

Issue Preferences and Measurement Error

Stephen Ansolabehere
Department of Political Science
Massachusetts Institute of Technology

Jonathan Rodden
Department of Political Science
Massachusetts Institute of Technology

James M. Snyder, Jr.
Departments of Political Science and Economics
Massachusetts Institute of Technology

January 2006

Abstract

We show that averaging a large number of survey items on the same broadly-defined issue area – *e.g.*, government involvement in the economy, or moral issues – eliminates a large amount of measurement error and reveals issue preferences that are well structured. Averaging produces issues scales that are stable over time, and with enough items, these scales are often as stable as party identification. The scales also exhibit within-survey stability when we construct scales made from disjoint subsets of survey items. Moreover, this intertemporal and within-survey stability increases steadily, and in a manner consistent with a standard common measurement error model, as the number of survey items used increases. Also, when we estimate Converse’s “black-white” model, we find that at most 20-25 percent of respondents can be classified as “pure guessers,” and 75-80 percent have stable attitudes over issue areas, the reverse of Converse’s conclusion. Finally, in regressions predicting presidential vote choice, the issue scales appear to have much more explanatory power – relatively large coefficients and much larger t-values – than any of the individual survey items used in constructing the scales.

1. Introduction

Classic theories of democracy as well as contemporary theories of voting behavior and political representation hold that voters assess politicians on the basis of their positions on issues of the day (Downs, 1957; Key, 1966). Candidates and parties announce positions on issues in order to win votes, and voters choose the alternatives that best represent their interests on those issues. Legislators and executives who are out of step with their constituents are voted out of office.¹ These assumptions undergird centuries of democratic theory and decades of spatial modelling.

This portrait of electoral politics, however, runs counter to six decades of survey research. Converse (1964) issued the most stunning and most frequently cited critique. He found that voters exhibit little consistency in their attitudes over time and little ideological constraint from one issue to the next.² Accordingly, the conventional wisdom portrayed in most American politics textbooks is that the vast majority of American voters do not have coherent issue preferences or even attitudes.³ In his comprehensive literature review, Kinder (1998, p. 796) wrote: “Precious few Americans make sophisticated use of political abstractions. Most are mystified by or at least indifferent to standard ideological concepts, and not many express consistently liberal, conservative, or centrist positions on government policy.”

Largely as a consequence of this survey research, the conventional wisdom also holds that public policy issues have little independent impact on their citizens’ voting decisions. Most research using individual-level survey data over the past several decades echoes the findings of the *American Voter*: voters rely on their party identification and impressions about candidate image when deciding how to vote, and ideology or opinions on specific policies play a modest role at best. These findings are recounted in many textbooks on

¹See Erikson and Wright (1993), Jacobson (1993), Ansolabehere, Snyder and Stewart (2001), and Canes-Wrone, Brady and Cogan (2002).

²See also Converse (1970) and Converse and Markus (1979).

³See, for example, Fiorina and Peterson (1998, pages 144-152). Citing Converse and subsequent research, they echo the conclusion that individuals lack firm and connected policy preferences. Instead, they interpret the survey data as meaning that the American public is “pragmatic.”

American politics and elections.⁴

Yet an undercurrent of survey research, at least since the 1980s, argues that it is possible to identify “core values” or “predispositions” that are coherent and stable (McClosky and Zaller, 1984; Feldman, 1988; Zaller, 1992).⁵ When issues are framed in terms of such core values, survey respondents readily make sense of the choices at hand (Sniderman and Piazza, 1993). Further research shows that scaled values of survey responses have considerable traction in predicting party identification, candidate evaluations and vote choice.⁶ Adding to the puzzle, averaging across large numbers of individuals produces aggregate public opinion on issues that is quite stable over time, and strongly associated with public policy outcomes.⁷

One natural explanation for this pattern of findings is that the responses to individual issue questions in surveys are plagued with large amounts of measurement error. Achen (1975) showed that measurement error in survey items is sufficient to explain the low correlations of individuals’ issue preferences over time and the apparent lack of constraint. The correlations observed by Converse are easily reconciled with a model in which there is a high degree of measurement error and a high degree of stability in preferences.⁸ Mysteriously, however, this is not a dominant idea, at least not in the American context. We think it should be.

In this paper, we show that there is a large amount of measurement error in the responses to typical survey questions on policy issues, and we provide a method for reducing the effects of this error. Our approach uses multiple measures. First, multiple measures allow us to

⁴For example, Polsby and Wildavsky (2000, pages 15-17) write: “By the time we get down to those who know and care about and can discriminate between party positions on issues, we usually have a small proportion of the electorate. The proportion of ideologically sophisticated voters appears to be no larger than 30 percent... So, while candidates matter sometimes, and issues matter sometimes, and both are capable of affecting who wins, for most voters party matters almost all the time.”

⁵This view even more prominent in the study of European public opinion. See, for example, Heath, Evans, and Martin (1994).

⁶Carmines and Stimson (1980), Feldman (1988), Zaller and Feldman (1992), Layman (1997), Abramowitz and Saunders (1998), Bartels (2005), Treier and Hillygus (2005), and Ansolabehere, Rodden and Snyder (2006). A related issue is that variation in attitude strength may account for some variation in the degree of issue voting. We will not discuss this here. See Miller and Peterson (2004) for a recent survey.

⁷Page and Shapiro (1982, 1992), Carmines and Stimson (1989), Stimson (1991), Erikson, Wright, and McIver (1993), and Erikson, MacKuen and Stimson (2002).

⁸Also see Erikson (1978, 1979).

estimate the relative amounts of signal and noise in survey items. Second, constructing scores by averaging several items together – either by taking the simple arithmetic mean or by using factor analysis – yields much better estimates of respondents’ underlying issue preferences. Averaging multiple items reduces the variance of the measurement error at roughly the rate of one over the number of items used. The scores can then be used to study the stability of latent preferences and the extent of issue voting. This technique is widely used in political science to construct legislative roll call voting scores, and in psychometrics to construct test scores. Multiple measures also improve identification by providing information about different “cut points” along an underlying issue dimension (*e.g.*, Snyder, 1992).⁹

We analyze the American National Election Study panels, and a new MIT survey conducted in 2005, and find the following.¹⁰

First, issue scales are much more stable than answers to any given item. On average, the over-time correlations of individual questions is only about .45. The over-time correlations between issue scores range from .62 to .84, depending on the underlying issue and the number of items. For issue scales constructed with 15 or more questions the intertemporal correlations are .76 and higher, rivaling the stability of party identification (about .79).

Second, the average issue positions based on disjoint subsets of questions within a survey

⁹Others have had similar ideas before us. Most importantly, a large number of papers use LISREL to estimate structural models that explicitly incorporate measurement error and use multiple survey items to help identify various latent variables. Virtually all of these studies conclude that (i) the amount of measurement error in most survey items is large, and (ii) after correcting for this, the latent variables are usually highly stable over time. The list of papers that do this is impressive, including Judd and Milburn (1980), Judd, Krosnick, and Milburn (1981), Jackson (1983), Norpoth and Lodge (1985), Hurwitz and Peffley (1987), Layman and Carsey (2002), Goren (2004), and Moskowitz and Jenkins (2004). For some reason, however, these papers seem not to have had as broad or deep of an impact as they should have. In particular, as Kinder’s (1998) survey attests, they have evidently not persuaded the bulk of the survey research field that measurement error explains much of the lack of constraint or stability. The harsh critiques by Converse (1980), Martin (1981), Luskin (1987) and others may be one reason for this. Another possibility is that the use of LISREL obscures more than it reveals. The authors of these papers are interested in exploring or comparing complex structural models, and using the power of LISREL to estimate models with many layers and parameters. The simple idea that multiple measures can significantly reduce measurement error may get lost in the process. Instead, skeptical readers see an unintelligible black box, and are left with the impressions that the findings have somehow been manufactured by technique.

¹⁰We have also checked that similar results hold in the General Social Survey, although we do not report these here.

are much more highly correlated than the individual pairs of items used. The average pairwise correlation among individual items is just .22, while the average correlations between scales based on disjoint subsets of half the questions is .73.

Third, increasing the number of items used in constructing an issue scale increases intertemporal stability and cross-sectional stability approximately at a rate of one over the number of questions. This is precisely what the model of common measurement error predicts.

Fourth, when we estimate the parameters of Converse's (1964) "black-white" model we find that 75-80% of respondents are "sophisticated" and only 20-25% are "guessers." This is exactly the opposite of Converse (1964), who estimated that less than 20% of individuals are sophisticated.

Finally, using scales instead of individual survey items dramatically changes the apparent importance of issues on voting in U.S. presidential elections. The estimated coefficients on economic and moral issue scales are large and highly significant statistically, and their combined effect rivals that of party identification.

Thus, correcting for measurement error leads to a radically different picture of citizens' issue preferences than that presented by Converse (1964) and much subsequent research. Our results encourage a fresh look at the role of issues in U.S. elections. Once measurement error is reduced, we can firmly reject the notion that the American voter holds no coherent or stable attitudes, or that issue positions play only a sporadic cameo role in vote choice. As a result, much of the tension between survey research and spatial models of elections is relieved, along with some of the normative concerns for democratic theory raised by Converse and *The American Voter*.

2. The Measurement Error Problem in Theory

Theoretical models of measurement errors in surveys treat responses to individual questions, or items, as consisting of the true attitude plus random error. The standard model

assumes that measurement error is inherent in the instrument or question and has the same structure throughout the population. Measurement error, then, originates from vague or confusing questions asked in the survey. This is the approach taken by Achen (1975) and in most of the literature on measurement error in statistics. In this section we consider the consequences of such error for correlations used to measure stability of attitudes and for regressions used to estimate the effects of issues on voting preferences. We also consider the possibility of heterogeneous measurement error, especially Converse's (1964) black-white model in which some people answer survey questions exactly right (without error) and others answer completely at random (entirely measurement error).

2.1. A Standard Model of Common Measurement Error

Consider, first, the effects of measurement error on the correlation between two survey questions. In the case of ideological constraint, the questions are two different items from within the same survey. In the case of preference stability, the questions are the same item asked of an individual at two different time periods.

Suppose there are n dimensions, X_1, \dots, X_n , corresponding to n different issues. Let ρ_{X_i, X_j} be the correlation between any pair of issues i and j . The lack of ideological constraint may take two distinct forms. One manifestation is that people have preferences on each dimension but the issues are unrelated. If there is no ideological constraint, then any survey item that taps a given dimension will be uncorrelated with any item that taps a different dimension. A second notion holds that most people have no attitudes or opinions at all on most issues; their answers are just noise. Both notions imply that ρ_{X_i, X_j} will be near zero.

Contrast this depiction with a high degree of constraint, in which only one ideological dimension underlies most issues preferences. In this case, one can think of survey items as different alternatives along a single dimension or line, X . For example, X may be preferences on economic redistribution, and individual questions ask about particular redistributive poli-

cies, such as government guaranteed jobs, minimum wages, or the alternative minimum tax, which are points along the dimension. In this case the true correlation between any two issues i and j will be quite high; 1, if there is a single dimension.¹¹

Survey questions used to measure voters' preferences on issues, however, are imperfect. They are subject to random error because of format and survey context, errors made by respondents, and so on. This measurement error biases correlations among true attitudes toward zero.

Consider the following population model, analyzed by Lord and Novick (1968) and many others.¹² Let W_i be the observed response on item i , $1 = 1, 2$. Assume $W_i = X_i + e_i$, where X_i is the true attitude on issue i , and e_i is a random error term with $E[e_i] = 0$ and $Var(e_i) = E[e_i^2] = \sigma_{e_i}^2$. Also, make the usual assumptions that the measurement error in each item is uncorrelated with the true value of the item itself, uncorrelated with the true value of the other item, and uncorrelated with the measurement error in the other item; *i.e.*, $E[X_i e_j] = 0$ for $i = 1, 2$ and $j = 1, 2$, and $E[e_1 e_2] = 0$. Finally, let $Var(W_i) = \sigma_{W_i}^2$ and $Var(X_i) = \sigma_{X_i}^2$ for $i = 1, 2$.

