz. (2001) "A Multiple Values Model of Political Tolerance." *Political Research Quarterly* 54(2): 379-406.

- Rokeach, Milton. (1973) *The Nature of Human Values*. New York: Free Press.
- Rossiter, Clinton. (1962) *Conservatism in America: The Thankless Persuasion*. New York: Vintage Books.
- Schuman, Howard and Stanley Presser. (1996) *Questions and Answers in Attitude Surveys: Experiments on Question Form, Wording, and Context*. Thousand Oaks, CA: Sage. (Originally published, 1981).
- Schwartz, Shalom H. (1992) "Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries." In Mark P. Zanna (Editor), *Advances in Experimental Social Psychology*. Orlando, FL: Academic Press.
- Schwartz, Shalom H. (1996) "Value Priorities and Behavior: Applying a Theory of Integrated Value Systems." In Clive Seligman, James M. Olson, Mark P. Zanna (Editors), *The Psychology of Values: The Ontario Symposium, Volume 8*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Schwartz, Shalom H. and Wolfgang Bilsky. (1987) "Toward a Universal Psychological Structure of Human Values." *Journal of Personality and Social Psychology* 53(3): 550-562.
- Sears, David O. (2001) "The Role of Affect in Symbolic Politics." In *Citizens and Politics: Perspectives from Political Psychology*. James H. Kuklinski (Editor). Cambridge, UK: Cambridge University Press.
- Sears, David O.; Leonie Huddy, Lynitta Schaffer. (1983) "NES Pilot Study of Values (Revised)." Ann Arbor, MI: National Election Studies Pilot Study Report, Number nes002249.
- Seligman, Clive and Albert N. Katz. (1996) "The Dynamics of Value Systems." In *The Psychology of Values: The Ontario Symposium, Volume 8*. Clive Seligman, James M. Olson, Mark P. Zanna (Editors). Mahwah, NJ: Lawrence Erlbaum Associates.
- Seligman, Clive; James M. Olson; Mark P. Zanna. (1996). *The Psychology of Values: The Ontario Symposium, Volume 8*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Sniderman, Paul M. (1993) "The New Look in Public Opinion Research." In *Political Science: The State of the Discipline II*. Ada W. Finifter (Editor). Washington, DC: American Political Science Association.
- Sniderman, Paul M.; Henry E. Brady; Philip E. Tetlock. (1994) "The Multi-Investigator Study." *Public Opinions* 1(1): 10-11.
- Sniderman, Paul M.; Richard A. Brody; Philip E. Tetlock. (1991) *Reasoning and Choice: Explorations in Political Psychology*. New York: Cambridge University Press.
- Spates, James L. (1983) "The Sociology of Values." *Annual Review of Sociology* 9: 27-49.
- Stimson, James A. (1999) *Public Opinion in America: Moods, Cycles, and Swings (Second Edition)*. Boulder, CO: Westview.
- Stone, Deborah. (1997) *Policy Paradox*. New York: W. W. Norton.

Tetlock, Philip E. (1986) "A Value Pluralism Model of Ideological Reasoning." *Journal of Personality and Social Psychology* 50(4): 819-827.

Traub, Ross E. (1994) *Reliability for the Social Sciences: Theory and Applications*. Newbury Park, CA: Sage.

Verplanken, Bas and Rob. W. Holland. (2002) "Motivated Decision Making: Effects of Activism and Self-Centrality on Values in Choices and Behavior." *Journal of Personality and Social Psychology* 82(3): 434-447.

Zaller, John. (1992) *The Nature and Origins of Mass Opinion*. Cambridge, UK: Cambridge University Press.

**Table 1:** The distribution of importance scores for each value.

		Value			
		Liberty	Equality	Economic Security	Social Order
Importance Score	Zero:	22.71%	20.71%	15.38%	27.44%
	One:	25.52%	32.10%	25.89%	28.33%
	Two:	23.89%	34.17%	33.36%	26.18%
	Three:	27.88%	13.02%	25.37%	18.05%

**Note:** Cell entries give the percentage of respondents with each importance rating for each value. The number of observations is 1352.