The square of the correlation coefficient between items 1 and 2 is then

$$\begin{aligned} \rho_{W_1, W_2}^2 &= \frac{Cov(W_1, W_2)^2}{\sigma_{W_1}^2 \sigma_{W_2}^2} \\ &= \frac{Cov(X_1, X_2)^2}{(\sigma_{X_1}^2 + \sigma_{e_1}^2)(\sigma_{X_2}^2 + \sigma_{e_2}^2)} \\ &= \rho_{X_1, X_2}^2 \frac{\sigma_{X_1}^2 \sigma_{X_2}^2}{(\sigma_{X_1}^2 + \sigma_{e_1}^2)(\sigma_{X_2}^2 + \sigma_{e_2}^2)} \\ &< \rho_{X_1, X_2}^2 . \end{aligned}$$

So, the square of the correlation between W_1 and W_2 is biased toward zero relative to the

¹¹Following the literature on legislative roll call voting, one can formalize issue voting using a spatial model. Assume there is a single issue dimension, as would arise under strong ideological constraint. Let X be the issue scale, θ be the individual's ideal policy, and Q be the status quo. The extent to which a survey respondent prefers any point along X to Q is the distance of the respondent's ideal point from the point X relative to the status quo, *i.e.*, $d = -(X - \theta)^2 + (Q - \theta)^2$. Hence, each question asks about a particular distance: $d_i = -(X_i - \theta)^2 + (Q - \theta)^2$. The distance can be thought of as the respondents true attitude, under the assumption of strong ideological constraint. We may write this, further, as $d_i = -X_i^2 + Q^2 + 2(X_i - Q)\theta$.

¹²See, especially, Wiley and Wiley (1970) and Achen (1975).

square of the correlation between the true attitudes. The amount of bias depends on the variance in X 's relative to the variance in e 's; *i.e.*, the signal to noise ratio. The higher the ratio of signal to noise, the closer the observed correlation to the true correlation.

Under a strong version of ideological constraint, where there is a single latent dimension, $W_i = X + e_i$ for $i = 1, 2$. In this case, $\sigma_{X_1}^2 = \sigma_{X_2}^2 = \sigma_X^2$ and $\rho_{X_1, X_2} = 1$, so

$$\rho_{W_1, W_2}^2 = \frac{1}{(1 + \sigma_{e_1}^2/\sigma_X^2)(1 + \sigma_{e_2}^2/\sigma_X^2)} < 1 .$$

A similar result holds for the stability of an individual's expressed preference on a single issue over time. In panel surveys, an individual's preferences on any given issue i may be measured at different points in time. Suppose the individual's true preference on issue i at time t is X_{it} . Because we focus only on time variation we can drop the subscript i . At time t , the observed survey responses are given by $W_t = X_t + e_t$. Consider two periods, $t = 1, 2$. If preferences are perfectly stable over time, then $W_t = X + e_t$, and again

$$\rho_{W_1, W_2}^2 = \frac{1}{(1 + \sigma_{e_1}^2/\sigma_X^2)(1 + \sigma_{e_2}^2/\sigma_X^2)} < 1 .$$

Perhaps the most damaging evidence Converse mustered against ideological thinking among the American electorate takes this form. Respondents answers to the same survey questions on fundamental issues of race, government involvement in the economy, and foreign affairs exhibited correlations between 1956 and 1958 or between 1958 and 1960 in the range of .2 to .45.

Achen (1975) studied the stability of true attitudes and the amount of measurement error in the individual items. He concluded that the low correlations that Converse found stem from the large amount of measurement error in the survey items in the American National Election Study (ANES) of 1956-1960. Achen concluded that the true correlations in items over time was in the neighborhood of .7, rather than .3. Although Achen did not analyze the degree of constraint, the large amount of measurement error found in the analysis of stability suggests that there may be a substantial amount of correlation across issues as well as over time.

2.2. Using Multiple Measures to Reduce Measurement Error

Suppose we construct “issue scales” by averaging or factor analyzing multiple survey items that all tap the same underlying issue dimension. This can, in principal, dramatically reduce measurement error. To the extent it does, the correlation between scales will generally be closer to the correlation between the true preferences on the issues than the correlation between any two individual items.

To see this, suppose we have two sets of items, each with K elements, $\{W_{11}, W_{12}, \dots, W_{1K}\}$ and $\{W_{21}, W_{22}, \dots, W_{2K}\}$. These might be K repeated questions in a panel at periods 1 and 2, or two distinct sets of questions in the same survey. Suppose each item in the first set taps issue 1 and each item in the second set taps issue 2. That is, suppose $W_{ik} = X_i + e_{ik}$, for each $i = 1, 2$ and $k = 1, \dots, K$, where X_i is the true attitude on issue i , and e_{ik} is a random error term with $E[e_{ik}] = 0$ and $Var(e_{ik}) = E[e_{ik}^2] = \sigma_{e_{ik}}^2$. As above, assume that the measurement error in each item is uncorrelated with the true value of the item itself, uncorrelated with the true values of all other items, and uncorrelated with the measurement error in all other items; *i.e.*, $E[X_i e_{jk}] = 0$ for $i = 1, 2$, $j = 1, 2$, and $k = 1, \dots, K$, and $E[e_{ik} e_{jl}] = 0$ unless $i = j$ and $k = l$. Finally, let $Var(X_i) = \sigma_{X_i}^2$ for $i = 1, 2$.

Consider the variables made by averaging the individual items:

$$\bar{W}_1 = \frac{1}{K} \sum_{k=1}^K W_{1k} \quad \text{and} \quad \bar{W}_2 = \frac{1}{K} \sum_{k=1}^K W_{2k} .$$

Let $\bar{\sigma}_{e_1}^2 = \frac{1}{K} \sum_{k=1}^K \sigma_{e_{1k}}^2$ and $\bar{\sigma}_{e_2}^2 = \frac{1}{K} \sum_{k=1}^K \sigma_{e_{2k}}^2$ be the average measurement error variance among the items in sets 1 and 2, respectively. It is straightforward to show that:

$$\sigma_{\bar{W}_1}^2 = \sigma_{X_1}^2 + \bar{\sigma}_{e_1}^2 \frac{1}{K} \tag{1}$$

$$\sigma_{\bar{W}_2}^2 = \sigma_{X_2}^2 + \bar{\sigma}_{e_2}^2 \frac{1}{K} \tag{2}$$

$$Cov(\bar{W}_1, \bar{W}_2) = Cov(X_1, X_2) \tag{3}$$

$$\rho_{\bar{W}_1, \bar{W}_2}^2 = \rho_{X_1, X_2}^2 \frac{\sigma_{X_1}^2 \sigma_{X_2}^2}{[\sigma_{X_1}^2 + (\bar{\sigma}_{e_1}^2 / K)][\sigma_{X_2}^2 + (\bar{\sigma}_{e_2}^2 / K)]} \tag{4}$$

As K becomes large, $\bar{\sigma}_u^2/K$ becomes small, and $\rho_{\bar{W}_1, \bar{W}_2}^2$ increases towards ρ_{X_1, X_2}^2 . If $K = 10$, then the contribution of measurement error to the correlation coefficient is roughly one-tenth as large as when a single item is used. Note also that for each $i = 1, 2$, $\sigma_{\bar{W}_i}^2$ decreases towards $\sigma_{X_i}^2$ as K becomes large. However, that $Cov(\bar{W}_1, \bar{W}_2)$ is independent of K .¹³

How many items are needed to make a noticeable improvement in $\rho_{\bar{W}_1, \bar{W}_2}$ depends on the ratio of signal to noise in the items. Clearly, when there is less measurement error in each item, fewer items are required to achieve the same approximation to the true values. Achen's analysis suggests that the variance in the measurement error in the ANES is approximately equal to the variance of the true issue scales. If that is approximately right, then the true correlation is approximately equal to $(K+1)/K$ times the observed correlation (between the average measures).

Equations (1) and (2) also reveal conditions under which adding additional items improves matters and when it does not. Suppose we begin with K items and consider adding item $K+1$. Also, suppose our goal is to minimize $E[\bar{W}_i - X_i]^2 = \bar{\sigma}_{e_i}^2/K = (\sum_{k=1}^K \sigma_{e_{ik}}^2)/K^2$. Adding item $K+1$ changes the maximand to $(\sigma_{e_{i, k+1}}^2 + \sum_{k=1}^K \sigma_{e_{ik}}^2)/(K+1)^2$. This is less than $(\sum_{k=1}^K \sigma_{e_{ik}}^2)/K^2$ if and only if $\sigma_{e_{i, k+1}}^2 < [(2K+1)/K] \bar{\sigma}_{e_i}^2$. Thus, for large values of K , we should add another item if the variance of the measurement error in the item is less than twice the average measurement error in the existing set of items.

Equations (1), (2) and (4) also suggest a simple way to estimate many of the relevant parameters of the model – the various σ 's and ρ_{X_1, X_2} . Invert (4) and rearrange to get:

$$\frac{1}{\rho_{\bar{W}_1, \bar{W}_2}^2} = \frac{1}{\rho_{X_1, X_2}^2} + \left[\frac{\sigma_{X_1}^2 \bar{\sigma}_{e_2}^2 + \sigma_{X_2}^2 \bar{\sigma}_{e_1}^2}{\rho_{X_1, X_2}^2 \sigma_{X_1}^2 \sigma_{X_2}^2} \right] \frac{1}{K} + \left[\frac{\bar{\sigma}_{e_1}^2 \bar{\sigma}_{e_2}^2}{\rho_{X_1, X_2}^2 \sigma_{X_1}^2 \sigma_{X_2}^2} \right] \frac{1}{K^2} \quad (5)$$

We can treat equations (1), (2) and (5) as linear regression equations, where the regressor

¹³In our empirical analysis we find evidence that is violated. Instead, $Cov(\bar{W}_1, \bar{W}_2)$ declines with K across panels, although much less steeply than $\sigma_{\bar{W}_1}^2$ or $\sigma_{\bar{W}_2}^2$. This suggests that the random error terms are correlated over time. Consider, for example, a simple model with $\rho_{e_{1k}, e_{2k}} = \rho_e$ for all $k = 1, \dots, K$ and $\rho_{e_{1k}, e_{2l}} = 0$ for $k = 1, \dots, K$ and $l = 1, \dots, K$ with $k \neq l$. Then it is easy show that $Cov(\bar{W}_1, \bar{W}_2)$ will be a linear function of $1/K$. This fits the data well. We ignore this complication in the paper, however, since appears to be a second-order consideration and distracts from the main points we wish to make. We will pursue it in future work.

in (1) and (2) is $1/K$ and the regressors in (4) are $1/K$ and $1/K^2$.

To generate the dependent variables for these regressions, suppose we have a total of \mathbf{K} survey items that all tap the same underlying issue, and we have a panel with two periods. For each $K = 1, \dots, \mathbf{K}$, we can take a random subset of K items and average the items to make \overline{W}_1 and \overline{W}_2 for the subset. We can then compute $\sigma_{\overline{W}_1}^2$, $\sigma_{\overline{W}_2}^2$, and $\rho_{\overline{W}_1, \overline{W}_2}^2$ for the subset. Repeating this for a large number of subsets of size K , and then averaging, provides one observation for each of the three regressions. Repeating the procedure for all the possible values of K gives us all \mathbf{K} observations. We can then run the regressions.

Notice that the regressions provide estimates of 7 coefficients (4 slope coefficients and 3 intercepts). There are only 5 parameters to estimate, however ($\sigma_{X_1}^2$, $\sigma_{X_2}^2$, ρ_{X_1, X_2} , $\overline{\sigma}_{e_1}^2$, and $\overline{\sigma}_{e_2}^2$), so the model is over-identified. Thus, not only can we estimate the model, we can test it as well, at least in principle. One caution is that the two regressors in equation (4), $1/K$ and $1/K^2$, are highly collinear, so the estimates might be quite imprecise. This is not much of a problem for estimation, since we can recover all of the model's parameters from the coefficients of equations (1) and (2) and the intercept of equation (4) (the estimate of which will not be severely affected by the collinearity between $1/K$ and $1/K^2$).

The situation simplifies even further if we can assume that $\sigma_{X_1}^2 = \sigma_{X_2}^2 \sigma_X^2$ and $\overline{\sigma}_{e_1}^2 = \overline{\sigma}_{e_2}^2 = \overline{\sigma}_u^2$. In this case, the square of the correlation between the two average measures becomes

$$\rho_{\overline{W}_1, \overline{W}_2}^2 = \rho_{X_1, X_2}^2 \frac{(\sigma_X^2)^2}{[\sigma_X^2 + (\overline{\sigma}_u^2/K)]^2}.$$

Taking the square root of each side and rearranging yields

$$\frac{1}{\rho_{\overline{W}_1, \overline{W}_2}} = \frac{1}{\rho_{X_1, X_2}} + \left[\frac{\overline{\sigma}_u^2}{\rho_{X_1, X_2} \sigma_X^2} \right] \frac{1}{K}. \quad (6)$$

In this case, we have 2 regression equations, (1) (or (2)) and (5). Estimating these yields 4 coefficients (2 slopes and 2 intercepts) with which to calculate 3 parameters, σ_X^2 , $\overline{\sigma}_u^2$, and ρ_{X_1, X_2} . The model is again overidentified, so we can test it as well as estimate it.

2.3. Incorporating Heterogeneity: Converse's Black-White Model

The standard measurement error model treats all individuals similarly. Converse (1964) rationalizes the low overall correlations in survey responses as reflecting a heterogeneous population. More specifically, he argues that the population consists of two types of individuals – sophisticated and unsophisticated. A small fraction of the public, about 20%, is sophisticated. These individuals understand complicated public policy matters, have well formed preferences, and answer survey questions without error. The remaining 80% – the unsophisticated – appear to answer questions almost entirely at random. Converse terms this the “black-white” model.

The standard measurement error model may be extended to incorporate heterogeneity. Let p be the share of the population that is sophisticated. As above, suppose we have two sets of items, each with K elements, $\{W_{11}, W_{12}, \dots, W_{1K}\}$ and $\{W_{21}, W_{22}, \dots, W_{2K}\}$. Suppose each item in the first set taps issue 1 and each item in the second set taps issue 2. Thus, for sophisticated individuals, $W_{ik} = X_i + e_{ik}$ for each $i = 1, 2$ and $k = 1, \dots, K$, where X_i is the true attitude on issue i and e_{ik} is a random error term with $E[e_{ik}] = 0$ and $Var(e_{ik}) = E[e_{ik}^2] = \sigma_{e_{ik}}^2$. For unsophisticated individuals, $W_{ik} = u_{ik}$ for each $i = 1, 2$ and $k = 1, \dots, K$, where u_{ik} is a random error term with $E[u_{ik}] = 0$ and $Var(u_{ik}) = E[u_{ik}^2] = \sigma_{u_{ik}}^2$. That is, the responses of unsophisticated individuals are simply random noise.

The overall response to item k from set i is therefore $W_{ik} = p(X_i + e_{ik}) + (1-p)u_{ik}$. Note that we allow measurement error even for sophisticated individuals. Under the black-white model, sophisticated individuals are assumed to answer questions without error, so $e_{ik} = 0$ for all $i = 1, 2$ and $k = 1, \dots, K$. We analyze the impact of this additional restriction below.

Assume that both random error terms (e and u) in each item are uncorrelated with the true value of the item itself, uncorrelated with the true values of all other items, and uncorrelated with the measurement error in all other items; *i.e.*, $E[X_i e_{jk}] = 0$ and $E[X_i u_{jk}] = 0$ for $i = 1, 2$, $j = 1, 2$, and $k = 1, \dots, K$; $E[e_{ik} e_{jl}] = 0$ unless $i = j$ and $k = l$; $E[u_{ik} u_{jl}] = 0$ unless $i = j$ and $k = l$; and $E[e_{ik} u_{jl}] = 0$ for all $i = 1, 2$, $j = 1, 2$, $k = 1, \dots, K$, and $l = 1, \dots, K$. Finally, let $Var(X_i) = \sigma_{X_i}^2$ for $i = 1, 2$.

As above, we will focus on the variables made by averaging the individual items:

$$\begin{aligned}\bar{W}_1 &= \frac{1}{K} \sum_{k=1}^K W_{1k} = pX_1 + \frac{p}{K} \sum_{k=1}^K e_{1k} + \frac{1-p}{K} \sum_{k=1}^K u_{1k} \quad \text{and} \\ \bar{W}_2 &= \frac{1}{K} \sum_{k=1}^K W_{2k} = pX_2 + \frac{p}{K} \sum_{k=1}^K e_{2k} + \frac{1-p}{K} \sum_{k=1}^K u_{2k} .\end{aligned}$$

Also, let $\bar{\sigma}_{e_1}^2 = \frac{1}{K} \sum_{k=1}^K \sigma_{e_{1k}}^2$, $\bar{\sigma}_{e_2}^2 = \frac{1}{K} \sum_{k=1}^K \sigma_{e_{2k}}^2$, $\bar{\sigma}_{u_1}^2 = \frac{1}{K} \sum_{k=1}^K \sigma_{u_{1k}}^2$, and $\bar{\sigma}_{u_2}^2 = \frac{1}{K} \sum_{k=1}^K \sigma_{u_{2k}}^2$ be the average measurement error variances.

It is straightforward to show that:

$$\sigma_{\bar{W}_1}^2 = p^2\sigma_{X_1}^2 + [p^2\bar{\sigma}_{e_1}^2 + (1-p)^2\bar{\sigma}_{u_1}^2] \frac{1}{K} \quad (7)$$

$$\sigma_{\bar{W}_2}^2 = p^2\sigma_{X_2}^2 + [p^2\bar{\sigma}_{e_2}^2 + (1-p)^2\bar{\sigma}_{u_2}^2] \frac{1}{K} \quad (8)$$

$$Cov(\bar{W}_1, \bar{W}_2) = p^2Cov(X_1, X_2) \quad (9)$$

Also,

$$\frac{1}{\rho_{\bar{W}_1, \bar{W}_2}^2} = \frac{1}{\rho_{X_1, X_2}^2} + \theta_1 \frac{1}{K} + \theta_2 \frac{1}{K^2} \quad (10)$$

where

$$\begin{aligned}\theta_1 &= \frac{\sigma_{X_1}^2 [p^2\bar{\sigma}_{e_2}^2 + (1-p)^2\bar{\sigma}_{u_2}^2] + \sigma_{X_2}^2 [p^2\bar{\sigma}_{e_1}^2 + (1-p)^2\bar{\sigma}_{u_1}^2]}{p^2\rho_{X_1, X_2}^2\sigma_{X_1}^2\sigma_{X_2}^2} \\ \text{and } \theta_2 &= \frac{[p^2\bar{\sigma}_{e_1}^2 + (1-p)^2\bar{\sigma}_{u_1}^2][p^2\bar{\sigma}_{e_2}^2 + (1-p)^2\bar{\sigma}_{u_2}^2]}{p^4\rho_{X_1, X_2}^2\sigma_{X_1}^2\sigma_{X_2}^2}\end{aligned}$$

As in the previous section, this formulation leads naturally to consider treating equations (7), (8) and (10) as linear regression equations, where the regressor in (7) and (8) is $1/K$ and the regressors in (10) are $1/K$ and $1/K^2$. Unfortunately, this does not allow us to identify all of the parameters of the model. Note first that the model has 8 parameters ($\sigma_{X_1}^2$, $\sigma_{X_2}^2$, ρ_{X_1, X_2} , $\bar{\sigma}_{e_1}^2$, $\bar{\sigma}_{e_2}^2$, $\bar{\sigma}_{u_1}^2$, $\bar{\sigma}_{u_2}^2$, and p), but the regressions only yield 7 coefficients. Some parameters are identified, such as ρ_{X_1, X_2} . However, one of the most important parameters – the fraction of individuals who are sophisticated, p – is not.

We might imagine that further restrictions can help. This is certainly true if we impose homogeneity, with $p = 1$, since that leads to the model analyzed in the previous section. It is not true, however, for Converse's black-white model. The black-white model assumes that $\sigma_{e_{ik}} = 0$. Imposing this assumption, equations (7), (8) and (10) above become

$$\begin{aligned}\sigma_{\overline{W}_1}^2 &= p^2 \sigma_{X_1}^2 + (1-p)^2 \overline{\sigma}_{u_1}^2 \frac{1}{K} \\ \sigma_{\overline{W}_2}^2 &= p^2 \sigma_{X_2}^2 + (1-p)^2 \overline{\sigma}_{u_2}^2 \frac{1}{K} \\ \frac{1}{\rho_{\overline{W}_1, \overline{W}_2}^2} &= \frac{1}{\rho_{X_1, X_2}^2} + \left[\frac{(1-p)^2 (\sigma_{X_1}^2 \overline{\sigma}_{u_2}^2 + \sigma_{X_2}^2 \overline{\sigma}_{u_1}^2)}{p^2 \rho_{X_1, X_2}^2 \sigma_{X_1}^2 \sigma_{X_2}^2} \right] \frac{1}{K} + \left[\frac{(1-p)^4 \overline{\sigma}_{u_1}^2 \overline{\sigma}_{u_2}^2}{p^4 \rho_{X_1, X_2}^2 \sigma_{X_1}^2 \sigma_{X_2}^2} \right] \frac{1}{K^2}\end{aligned}$$

Now the model has 6 parameters ($\sigma_{X_1}^2$, $\sigma_{X_2}^2$, ρ_{X_1, X_2} , $\overline{\sigma}_{u_1}^2$, $\overline{\sigma}_{u_2}^2$, and p), and the regressions still yield 7 coefficients. However, there are two exact relationships among the coefficients, and therefore only 5 distinct pieces of information. Let α_1 , α_2 and α_3 be the three intercepts (in order of appearance), let β_1 , β_2 and β_3 be the three coefficients on the $(1/K)$ terms, and let γ_3 be the coefficient on $(1/K^2)$ in the third equation. Then the relationships are $\beta_3/\alpha_3 = (\beta_1/\alpha_1) + (\beta_2/\alpha_2)$ and $\gamma_3/\alpha_3 = (\beta_1/\alpha_1)(\beta_2/\alpha_2)$. That is, the two slope coefficients in the third equation are redundant – they are exact functions of the other 5 coefficients. The third equation actually yields only one additional piece of information, via its intercept. As a result, p is still not identified. Wherever p appears it is multiplied by one of the unknown σ 's; as a result, we cannot identify it without also identifying at least one of the σ 's, and by inspection it is clear we cannot identify any of these.

Finally, note that p is unidentified even if we make the further restriction that $\sigma_{X_1}^2 = \sigma_{X_2}^2 \sigma_X^2$ and $\overline{\sigma}_{u_1}^2 = \overline{\sigma}_{u_2}^2 = \overline{\sigma}_v^2$. In this case, the system can be reduced to the following two equations:

$$\begin{aligned}\sigma_{\overline{W}_i}^2 &= p^2 \sigma_X^2 + (1-p)^2 \overline{\sigma}_v^2 \frac{1}{K} \\ \frac{1}{\rho_{\overline{W}_1, \overline{W}_2}^2} &= \frac{1}{\rho_{X_1, X_2}^2} + \left[\frac{(1-p)^2 \overline{\sigma}_v^2}{p^2 \rho_{X_1, X_2}^2 \sigma_X^2} \right] \frac{1}{K}\end{aligned}$$

Now the model has 4 parameters (σ_X^2 , ρ_{X_1, X_2} , $\overline{\sigma}_v^2$, and p) and the regressions yield 4 coefficients. However, there is again an exact relationship among the coefficients, and therefore

only 3 distinct pieces of information. Letting α_1 and α_2 be the two intercepts (in order or appearance), and letting β_1 and β_2 be the two coefficients on the $(1/K)$ terms, the relationship is $\beta_2/\alpha_2 = \beta_1/\alpha_1$. Again, wherever p appears it is multiplied by one of the unknown σ 's, and we cannot separately identify p or any of the σ 's.

The bottom line is this: In order to identify and estimate the black-white model and the crucial parameter p , we must have additional information.

One possibility is that we can isolate a subset individuals who are definitely sophisticated and/or a subset of individuals who are definitely unsophisticated. Returning to the more general model, recall that *among the sophisticated*, the model of the previous section applies; *i.e.*, $W_{ik} = X_i + e_{ik}$ for $i = 1, 2$ and $k = 1, \dots, K$. And, *among the unsophisticated* an even simpler model applies, with $W_{ik} = u_{ik}$ for $i = 1, 2$ and $k = 1, \dots, K$.