**Data Source:** 1994 Multi-Investigator Study.

**Table 2:** The distribution of intransitive value choices across subsets of three values.

Intransitive Value Choices	Observed Percentage of choices that are intransitive*	95% Confidence Interval for population percentage ( <i>Pct</i> ) of choices that are intransitive	Possible size of subset with non-ordered value preferences, given observed intransitivity**
All MIS respondents	21.4%	Prob( $5.5\% < Pct < 8.2\%$ ) = 0.95	34.2%
Liberty, equality, economic security	9.9%	Prob( $8.3\% < Pct < 11.5\%$ ) = 0.95	39.6%
Liberty, equality, social order	6.0%	Prob( $4.7\% < Pct < 7.3\%$ ) = 0.95	24.0%
Liberty, economic security, social order	6.7%	Prob( $5.4\% < Pct < 8.0\%$ ) = 0.95	26.8%
equality, economic security, social order	6.8%	Prob( $5.5\% < Pct < 8.1\%$ ) = 0.95	27.2%

\* For the first row, the cell entry in this column gives the percentage of MIS respondents who exhibited any intransitive sets of choices among the values. For all other rows, the entries give the percentage of intransitivities that occurred for that particular subset of three values.

\*\* These percentages are obtained using a model that assumes: (1) individuals with ordered “true” preferences always make transitive choices; and (2) individuals with non-ordered value preferences behave in accordance with a probability model of equally-likely choices. The exact procedure for calculating the percentages is explained in Note 7.

**Note:** The ordering of the values within each triad (in the leftmost column of the table) is arbitrary. In each case, the order in which the values are mentioned merely corresponds to the order in which the values were defined in the introduction to the battery of value choices in the MIS interview schedule.

**Data Source:** 1994 Multi-Investigator Study. The number of observations is 1352.

**Table 3:** Logistic regression showing influences on the probability that choices among three values will be intransitive.

	ML Coefficient Estimate (Standard Error in parentheses)	Odds Ratio
<i>Value Ambivalence:</i>		
Value subset includes "Liberty"	0.436* (0.144)	1.546
Value subset includes "Equality"	0.448* (0.139)	1.566
Value subset includes "Economic security"	0.540* (0.136)	1.717
Liberal-conservative identification	-0.016 (0.038)	0.940
<i>Political Sophistication:</i>		
Political knowledge	-0.091* (0.049)	0.913
Family income	-0.055* (0.028)	0.947
Less than high school education	0.141 (0.206)	1.151
Education beyond high school	-0.513* (0.146)	0.599
<i>Control Variables:</i>		
African American	-0.169 (0.217)	0.845
Female respondent	-0.131 (0.126)	0.877
Constant	-2.504	
Likelihood-ratio Chi-square (10 <i>df</i> )	72.55	
Probability for Chi-Square	0.000	
Pseudo- R <sup>2</sup> value	0.031	

\* Coefficient is statistically smaller than zero, 0.05 level, directional hypothesis test.

**Data Source:** 1994 Multi-Investigator Study. The units of analysis are sets of three values per survey respondent, so the number of observations is 5176.

**Table 4:** Heteroskedastic regression showing influences on attitudes toward government spending.

A. Factors affecting each respondent's *position* on the government spending issue.

	Issue Frame			Observed probability for difference between coefficients
	Spending on Services for the Needy	Spending on Services for Minority Groups	Spending on crime, the environment, and public education	
<i>Values</i>				
Differential Importance of Liberty and Equality	0.096* (0.029)	0.123* (0.028)	0.106* (0.027)	0.788
Importance Ranking for Economic Security	-0.032 (0.048)	0.015 (0.044)	0.000 (0.043)	0.760
<i>Symbolic Predispositions</i>				
Party Identification	0.144* (0.042)	0.124* (0.043)	0.058 (0.042)	0.031**
Ideological Self-Placement	0.127* (0.029)	0.152* (0.042)	0.124* (0.035)	0.660
<i>Demographic Factors</i>				
Family Income	0.034* (0.017)	0.021 (0.017)	0.018 (0.016)	0.771
African-American	-0.608* (0.160)	-0.368* (0.178)	-0.521* (0.160)	0.602
Intercept	2.169	2.180	2.036	0.750
Likelihood ratio $\chi^2$	513.518			
$\chi^2$ Probability (22 <i>df</i> )	0.000			
$R^2$	0.325			

\* Coefficient is statistically different from zero at the 0.05 level (directional test).