Suppose, for example, we have a subset S of individuals who are known to be sophisticated (*e.g.*, they are identified as such by interviewers, or they correctly answer a large number of factual questions about politics and public policy). Let $\sigma_{X_i|S}^2$ be the variance of X_i among this sophisticated subset, and let $Var(X_i) = \sigma_{X_i}^2$ be the overall variance of X_i in the entire sophisticated population. Given the standard finding that “polarization” in attitudes is more pronounced among politically more sophisticated groups, and that S is likely to be an exceptionally sophisticated group, we may assume that $\sigma_{X_i|S}^2 \geq \sigma_{X_i}^2$.¹⁴ Equations (1) and (2) above apply to the sophisticated subset, and equations (7) and (8) apply to the population, so

$$\sigma_{W_1|S}^2 = \sigma_{X_1|S}^2 + \bar{\sigma}_{e_1}^2 \frac{1}{K} \quad \text{and} \quad (11)$$

$$\sigma_{W_1}^2 = p^2 \sigma_{X_1}^2 + [p^2 \bar{\sigma}_{e_1}^2 + (1-p)^2 \bar{\sigma}_{u_1}^2] \frac{1}{K} \quad (12)$$

and similarly for $i = 2$. We may again treat these as linear regression equations, in which W_1 (or W_2) is regressed on $1/K$. Let α_S be the intercept from estimating equation (11) and

¹⁴See, for example, McClosky, Hoffmann, and OHara (1960). Problems of measurement error probably plague many of these studies, but it seems unlikely that the inequality is actually reversed.

let α be the intercept from estimating equation (12). Then,

$$\sqrt{\frac{\alpha}{\alpha_S}} = \sqrt{\frac{p^2 \sigma_{X_1}^2}{\sigma_{X_1|S}^2}} \leq p .$$

That is, the square root of the ratio of the intercepts of equations (12) and (11) provide a lower bound on p . If $\sigma_{X_1|S}^2 = \sigma_{X_1}^2$, then this ratio provides an actual estimate of p . The analogous equations from $i = 2$ provide another bound.

Finally, it is worthwhile noting a few stark predictions of the black-white model. These are easy to test if we can isolate subsets of sophisticated and unsophisticated individuals. First, if the black-white model is correct, then $\rho_{\overline{W}_1, \overline{W}_2}$ is equal to *zero* for unsophisticated voters, and is independent of K . Second, for each $i = 1, 2$, the variance of the averaged response for unsophisticated voters is $\sigma_{\overline{W}_i|U}^2 = \overline{\sigma}_u / K$. This shrinks to *zero* as K increases, at a rate of $1/K$. Third, $\sigma_{\overline{W}_1|S}^2 = \sigma_{X_1|S}^2$, $\sigma_{\overline{W}_2|S}^2 = \sigma_{X_2|S}^2$, and $\rho_{\overline{W}_1, \overline{W}_2} = \rho_{X_1, X_2}$ for sophisticated individuals, since the black-white model assumes that their responses contain no measurement error. Thus, for sophisticated individuals, $\sigma_{\overline{W}_1|S}^2$, $\sigma_{\overline{W}_2|S}^2$, and $\rho_{\overline{W}_1, \overline{W}_2}$ are all independent of K .

3. Measurement Error and Preference Stability

In this section we show that measurement error is a severe problem in individual survey items, but taking multiple items and averaging can dramatically reduces this error. The resulting scales based on multiple measures are highly stable over time, and scales based on subsets of enough questions are highly correlated within survey. In many cases the over-time correlations are as high as the over-time correlation for party identification.

3.1. Data Sources and Factor Analysis Results

We use the 1956-1960, 1972-1976, 1990-1992, and 1992-1996 panel data sets from the National Election Studies. We study the first and last years of each panel, since these typically contain the largest batteries of repeated issue questions. We selected all available questions on public policy issues, plus a few “feeling thermometer” items for particular groups

– labor, big business, poor people, welfare recipients, and women’s groups – to increase the number of items available for scaling. We grouped these, somewhat subjectively, according to issue area.

We consider all issue areas for which we have at least 10 survey items that are repeated in both years of the panel. In addition, because of its key role in Converse’s original article and the early debate, we analyze one issue area from the 1956-1960 panel – *Economic Issues* – even though we only have four repeated survey items for it. We also include *Law and Order Issues* from the 1972-1976 panel, even though we have only six repeated items, to increase the variety of issue areas covered in our study. The items in each group are shown in Appendix A.

We scaled the items using principal factors factor analysis. In all cases we find a single dominant dimension. The eigenvalues and factor loadings are shown in Appendix B. We then computed the factor scores for the first factor, and use these scores as our issue scales.¹⁵

There is nothing magical about the factor scores. In fact, up to an affine transformation they are almost exactly the same as what we get by simply averaging the survey items. For each issue, we oriented each survey item so that higher scores mean more “conservative” positions on the issue, standardized them to have mean 0 and variance 1, and then took the simple unweighted average. The correlation between the simple averages and the factor scores are all .97 or higher, and 13 out of the 18 correlations are .99 or higher. This is not surprising, since the factor loadings are roughly similar across most survey items (see Appendix B). Also, we get essentially identical results if we normalize each item by setting the minimum value to 0 and the maximum value to 1, rather than standardizing.

3.2. Intertemporal Stability of Issue Scales

Our most important findings are: (1) the issue scales are *much* more stable over time

¹⁵For each issue area, we used all respondents who answered at least 75% of the associated survey items, and imputed values for their missing responses, via best-subset linear imputation.

than the individual items; (2) with enough questions, some issue scales are *as stable as party identification*; and (3) as we add more questions the scales become more stable over time, in a manner consistent with the simple measurement error model analyzed above.

We present results (1) and (2) in Table 1. For each issue area, we construct the factor scores in the first and last years of the panel. We then compute the correlation coefficient between the scores in the two years. These correlations are in columns 4 and 5 of Table 1. In column 5 we construct each issue scale using only the survey items that appear in both years of the panel. In column 4 we construct the issue scales using all available questions in each year – some of these appear in both years and some appear in just one year. The results are almost identical in both columns, so neither choice appears clearly superior.

The intertemporal correlations of the issue scales are quite high, indicated a high degree of intertemporal stability. The average correlation is .77 for the five issue areas of 1990-1992 and 1992-1996. This is much higher than the average correlation among individual survey items, which is just .46.

The average intertemporal correlation of .77 is also nearly as high as the correlation for party identification, which is .79. The intertemporal correlation of the *Racial Issues* scales in the 1972-1976 panel is equal to that of party identification (.76), and the intertemporal stability of the *Moral Issues* scales in the 1992-1996 panel is even higher than for party identification (.83 versus .79). This is an important result, since the high level of stability found for party identification is often taken as evidence that party identification is something real, solid, and meaningful in public opinion. Should we now place general issue positions on the same lofty pedestal?^{16,17}

¹⁶Of course, party identification is also measured with error, and the intertemporal stability of “true” party identification is probably larger than .79 (*e.g.*, Green, Palmquist, and Schickler, 2002). But given the theoretical upper bound of 1, it cannot increase by much.

¹⁷The levels of intertemporal stability we find are also comparable to the levels Jennings (1992) found for *elites* (national convention delegates) on three issue items. He found average intertemporal correlations of .72 for the 1980-1984 delegate panel and .81 for the 1984-1988 delegate panel (Jennings, 1992, Figure 5, page 432). He summarized his findings as follows (page 434): “Overall, it is patent that political party elites have a vastly more constrained and stable set of political preferences and perspectives than does the mass public in general.” While we do not doubt that the policy preferences of elites are more constrained and stable

The issue scales are also uniformly more stable than respondents' self-placed ideology on a 7-point scale.

The intertemporal correlations are smaller in the earlier panels, especially the 1952-1956 panel, but the scales are made with fewer items. This is what we would expect from the measurement error model analyzed above, and as we show below, the available evidence suggests that if the 1952-1956 surveys had included 20 or so questions on economic issues, then the resulting scales would have exhibited a degree of intertemporal stability as high as that in the most recent panels.

Figure 1 shows how adding questions increases the average intertemporal stability of a scale. There we examine the 1990 and 1992 *Economic Issues* scales. For each value of $K = 1, \dots, 23$, there are $\binom{23}{K}$ distinct subsets of K survey items taken from the 23 available items. For each subset \mathbf{S} of K survey items, we can construct a scale for 1990 and a scale for 1992, and then calculate the correlation $\hat{\rho}_{\mathbf{S}}$ between these scales. Averaging over all of the $\binom{23}{K}$ correlations produces a measure of the average degree of intertemporal stability of scales constructed with K items. Since $\sum_{K=1}^{23} \binom{23}{K}$ is a large number (8,388,584) and enumerating all of these combinations is a daunting task, we used monte-carlo techniques to construct our estimates. More specifically, we iterated through 500,000 loops, each time drawing a subset \mathbf{S} of survey items and constructing $\hat{\rho}_{\mathbf{S}}$. We crudely mimicked the frequency distribution given by the function $\binom{23}{K}$, but oversampled in the tails to make sure we included nearly all subsets of size 1, 2, 3, 4, 19, 20, 21, 22, and 23 items (since there are fewer distinct subsets for these values of K). We discarded duplicate subsets and then averaged the $\hat{\rho}_{\mathbf{S}}$ for each value of K .

Figure 1 shows the resulting median intertemporal correlations plotted against K , together with the inter-quartile range, in a box-and-whiskers plot. Evidently, the average degree of intertemporal stability rises smoothly and concavely as the number of survey items increases. In this particular case, with 23 questions the average intertemporal correlation is

than those of the general public, perhaps the differences are not so "vast."

.76, close to its upper limit of about .79.

Recall from equation (6) above that if the variance of the underlying scale and the variance of the measurement error are constant over time, then the inverse of the observed correlation between two scales is a linear function of the inverse of the number of items used to construct the scales. The intercept is equal to the inverse of the correlation between the true positions underlying the scales, X_1 and X_2 ; and the slope is equal to the inverse of the correlation in the true positions times the ratio of the variance in the measurement error to the variance in the true positions. Thus, the ratio of the slope to the intercept is equal to the ratio of the variance of the measurement error to the variance of the true positions in the typical single question.

We can use the simulation results to estimate equation (6), and use the estimated coefficients to calculate the share of the variation in a single item due to noise and the share due to true variation in preference.

In the simulations, for each value of K we generated a large number of intertemporal correlations between scales constructed from K survey items. For each K we then calculate the average of all correlations involving scales constructed from K items, and use this as an estimate of the observed correlation. We then regress the inverse of these observed correlation on the inverse of the number items. Using the economic issues scales from the 1990-1992 ANES panel we can do this for $K = 1, \dots, 23$, giving us 23 observations with which to estimate equation (6). The estimates are as follows:

$$\frac{1}{|\rho_{\bar{W}_1, \bar{W}_2}|} = 1.32 + 1.33 \frac{1}{K}, \quad R^2 = .94$$

These estimates imply that an individual survey item is approximately equal parts measurement error and actual issue preference. The ratio of the slope to the intercept equals 1.01. This implies that on average half of the variance in individual survey items is from actual issue positions and half is from measurement error. This is approximately what Achen (1975) found in studying the 1958 to 1960 panel using a very different methodology.

Note that while the scales we use are generated using factor analysis, the formula underlying equation (6) is derived using simple averages. As noted above, however, the factor scores follow the scores made from simple averages quite closely. Not surprisingly, the estimates of equation (6) are almost identical when we use scales made from simple averages, rather than the factor scores.

It is possible to refine these estimates further, but the refinements suggest that the above calculations underestimate the degree of measurement error. The estimates are not perfect due to violation of the assumption that the error variances of the measures are all the same (and also, probably, violation of the assumption that the error terms are all independent). Some deviation from that assumption leads to slight curvature in the data. The observations most affected by this are measures constructed from just 1 survey item. Dropping these cases and restricting attention to $K = 2, \dots, 23$ yields the following estimates:

$$\frac{1}{|\rho_{\bar{W}_1, \bar{W}_2}|} = 1.26 + 1.89 \frac{1}{K}, \quad R^2 = .98$$

These estimates imply that $\rho_{X_1, X_2} = .78$, and that the ratio of the variance of the measurement error to the variance of underlying scale is 1.50. In other words, the individual items reflect measurement error more than they do the value of the actual issue scale.¹⁸

Whatever the true ratio of noise to signal, the analysis reveals the rate at which factor analysis reduces measurement error. The graph of the stability of the measures against the number of items used reveals the rate at which averaging reduces measurement error. A single item can be quite far from the actual correlation. With 10 items averaged using factor analysis the stability of the measures is close to the true correlation squared; with 20 items the difference between the observed and true correlations is negligible.

¹⁸Using the economic issues scales from the 1992-1996 ANES panel yields a similar conclusion. In this case we have 24 observations, for $K = 2, \dots, 25$. The coefficient estimates are:

$$\frac{1}{|\rho_{\bar{W}_1, \bar{W}_2}|} = 1.27 + 1.65 \frac{1}{K}, \quad R^2 = .98$$

The implied ratio of the variance of the measurement error to the variance of underlying scale is 1.30.

Finally, given the historical importance of the 1952-1956 panel study in the literature on issue preferences, it is interesting to ask where the *Economic Issues* scale for 1952-1956 would fall in Figure 1. In fact, it would lie *above* the curve given by the median correlations! With only 4 survey items, the median intertemporal correlation between the issue scales is .57. As shown in Table 1, the actual intertemporal correlation for the 4 items in 1952-1956 is .63. We are then tempted to speculate a bit. What if the ANES had asked 20 questions about economic issues rather than only 4, and researchers had constructed scales based on these questions and examined the intertemporal correlation between these scales? If a relationship similar to that in Figure 1 held in the 1950s, these researchers would have found a correlation around .8, about as high as the intertemporal correlation for party identification (see Table 1). Could this have altered the subsequent development of the literature on political behavior?

3.2. Within-Survey Stability of Issue Scales

We can also examine the within-survey, cross-sectional stability of issue scales. Consider a given issue area in a given year, and suppose the total number of survey items is K , K even. We can divide the associated survey items into two disjoint subsets, \mathbf{S} and \mathbf{S}' , each containing $K/2$ items. We can then scale each subset separately, and calculate the correlation between the resulting scales, $\hat{\rho}_{\mathbf{S}\mathbf{S}'}$. There are $\binom{K}{K/2}$ distinct subsets of $K/2$ items.¹⁹ Averaging over all of these subsets produces a measure of the average cross-sectional stability of scales made with $K/2$ items. Again, since $\binom{K}{K/2}$ is large when K is, and enumerating all possible subsets with $K/2$ items is difficult, we use monte-carlo techniques to estimate this average. We iterated through 500,000 loops, each time drawing a subset \mathbf{S} of survey items and its complement \mathbf{S}' and constructing $\hat{\rho}_{\mathbf{S}\mathbf{S}'}$. We discarded duplicate subsets and then averaged the $\hat{\rho}_{\mathbf{S}\mathbf{S}'}$. We repeated this for all issue areas and years for which we had 14 or more total survey items (so that each scale is made with at least 7 items).

¹⁹If the number of items is odd, then \mathbf{S} contains $(K-1)/2$ items and \mathbf{S}' contains $(K+1)/2$ items.

The results of this are shown in Table 2. The correlations between the scales are quite high – in most cases higher than .70.²⁰ And, they are much larger than the average correlations among the individual items that went into the construction of the scales, which range from .16 to .27.

We can also examine how the within-survey stability varies with the number of questions scaled. Figure 2 shows this is for economic issues in 1996. There are 34 survey items, so we can study $K = 1, \dots, 17$. For each value of K , we can draw two disjoint subsets with K items, S and S' , from the total of 34 questions. We can then scale each subset separately, and calculate the correlation between the resulting scales, $\hat{\rho}_{SS'}$. Averaging over all of these subsets produces a measure of the average cross-sectional stability of scales made with K items. As in the construction of Figure 1 and Table 2, we use monte-carlo techniques to construct our estimates. For each value of K we iterated through 50,000 loops.

Figure 2 shows the resulting median intertemporal correlations plotted against K , together with the inter-quartile range, in a box-and-whiskers plot. As in Figure 1, the average degree of intertemporal stability rises smoothly and concavely as the number of survey items increases. With 17 questions the average intertemporal correlation is .84, fairly close to its theoretical upper limit of 1.00.

4. Political Sophistication

As discussed above, Converse (1964) argues that the low overall correlations in survey responses are due to variation in political sophistication. About 20% of the population consists of sophisticated individuals, who understand public policy matters, have well formed preferences, and answer survey questions without error. The remaining 80% – the unsophisticated – seem to answer questions almost entirely at random. This is the black-white model.

²⁰This is not surprising, given the pattern of eigenvalues shown in Appendix B. In each issue area in each survey, there is one dominant factor. Putting this finding in terms of cross-sectional stability may drive the point home more clearly for some readers, however.

Evidently, many survey researchers are convinced that this model is largely correct. Luskin (1987, page 889) concludes his survey as follows: “By anything approaching elite standards, the American public is extremely unsophisticated about politics and has not become appreciably more so over the past two-and-a-half decades. Other publics, abroad, are similarly unsophisticated. It is time to close the books on these questions and turn to others.” Even more recently, Saris and Sniderman (2004, page 1) state: “The second theme [of Converse’s] is the role of political sophistication. Two points have long been agreed upon. First, citizens are distributed along a gradient of awareness and understanding of politics. Second, the distribution of citizens along this gradient is skewed to the right: only a small proportion fall toward the tail of engagement with politics and political sophistication while a very high proportion fall toward the tail of political ignorance and inattentiveness.”

In this section we explore the relative importance of measurement error compared to heterogeneity in the distribution of political sophistication. We define sophistication using two standard measures: education, used by Converse (1964) and others, and interviewer assessments of respondents’ political knowledge, used by Zaller (1992) and others.

Our findings are easily summarized. Although we find some evidence of heterogeneity, measurement error is the larger issue.²¹ Moreover, if we follow Converse’s black-white model and define unsophisticated individuals as “pure guessers,” we find that at most 20 percent of the population is unsophisticated. This is exactly the reverse of Converse’s conclusion.

4.1. How does Intertemporal Stability Vary With Sophistication?

One way to get sense of the relative importance of heterogeneity and measurement error is to examine how measurement error varies across levels of political sophistication. Table 3 reports intertemporal stability correlations analogous to those in Table 1, broken down by high vs. low education levels, and high vs. low levels of political information. The high-

²¹This conclusion is consistent with Feldman’s (1989) analysis of a five-wave panel.

education group consists of individuals with college degrees or more. The low-education group consists of those with a high-school degree or less. The political information variable is based on interviewer assessments. Interviewers were asked to rate each respondent’s “general level of information about politics and public affairs” on a 5-point scale, 1 = “very high”, 2 = “fairly high”, 3 = “average”, 4 = “fairly low”, and 5 = “very low.” The high-information group consists of individuals rated “very high” or “fairly high,” while the low-information group consists of those rated “very low” or “fairly low.”

There is clear evidence of some heterogeneity. The intertemporal correlations for low-education and low-information individuals are uniformly lower than the corresponding correlations for high-education or high-information individuals. This is true for the issue scales, and also for the individual survey items underlying the scales. It is also true for self-placed ideology, and for party identification (except in one case).

It is equally clear, however, that the responses of both high-information and low-information individuals are plagued with a large amount of measurement error. Consider, for example, the first block in Table 3, for the 1992-1996 panel. The intertemporal stability of the Economic Issues Scale for high-education individuals is .81, while for low-education respondents it is .71. But the average intertemporal stability of the individual items that comprise the scale is .47 for high-education individuals, and only .35 for low-education individuals. The scales are based on 25 items, so evaluating equation (6) at the two points defined for $K = 1$ and $K = 25$ yields a rough estimate of the noise to signal ratio, via the formula

$$\frac{\sigma_e^2}{\sigma_X^2} = \left[\frac{25}{(\rho_{\bar{W}_1, \bar{W}_2} | K=1)} - \frac{25}{(\rho_{\bar{W}_1, \bar{W}_2} | K=25)} \right] / \left[\frac{25}{(\rho_{\bar{W}_1, \bar{W}_2} | K=25)} - \frac{1}{(\rho_{\bar{W}_1, \bar{W}_2} | K=1)} \right]$$

The estimate implies a noise to signal ratio of 0.78 for high-education individuals ($[\frac{25}{.81} - \frac{25}{.47}] / [\frac{25}{.35} - \frac{1}{.71}]$), and 1.12 for low-education individuals ($[\frac{25}{.35} - \frac{25}{.71}] / [\frac{25}{.71} - \frac{1}{.35}]$). These are in the same ballpark, and also intuitive, implying a bit more signal than noise in the responses of the high-education group, and a bit more noise than signal in the responses of low-education

group.²²

Note also that for both high-education and low-education individuals, the intertemporal stability of the Economic Issues Scale is much higher than the stability of self-placed ideology, and nearly as high as the stability of party identification.

Inspecting the other blocks in the table we see that these general patterns hold for other scales and other years as well.

Finally, note that we can clearly reject the hypothesis that the high-information respondents are sophisticated in the sense of the black-white model. If that were the case, then these individuals would answer survey questions without error, implying (i) the noise to signal ratio for this group should be 0, and (ii) the stability of the scales for this group should not be increasing in K . Neither of these holds. We can also reject the hypothesis that the low-information respondents are unsophisticated in the sense of the black-white model. Under the black-white assumptions these individuals are just guessing in their survey responses, so the measured stability of their responses should be zero regardless of K . In the data, however, for most scales the stability is much larger than 0, and in all cases the stability increases sharply in K .²³

4.2. How Does the Variance of Responses Vary With Sophistication?

In this section we switch our focus from correlations to variances. Thus, in these sections we use simple averages of the various survey items, $\overline{W}_i = \frac{1}{K} \sum_{k=1}^K W_k$ for each respondent, rather than factors scores. Again, we focus on economic issues using 1990-1992 ANES, which has 23 survey items.

We do not need to use the panel for the analysis in this section. Also, we wish to explore the extreme categories of political information – those rated “very high” and the “very low”

²²Note, given the non-linearity in the relationship between $\rho_{\overline{W}_1, \overline{W}_2}$ and $1/K$ noted in the previous section, especially around $K = 1$, the figures probably both underestimates.

²³These same patterns hold even if we define the high-information group as the set of individuals who received a “very high” rating, and the low-information group as the set who received a “very low” rating.

by interviewers on the 5-point scale. So, to obtain as large a sample as possible, we study the entire sample from 1992, including both the panel and non-panel respondents. This gives us 1,217 observations.

Recall that each survey item is standardized to have a mean of 0 and a variance of 1. The variance of the average of the 23 survey items, $\sigma_{\bar{W}_i}^2$, is .21 in the entire sample. Examining subsets, we see that $\sigma_{\bar{W}_i}^2$ is almost monotonic in the level of sophistication: .39 for the group with a “very high” level of political information, .28 for the group with a “fairly high” level, .22 for the “average” group, .17 for the “fairly low” group, and .18 for the group with a “very low” level of information.

According to the pure measurement error model with no heterogeneity, these variances should be identical (assuming the underlying variance of preferences is the same across groups). Evidently, they are not, again suggesting a nontrivial amount of heterogeneity.

Even more striking, however, is that even for the least sophisticated group the variance in the average response is quite large relative to what it would be if these respondents were simply guessing. If each standardized item is purely random noise, then the variance of the average of 23 items should be $1/23 = .043$. In fact, the variance among the group with “very low” political information is .18, more than 4 times larger than the predicted value. Thus, the answers of the least sophisticated group of survey respondents have considerably more content than Converse asserted, and there is a large amount of measurement error in these data.

4.3. How Many Respondents are Just Guessing?

As shown in section 2.3 above, if we assume that Converse’s black-white model is correct, and if we can identify a group of “sophisticated” individuals, then we can estimate the fraction of respondents who are “pure guessers,” or at least get a lower bound on this fraction. We again focus on economic issues in 1992, and use the entire sample including

both the panel and non-panel respondents.

Assume that all of the individuals who were assessed as having “very high” levels of political information by interviewers are sophisticated.