\*\* Chi-square test of the null hypothesis that conditional effects are identical across the framing conditions is rejected at the 0.05 level.

**Note:** Cell entries are conditional effects, calculated from the maximum likelihood coefficient estimates provided in the Appendix. Standard errors (in parentheses) are obtained using procedures described by Friedrich (1982). Data source is the 1994 Multi-Investigator Study.

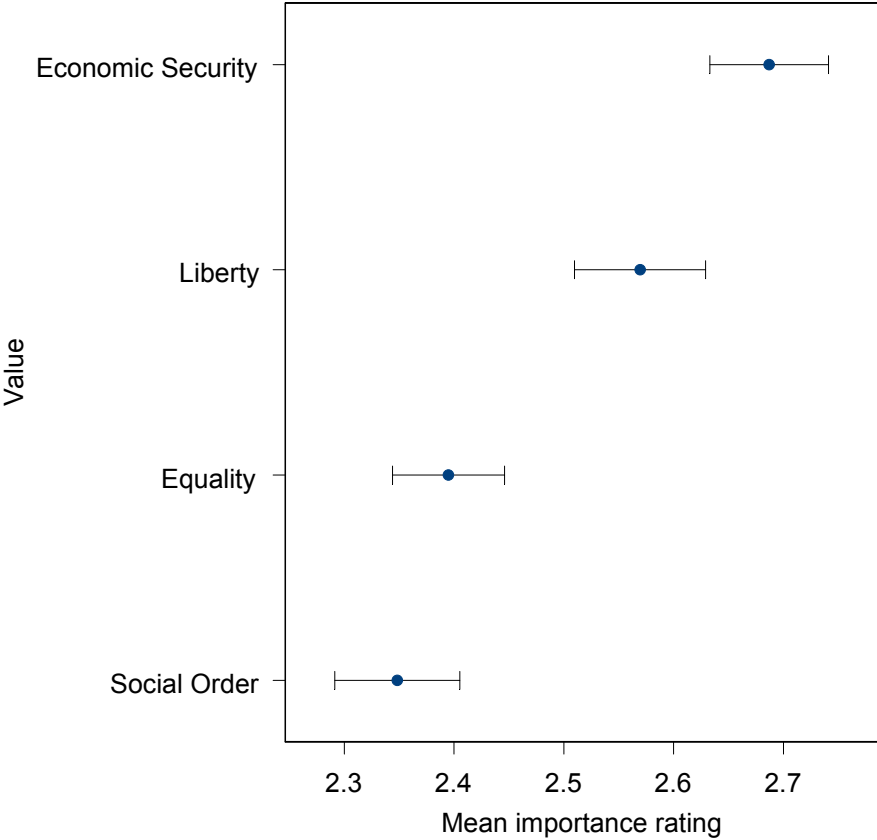
**Table 4:** Heteroskedastic regression showing influences on attitudes toward government spending (*Continued*).

B. Factors affecting the variance of the regression error term (specifically, the log of the error variance is specified to be a linear function of the variables included in the following table).

	Maximum Likelihood Regression Coefficient	Standard Error
<i>Value Ambivalence</i>		
Number of Tied Scores for Liberty, Equality, and Economic Security	-0.027	0.055
<i>Political Sophistication</i>		
Political Knowledge	-0.088*	0.030
Intercept	0.117	
$R^2$ for predicting error variance	0.336	

\* Coefficient is statistically different from zero at the 0.05 level, directional test.

**Figure 1:** Mean importance ratings for each value.



**Note:** The plotted points correspond to the mean importance rating assigned to each of the values, on a scale ranging from a minimum of zero to a maximum of three. The horizontal error bars show 95% confidence intervals for each of the means. Nonoverlapping confidence intervals imply that the means are reliably different from each other; that is, their difference is probably *not* merely due to sampling error.

**Data Source:** 1994 Multi-Investigator Study.