Recall that if we assume the black-white model holds, then we can use equations (11) and (12) above to estimate the fraction of respondents that are sophisticated and unsophisticated. We treat each equation as a regression of the variance of \overline{W} on the inverse of the number of questions – equation (12) is based on the entire sample of individuals, and equation (11) is based on the subsample of sophisticated individuals. The square root of the ratio the intercepts (with the intercept of equation (12) in the numerator) then provides an estimate of p . As noted in section 2.3 above, if the variance of true positions for the group we identify as sophisticated group is larger than average for all sophisticated individuals, then this gives a *lower bound* on the proportion of sophisticated individuals.

To measure \overline{W} for different levels of sophistication we repeatedly sampled sets of K questions from 23 items, for each value of $K = 2, \dots, 23$. We calculated the average value of W for each set and the average of these averages for each value of K . We then regressed these averages on $1/K$. The estimates are as follows:

$$\begin{aligned} \text{Sophisticated group: } \sigma_{\overline{W}}^2 &= .36 + .79 \frac{1}{K}, & R^2 &= .99 \\ \text{Entire sample: } \sigma_{\overline{W}}^2 &= .21 + .79 \frac{1}{K}, & R^2 &= .99 \end{aligned}$$

So, the estimated value of p is:

$$\hat{p} = \sqrt{\frac{\hat{\alpha}}{\hat{\alpha}_S}} = .76$$

Thus, the percentage of sophisticated respondents is at least 75%, while at most only 25% are purely guessing. An analogous exercise using the economic issues from 1996 yields an even higher estimate – at least 84% of respondents are sophisticated and at most 16% are guessing.²⁴

²⁴The estimates are as follows. For the Sophisticated group: $\sigma_{\overline{W}}^2 = .35 + .75 \frac{1}{K}$, $R^2 = .99$. For the entire sample: $\sigma_{\overline{W}}^2 = .25 + .75 \frac{1}{K}$, $R^2 = .99$. So, the estimated value of p is $\hat{p} = \sqrt{\frac{\hat{\alpha}}{\hat{\alpha}_S}} = .84$.

5. Issue Voting

Perhaps the most damning empirical result for issue voting is the fact that individual issue items rarely show large, statistically significant, and robust effects in explaining voting preference or approval of elected officials (*e.g.*, Miller and Shanks, 1996). By contrast, party identification is always found to be extremely important in predicting vote choice and approval. Kinder (1998) surveys the vast literature on this subject and aptly characterizes issue voting as of marginal importance in understanding voting behavior or attitudes about public officials.

In this section we argue that measurement error is a major reason for this conclusion. If individual survey items contain a large amount of measurement error, then it is likely that most of the literature on issue voting has underestimated the effects of issues on electoral decisions. It is well known in statistics that measurement error in independent variables biases estimates of regression coefficients. Measurement error has two effects. First, measurement error creates bias and inconsistency in the independent variable that is measured with error. Typically, the effect of measurement error is to shrink the estimated effect toward zero. If only one variable is measured with error, then the coefficient on that variable will be biased toward zero. When many variables contain measurement error, biases may take more general forms, including incorrect signs (*e.g.*, Klepper and Leamer, 1984). Second, measurement error on one variable spills over onto other variables. Because all coefficient estimates depend on the variances and covariances of all variables, measurement error in one variable necessarily affects the estimated coefficients on other variables.

We show that correcting for measurement error by averaging together multiple measures produces a radically different conclusion about the relative importance of issue positions on vote choice. Issues have statistically significant and substantively large effects, comparable in magnitude to the effects of party identification.

To do this, we contrast two sorts of estimates. First, we regress voting decisions on party

identification, ideology, and a battery of individual issue items. Second, we construct issue scales from the individual issue items, and use these as independent variables in place of the items. If issues matter for voting but measurement error in the individual issue items is a substantial problem, then the estimated coefficients on these variables will tend to be attenuated and few will be statistically significant. The coefficients on the scales will be much larger than the coefficients on the individual items, and the scales will be highly significant.

Consider, first, a focused example based on the 2005 MIT PORTL survey. In this example we use a battery of issue items that asked repeatedly about respondents' fiscal priorities. The survey included 15 separate questions about public finance tradeoffs. Because these items concerned just one issue – the budget – we are reasonably confident of the underlying issue measured. We initially ran a probit regression, with the respondents' reported vote for President in 2004 as the dependent variable, and party identification, ideology, and the full battery of public finance questions as regressors. We standardized all of the regressors, to make comparisons easier. The vote is coded as 1 for Republican and 0 for Democrat and 0 (we drop respondents who voted for minor candidates or did not vote). Only 3 of the estimated coefficients on the 15 items are statistically significantly different from 0 at the .05 level, and none are significant at the .01 level (even with 1,022 observations). The largest coefficient (in absolute value) is .33, and the average absolute value of the coefficients is .12. By comparison, the coefficient on party identification is 1.19 and the coefficient on ideology is .49 (both significant at the .01 level). Next, we scaled the 15 items and constructed a single scale variable measuring of public finance preferences (the factor scores from a factor analysis), and used the scale in place of the individual items.²⁵ Again, we standardized this variable. In the second regression the coefficient on party identification is 1.14, with a z-statistic of 11.87. The coefficient on ideology is again .49, with a z-statistic of 4.66. Most importantly, the coefficient on the public finance preference scale is .90, with a z-statistic of

²⁵As in the analyses above, we obtain virtually identical results if we simply average the standardized responses rather than use factor scores.

8.99.²⁶

Combining multiple measures on a single issue, in this example, produces a completely different conclusion than a multivariate analysis that examines the effects each of the individual items. Moreover, the preferences on public finances have nearly as large of an effect on the vote as party identification. The marginal effect of a one-standard deviation change in public finance preferences is almost 80% as large as the marginal effect of a one-standard deviation difference in party identification.

Casting our view more broadly, we analyzed the American National Election Studies of 1992 and 1996, as well as the 2005 PORTL survey.²⁷ For each of these surveys, we identified two to three dozen issue questions likely to matter directly to the vote. We constructed three scales – an Economic Issues Scale using all items on economic issues, a Moral Issues Scale using all items moral and social issues, and a Foreign Policy Scale.²⁸ The PORTL survey is of particular interest because it is the only survey with more than 10 items in each issue area.

Table 4 contrasts the evidence of issue voting using individual issue items and the scaled issue measures. The top panel displays the results of probit regression analyses predicting the Republican versus the Democratic vote for president as a function of party identification, ideology, and issue positions. Again, all regressors are standardized in all specifications. Rather than show a large number of small and insignificant coefficients, we display the average and median of the absolute values of the coefficients, and the fraction that are statistically significant at the .05 level. Appendix C presents the complete results from these regressions. The bottom panel shows the results using the three issue scales in place of the individual issue items.

²⁶Full results from this analysis are in Appendix C.

²⁷We also analyzed the 1972 and 1976 elections using the ANES. The overall patterns are similar to those reported here.

²⁸An alternative approach is to scale all items together. In the pooled ANES 3 clearly distinct issue dimensions emerge, while in PORTL the data are effectively reduced to a single issue dimension. This might be due to differences in the available set of survey items. Or, it might reflect the nature of political discourse during the second term of the second Bush presidency.

The results are broadly consistent with the conjecture that there is substantial measurement error bias in regressions that use individual items to capture voters' issue positions. When we use individual issue items, the coefficients are small and few are statistically significant. Consider, for example, the 1992 ANES. When we use the individual issue items, only 1 in 10 issue coefficients are statistically significant at the .05 level. The average absolute value of the coefficients is .10, and the largest is .33. The results from PORTL are even more striking – only 2 of 36 issue items are statistically significant at the .05 level, which is just about what we would expect by chance. The average absolute value of the coefficients is .11. There is one large outlier – on the appropriate use of military force – with a coefficient of .48, but overall the results suggest little evidence of issue voting.

When we combine the individual items to construct issue scales, however, the picture changes dramatically. Issue preferences suddenly appear to have much larger and more robust effects on the vote.

In all three analyses, the coefficients on at least two of the three scales are large and statistically significant at the .01 level. In the 1996 ANES and 2005 PORTL regressions, the coefficient on the Economic Issue Scale is more than twice as large as the largest coefficient on any of the individual economic issue items. In the PORTL analysis, the coefficient on the Economic Issues Scale is 75% of the size of the coefficient on party identification. In all three regressions, the combined effect of a changing both the Economic Issues Scale and the Moral Issues Scale by one standard deviation is nearly as large, or even larger than, a change of one standard deviation in party identification. The coefficients on the Moral Issues Scale is the same size as the coefficient on the Economic Issues Scale in the 1992 ANES, but smaller in the 1996 ANES and in the 2005 PORTL. Moral issues are significant in all three analyses, and the scale always has a larger coefficient than any of the individual moral issue items. In the PORTL survey, the Foreign Policy Scale proves quite important – it has a coefficient of .59 and a z-statistic of 5.68.²⁹ By contrast, the average absolute coefficient among the

²⁹This is consistent with Hurwitz and Peffley (1987), Aldrich, Sullivan and Borgida (1989), and Shapiro

individual foreign policy items is just .12.³⁰

Heterogeneity, along the lines of Converse's black-white model, would manifest itself as interactions in these specifications. Specifically, high information and interest individuals would have definite issue preferences, and their expressed opinions would translate directly into votes. However, low information and interest individuals are thought to have no well defined attitudes. According to the black-white model, low-information voters' responses to issue questions are largely noise and, thus, bear no relation to their vote choice. The pure black-white model is surely an extreme case, but substantial heterogeneity may still operate if those with relatively high levels of information are much more issue-oriented in their voting.

What, then, is the relationship between level of information or education and issue voting? The answer, evidently, is none. We reanalyzed the specifications in Table 4 including measures of information and interactions between the issue scales and respondents' information or education.³¹ Education has a significant main effect on the vote, reflecting the fact that higher educated Americans tend to be more Republican. None of the interactions are statistically significant, and the magnitudes of the estimated interactions are small and substantively unimportant. In the 1996 ANES, the estimated interaction between high-education (college or more) and the Economic Issues Scale is -.08 with a standard error of .18, and the estimated interaction between high-education and the Moral Issues Scale is -.07 (se = .19). By contrast the main effects are .55 for the Economic Issues Scale and .44 for the Moral Issues Scale. When we used the interviewer's rating of respondents' information levels to measure sophistication, the interactions are .16 (se = .17) and -.18 (se = .17) for economic

(2005).

³⁰Note that in all these analyses we control for party identification. There is evidence within the data that party identification is more strongly correlated with economic issues than with moral and foreign policy preferences. We are agnostic about the causal relations among the variables on the right-hand side of the equation. However, if one were to measure the total effect of issues, not conditioning on party identification, economic issues become much more important. See Ansolabehere, Rodden, and Snyder (2006).

³¹Because the results are entirely null findings, we do not present the full analysis here. Full results are available upon request.

issues and moral issues, respectively. In the 2005 PORTL survey, the interactions between high-education and issue preferences are .05 (se = .20) for economic issues, .00 (se = .18) for moral issues, and -.11 (se = .18) for foreign policy. In neither survey does the likelihood ratio tests reject the hypothesis that all of the interactions equal 0. There is, then, little evidence that level of sophistication magnifies the extent to which issue preferences affect the vote.

This is a rather striking conclusion considering the rather large literature that looks for such interactions. The fact that the issue scales do not interact with sophistication in predicting the vote carries the implication that such interactions in studies using single items to measure issue preferences are likely capturing measurement error, not substance. High education, high information survey respondents may simply be better test takers, not better citizens.

6. Conclusions

The implications of our analysis are at once substantive and methodological. At least since Achen (1975), survey researchers have recognized the potentially serious biases introduced by measurement error in single survey items. We have documented that those errors are indeed large and have led the field to under estimate the extent to which the electorate holds and relies on their policy preferences. We have proposed a solution that appears, on first pass, to reduce measurement error. Others have used factor analysis to uncover latent dimensions of preferences, but none have comprehended the degree to which factor analysis and other methods of averaging questions fixes simple measurement error. Using multiple measures of survey respondents' issues preferences we are able to substantially reduce measurement error long known to corrupt individual survey items. Having done so a markedly different picture of belief systems in mass publics and issue voting emerges.

First and foremost, we find strong evidence that voters have stable policy preferences. Converse (1964) famously concluded that the mass of the electorate holds non-attitudes on

important policy questions, such as race relations, foreign affairs, and economic redistribution. His evidence was two-fold. The correlation among individual items on each of these questions was relatively small, suggesting little “constraint,” and individual’s responses to a given item were unstable over time. The correlations he found ranged from .2 to .4. Upon averaging items we find much more evidence of constraint and stability. The correlations among the averages of half-samples of items approaches .8, as do the overtime correlations of the individuals’ issue policy scales. Were it the case that the vast majority of people have non-attitudes, as Converse conjectured, averaging would have again returned low correlations.

Measurement error, moreover, accounts for the null findings regarding issue voting that have dogged Political Science research. The vast majority of research on issue voting, as Kinder (1998) concludes in his exhaustive survey, finds weak or no evidence that issue preferences explain the vote. But, those studies rely almost entirely on single items to measure voters’ policy preferences. A small minority construct scales, analogous to roll call voting scores, and that branch of the literature finds substantively important effects of issues (*e.g.*, Carmines and Stimson, 1980; Ansolabehere, Rodden, and Snyder, 2006). Our analysis resolves the tension between these two strands of the literature, and the conflict stems from measurement error in individual issue items. When we use individual items to measure policy preferences, there is little evidence of issue voting in any of the surveys studied. However, consistent with a simple model of measurement error, we find very strong evidence of issue voting when vote preference is regressed on issue scales, controlling for party identification and ideology. In fact, contrary to the bulk of the literature (again see Kinder, 1998), issue voting rivals party as an independent factor in explaining the vote. The combined effects of issue preferences are about as large as party identification in the multivariate analyses predicting the vote. A unit change on all of the issue scales equals or exceeds the effect of a unit change in party identification.

A second important implication of our investigation concerns the relative importance of

heterogeneity of political sophistication. Heterogeneity matters less than the line of inquiry from Converse through Zaller would suggest. Converse distinguished two sorts of citizens – those with high levels of education and political sophistication and the great mass of unsophisticated voters. He estimated that only 20 percent of the electorate had sufficiently stable policy preferences to be characterized as capable of making decisions on the basis of the issues of the day. Some of those who have tried to salvage issue voting, such as Feldman and Zaller, have built on Converse’s black-white model of the electorate.

We find that once distill out the measurement error in the typical survey question, there is much less heterogeneity in the issue content of the typical respondent’s opinions. The over-time correlations of policy preference scales among low sophistication respondents are typically in the range .6 to .7 – these are much larger even than the levels Converse observed for single items among high sophisticates. If we take the black-white model literally, then the percent of people with non-attitudes is no more than 20-25 percent of respondents, rather than somewhere north of 80 percent. There is evidence of some heterogeneity. The lowest education and sophistication voters have somewhat less stable policy opinions than those with high education or sophistication. But, the difference between these two groups is small compared with the enormous amount of measurement error in individual survey items on policy issues. Correcting for the measurement error, all groups exhibit considerable policy content to their opinions.

Moreover, what heterogeneity we do observe has little direct effect on vote choice. Models such as Converse (1964) and Zaller (1992) imply that we should observe strong interactions between sophistication and policy preferences in predicting the vote. We find no such interactions. Neither education nor political information magnifies the extent of issue voting. All respondents draw equally strongly on their policy preferences in choosing elected officials.

Our findings of strong policy voting among the American electorate are encouraging for theoretical models of elections and representation that rely on spatial representations of preferences. Converse’s non-attitudes finding has in many ways been a show stopper

for the spatial theory of elections. If voters do not have policy preferences how could that model possibly characterize elections (Stokes, 1966)? Erikson, MacKuen, and Stimson (2002) suggest that a small amount of policy “signal” is produced by averaging many millions of votes. Our findings imply an even simpler story: There is quite a lot of policy content to individual voters’ preferences and behaviors, but the survey instrument has not been sufficiently finely tuned to detect it.

Going forward, our analysis suggests a change in survey research methodology and design. Survey researchers need to focus even more on the problem of measurement error. This is a two front challenge. First, we need to develop better questions and questionnaires, which will require extensive pre-testing and piloting of questions. Second, we need to refine methods of scaling questions to reduce error through the law of averages. In this respect, the analysis offered here is just the first step.

References

- Abramowitz, Alan I. and Kyle L. Saunders. 1998. "Ideological Realignment in the U.S. Electorate." *Journal of Politics* 60:634-652.
- Achen, Christopher H. 1975. "Mass Political Attitudes and the Survey Response." *American Political Science Review* 69: 1218-1223.
- Achen, Christopher H. 1983. "Toward Theories of Political Data." In *Political Science: The State of the Discipline*, edited by A.W. Finifter. Washington, DC: American Political Science Association.
- Aldrich, John H., John L. Sullivan, and Eugene Borgida. 1989. "Foreign Affairs and Issue Voting: Do Presidential Candidates 'Waltz Before A Blind Audience?'" *American Political Science Review* 83: 123-141.
- Ansolabehere, Stephen, Jonathan Rodden, and James M. Snyder, Jr. 2006. "Purple America." *Journal of Economic Perspectives*, forthcoming.
- Ansolabehere, Stephen, James M. Snyder, Jr., and Charles Stewart III. 2001. "Candidate Positioning in U.S. House Elections." *American Journal of Political Science* 45:136-159.
- Bartels, Larry. 2005. "Whats the Matter with 'Whats the Matter with Kansas'?" Unpublished manuscript, Princeton University.
- Canes-Wrone, Brandice, David W. Brady, and John F. Cogan. 2002. "Out of Step, Out of Office: Electoral Accountability and House Members' Voting." *American Political Science Review* 96:127-140.
- Carmines, Edward G., and James A. Stimson. 1980. "The Two Faces of Issue Voting." *American Political Science Review* 74: 78-91.
- Carmines, Edward G., and James A. Stimson. 1989. *Issue Evolution: Race and the Transformation of American Politics*. Princeton, NJ: Princeton University Press.
- Converse, Philip E. 1964. "The Nature of Belief Systems in Mass Publics." In *Ideology and Discontent*, edited by D.E. Apter. New York: Free Press.
- Converse, Philip E. 1970. "Attitudes and Non-Attitudes: Continuation of a Dialogue." In *The Quantitative Analysis of Social Problems*, edited by E.R. Tuft. Reading, MA: Addison-Wesley.
- Converse, Philip E. 1980. "Comment: Rejoinder to Judd and Milburn." *American Sociological Review* 45: 644-646.
- Converse, Philip E., and Gregory B. Markus. 1979. "Plus ca Change ... The New CPS Election Study Panel." *American Political Science Review* 73: 32-49.

- Dean, Gillian, and Thomas W. Moran. 1977. "Measuring Mass Political Attitudes: Change and Unreliability." *Political Methodology* 4: 383-414.
- Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper and Row.
- Erikson, Robert S. 1978. "Analyzing One-Variable Three Wave Panel Data: A Comparison of Two Models." *Political Methodology* 5: 151-161.
- Erikson, Robert S. 1979. "The SRC Panel Data and Mass Political Attitudes." *British Journal of Political Science* 9: 89-114.
- Erikson, Robert S., Michael B. MacKuen, and James A. Stimson. 2002. *The Macro Polity*. New York: Cambridge University Press.
- Erikson, Robert S. and Gerald C. Wright. 1993. "Voters, Candidates, and Issues in Congressional Elections." In *Congress Reconsidered*, 5th edition, edited by Lawrence C. Dodd and Bruce I. Oppenheimer. Washington: Congressional Quarterly Press.
- Erikson, Robert S., Gerald C. Wright, and John P. McIver. 1993. *Statehouse Democracy: Public Opinion and Policy in the American States*. Cambridge: Cambridge University Press.
- Feldman, Stanley. 1988. "Structure and Consistency in Public Opinion: the Role of Core Beliefs and Values." *American Journal of Political Science* 32: 416-440.
- Feldman, Stanley. 1989. "Measuring Issue Preferences: The Problem of Response Instability." *Political Analysis* 1: 25-60.
- Goren, Paul. 2004. "Political Sophistication and Policy Reasoning: A Reconsideration." *American Journal of Political Science* 48: 462-478.
- Green, Donald, Bradley Palmquist, and Eric Schickler. 2002. *Partisan Hearts and Minds*. New Haven CT: Yale University Press.
- Heath, Anthony, Geoffrey Evans and Jean Martin. 1994. "The Measurement of Core Beliefs and Values: The Development of Balanced Socialist/Laissez Faire and Libertarian/Authoritarian Scales." *British Journal of Political Science* 24: 115-132.
- Heise, D.R. 1969. "Separating Reliability and Stability in Test-Retest Correlations." *American Sociological Review* 34: 93-101.
- Hunter, John E., and T. Daniel Coggin. 1976. "Communication." *American Political Science Review* 70: 1226-1229.
- Hurwitz, Jon, and Mark Peffley. 1987. "How are Foreign Policy Attitudes Structured? A Hierarchical Model." *American Political Science Review* 81: 1099-1120.
- Jackson, John E. 1983. "The Systematic Beliefs of the Mass Public: Estimating Policy Preferences with Survey Data." *Journal of Politics* 45: 840-865.

- Jacobson, Gary C. 1993. "Deficit-Cutting Politics and Congressional Elections." *Political Science Quarterly* 108: 375-402.
- Jennings, M. Kent. 1992. "Ideological Thinking Among Mass Publics and Political Elites." *Public Opinion Quarterly* 56: 419-441.
- Judd, Charles M., and Michael A. Milburn. 1980. "The Structural of Attitude Systems in the General Public: Comparisons of Structural Equation Models." *American Sociological Review* 45: 627-643.
- Judd, Charles M., Jon A. Krosnick, and Michael A. Milburn. 1981. "Political Involvement and Attitude Structure in the General Public." *American Sociological Review* 46: 660-669.
- Key, V.O. 1966. *The Responsible Electorate: Rationality in Presidential Voting, 1936-1960*. Cambridge, MA: Harvard University Press.
- Kinder, Donald R. 1998. "Opinion and Action in the Realm of Politics." In *Handbook of Social Psychology*. Oxford: Oxford University Press.
- Klepper, Steven, and Edward E. Leamer. 1984. "Consistent Sets of Estimates for Regressions with Errors in All Variables." *Econometrica* 52: 163-184.
- Layman, Geoffrey C. 1997. "Religion and Political Behavior in the United States: The Impact of Beliefs, Affiliations, and Commitment From 1980 to 1994." *Public Opinion Quarterly* 61: 288-316.
- Layman, Geoffrey C., and Thomas M. Carsey. 2002. "Party Polarization and Party Structuring of Policy Attitudes: A Comparison of Three NES Panel Studies." *Political Behavior* 24 (Special Issue: Parties and Partisanship, Part Two): 199-236.
- Lord, L.M., and M.R. Novick. 1968. *Statistical Theories of Mental Test Scores*. Reading, MA: Addison-Wesley.
- Luskin Robert C. 1987. "Measuring Political Sophistication." *American Journal of Political Science* 31: 856-899.
- Martin, Steven S. 1981. "New Methods Lead to Familiar Results: Comment on Judd and Milburn." *American Sociological Review* 46: 670-675.
- McClosky, Herbert, Paul J. Hoffmann and Rosemary OHara. 1960. "Issue Conflict and Consensus among Party Leaders and Followers." *American Political Science Review* 54:406-427.
- Miller, Joanne, and David Peterson. 2004. "Theoretical and Empirical Implications of Attitude Strength." *American Journal of Political Science* 66: 847-867.
- Miller, Warren E., and J. Merrill Shanks. 1996 *The New American Voter*. Cambridge MA: Harvard University Press.

- Moskowitz, Adam N., and J. Craig Jenkins. 2004. "Structuring Political Opinions: Attitude Consistency and Democratic Competence among the U.S. Mass Public." *Sociological Quarterly* 45: 395-419.
- Norpoth, Helmut, and Milton Lodge. 1985. "The Difference between Attitudes and Nonattitudes in the Mass Public: Just Measurement?" *American Journal of Political Science* 29: 291-307.
- Page, Benjamin I., and Robert Y. Shapiro. 1982. "Changes in Americans' Policy Preferences, 1935-1979." *Public Opinion Quarterly* 46: 24-42.
- Page, Benjamin I., and Robert Y. Shapiro. 1992. *The Rational Public: Fifty Years of Trends in Americans' Policy Preferences*. Chicago: University of Chicago Press.
- Pierce, John C., and Douglas D. Rose. 1974. "Nonattitudes and American Public Opinion: The Examination of a Thesis." *American Political Science Review* 68: 626-649.
- Polsby, Nelson W., and Aaron Wildavsky. 2000. *Presidential Elections: Strategies and Structures of American Politics*. Tenth edition. New York: Chatham House.
- Smith, T.W. 1984. "Nonattitudes: A Review and Evaluation." In *Surveying Subjective Phenomena*, Volume 2, edited by C.F. Turner and E. Martin. New York: Russel Sage Foundation.
- Sniderman, Paul, and Thomas Piazza. 1993. *The Scar of Race*. Cambridge MA: Harvard University Press.
- Snyder, James M., Jr. 1992. "Artificial Extremism in Interest Group Ratings." *Legislative Studies Quarterly* 17: 319-345.
- Stimson, James A. 1991. *Public Opinion in America: Moods, Cycles, and Swings*. Boulder, CO: Westview Press.
- Treier, Shawn, and Sunshine Hillygus. 2005. "The Structure and Meaning of Political Ideology." Unpublished manuscript, University of Georgia.
- Wiley, D.E., and J.A. Wiley. 1970. "The Estimation of Measurement Error in Panel Data." *American Sociological Review* 35: 112-116.
- Zaller, John R. 1992. *The Nature and Origins of Mass Opinion*. New York: Cambridge University Press.
- Zaller, John R., and Stanley Feldman. 1992. "A Simple Theory of the Survey Response: Answering Questions versus Revealing Preferences." *American Journal of Political Science* 36: 579-616.

Appendix A

1992 and 1996 Economic Issues Scale

(E1) Some people feel the government in Washington should see to it that every person has a job and a good standard of living. Others think the government should just let each person get ahead on their own. Where would you place yourself on this scale, or haven't you thought much about this?

(E2) There is much concern about the rapid rise in medical and hospital costs. Some people feel there should be a government insurance plan which would cover all medical and hospital expenses for everyone. Others feel that all medical expenses should be paid by individuals, and through private insurance plans like Blue Cross or other company paid plans. Where would you place yourself on this scale, or haven't you thought much about this?

(E3) Which one is closer to your views: (1) We need a strong government to handle today's complex economic problems. (2) The free market can handle these problems without government being involved?

(E4) Which one is closer to your views: (1) The less government the better. (2) There are more things that government should be doing?

(E5) Which one is closer to your views: (1) The main reason government has become bigger over the years is because it has gotten involved in things that people should do for themselves. (2) Government has become bigger because the problems we face have become bigger?

(E6) Some people think the government should provide fewer services, even in areas such as health and education in order to reduce spending. Other people feel it is important for the government to provide many more services even if it means an increase in spending. Where would you place yourself on this scale, or haven't you thought much about this?

(E7) Should federal spending on fighting the disease AIDS be increased, decreased, or kept about the same?

(E8) Should federal spending on food stamps be increased, decreased, or kept about the same?

(E9) Should federal spending on welfare programs be increased, decreased, or kept about the same?

(E10) Should federal spending on government assistance for the homeless be increased, decreased, or kept about the same?

(E11) Should federal spending on social security be increased, decreased, or kept about the same?

(E12) Should federal spending on child care be increased, decreased, or kept about the same?

(E13) Should federal spending on poor people be increased, decreased, or kept about the same?

(E14) Should federal spending on improving and protecting the environment be increased, decreased, or kept about the same?

(E15) Should federal spending on public schools be increased, decreased, or kept about the same?

(E16) Should federal spending on financial aid for college students be increased, decreased, or kept about the same?

- (E17) Our society should do whatever is necessary to make sure that everyone has an equal opportunity to succeed.
- (E18) We have gone too far in pushing equal rights in this country.
- (E19) One of the big problems in this country is that we don't give everyone an equal chance.
- (E20) This country would be better off if we worried less about how equal people are.
- (E21) It is not really that big a problem if some people have more of a chance in life than others.
- (E22) If people were treated more equally in this country we would have many fewer problems.
- (E23) Labor unions (feeling thermometer)
- (E24) People on welfare (feeling thermometer)
- (E25) Poor people (feeling thermometer)
- (E26) (1992 only) Do you think government should provide child care assistance to low and middle income working parents, or isn't it the government's business?
- (E27) (1992 only) Should federal spending on programs that assist blacks be increased, decreased, or kept about the same?
- (E28) (1992 only) Should federal spending on government assistance to the unemployed be increased, decreased, or kept about the same?
- (E29) (1992 only) Should federal spending on aid to big cities be increased, decreased, or kept about the same?
- (E30) (1992 only) Do you think the government should require companies to allow up to six months unpaid leave for parents to spend time with their newborn or newly adopted children, or is this something that should be left up to the individual employer?
- (E31) (1992 only) Do you favor or oppose expanding Medicare to pay for nursing home care and long hospital stays for the elderly?
- (E32) (1996 only) Some people have proposed that a woman on welfare who has another child not be given an increase in her welfare check. Do you favor or oppose this change in welfare policy?
- (E33) (1996 only) Another proposal is to put a two year limit on how long someone can receive welfare benefits. Do you favor or oppose this two year limit?
- (E34) (1996 only) Do you favor an increase in the federal budget deficit in order to increase spending on domestic programs like Medicare, education, and highways?
- (E35) (1996 only) Do you favor cuts in spending on domestic programs like Medicare, education and highways in order to cut the taxes paid by ordinary Americans?
- (E36) (1996 only) Do you favor increases in the taxes paid by ordinary Americans in order to increase spending on domestic programs like Medicare, education and highways?
- (E37) (1996 only) Do you favor cuts in spending on domestic programs like Medicare, education, and highways in order to cut the federal budget deficit?
- (E38) (1996 only) Some people think we need much tougher government regulations on business in order to protect the environment. Others think that current regulation to protect the environment are already too much of a burden on business. And, of course, some other

people have opinions somewhere in between. Where would you place yourself on this scale, or haven't you thought much about this?

(E39) (1996 only) Some political leaders think federal income taxes should be cut by 15

(E40) (1996 only) Some people think that the government in Washington ought to reduce income differences between the rich and the poor. Other people think that the government should not concern itself with reducing income different between the rich and the poor. Where would you place yourself on this scale or haven't you thought much about this?

1992 and 1996 Moral Issues Scale

(M1) There has been some discussion about abortion during recent years. Which one of the opinions on this page best agrees with your view? (1) By law, abortion should never be permitted. (2) The law should permit abortion only in case of rape, incest, or when the woman's life is in danger. (3) The law should permit abortion for reasons other than rape, incest, or danger to the woman's life, but only after the need for the abortion has been clearly established. (4) By law, a woman should always be able to obtain an abortion as a matter of personal choice.

(M2) Which of the following views comes closest to your opinion on the issue of school prayer? (1) By law, prayers should not be allowed in public schools. (2) The law should allow public schools to schedule time when children can pray silently if they want to. (3) The law should allow public schools to schedule time when children, as a group, can say a general prayernot tied to a particular religious faith. (4) By law, public schools should schedule a time when all children would say a chosen Christian prayer.

(M3) The newer lifestyles are contributing to the breakdown of our society.

(M4) The world is always changing and we should adjust our view of moral behavior to those changes.

(M5) This country would have many fewer problems if there were more emphasis on traditional family ties.

(M6) We should be more tolerant of people who choose to live according to their own moral standards, even if they are very different from our own.

(M7) Recently there has been a lot of talk about women's rights. Some people feel that women should have an equal role with men in running business, industry, and government. Others feel that a woman's place is in the home. And, of course, some other people have opinions somewhere in between. Where would you place yourself on this scale, or haven't you thought much about this?

(M8) Do you favor or oppose laws to protect homosexuals against job discrimination?

(M9) Do you think homosexuals should be allowed to serve in the United States Armed Forces or don't you think so?

(M10) Womens' movement (feeling thermometer)

(M11) Homosexuals (feeling thermometer)

(M12) Christian fundamentalists (feeling thermometer)

(M13) (1992 only) When raising children, which is more important: (1) To encourage them to be independent-minded and think for themselves. (2) To teach them obedience and respect

for authorities.

(M14) (1992 only) Would you favor or oppose a law in your state that would require parental consent before a teenager under 18 can have an abortion?

(M15) (1992 only) Would you favor or oppose a law in your state that would allow the use of government funds to help pay for the cost of abortions for women who cannot afford them?

(M16) (1992 only) Would you favor or oppose a law in your state that would require a married woman to notify her husband before she can have an abortion?

(M17) (1992 only) It is always wrong for a married person to have sexual relations with someone other than their marriage partner.

(M18) (1992 only) Do you think gay or lesbian couples, in other words, homosexual couples, should be legally permitted to adopt children?

(M19) (1996 only) Mothers should remain at home with young children and not work.

(M20) (1996 only) Christian coalition (feeling thermometer)

1990 and 1992 Economic Issues Scale

(E1) Some people feel the government in Washington should see to it that every person has a job and a good standard of living. Others think the government should just let each person get ahead on their own. Where would you place yourself on this scale, or haven't you thought much about this?

(E2) Which one is closer to your views: (1) We need a strong government to handle today's complex economic problems. (2) The free market can handle these problems without government being involved?

(E3) Which one is closer to your views: (1) The less government the better. (2) There are more things that government should be doing?

(E4) Which one is closer to your views: (1) The main reason government has become bigger over the years is because it has gotten involved in things that people should do for themselves. (2) Government has become bigger because the problems we face have become bigger?

(E5) Do you think government should provide child care assistance to low and middle income working parents, or isn't it the government's business?

(E6) Some people think the government should provide fewer services, even in areas such as health and education in order to reduce spending. Other people feel it is important for the government to provide many more services even if it means an increase in spending. Where would you place yourself on this scale, or haven't you thought much about this?

(E7) Should federal spending on fighting the disease AIDS be increased, decreased, or kept the same?

(E8) Should federal spending on food stamps be increased, decreased, or kept the same?

(E9) Should federal spending on government assistance for the homeless be increased, decreased, or kept the same?

(E10) Should federal spending on social security be increased, decreased, or kept the same?

(E11) Should federal spending on child care be increased, decreased, or kept the same?

(E12) Should federal spending on improving and protecting the environment be increased, decreased, or kept the same?

- (E13) Should federal spending on public schools be increased, decreased, or kept the same?
- (E14) Should federal spending on programs that assist blacks be increased, decreased, or kept the same?
- (E15) Our society should do whatever is necessary to make sure that everyone has an equal opportunity to succeed.
- (E16) We have gone too far in pushing equal rights in this country.
- (E17) One of the big problems in this country is that we don't give everyone an equal chance.
- (E18) This country would be better off if we worried less about how equal people are.
- (E19) It is not really that big a problem if some people have more of a chance in life than others.
- (E20) If people were treated more equally in this country we would have many fewer problems.
- (E21) Labor unions (feeling thermometer)
- (E22) People on welfare (feeling thermometer)
- (E23) Poor people (feeling thermometer)
- (E24) (1990 only) Which one is closer to your views: (1) Most poor people are poor because they don't work hard enough. (2) They are poor because of circumstances beyond their control?
- (E25) (1990 only) Would you support or oppose an increase in taxes that would be used to clean up the nation's air and water?
- (E26) (1990 only) If the United States saves a lot of money on defense spending in the next few years, what should most of that money be used for – to increase spending on domestic programs?
- (E27) (1992 only) There is much discussion about the best way to deal with the problem of urban unrest and rioting. Some say it is more important to use all available force to maintain law and order – no matter what results. Others say it is more important to correct the problems of poverty and unemployment that give rise to the disturbances. And, of course, other people have opinions in between. Where would you place yourself on this scale, or haven't you thought much about this?
- (E28) (1992 only) Should federal spending on welfare programs be increased, decreased, or kept the same?
- (E29) (1992 only) Should federal spending on financial aid for college students be increased, decreased, or kept the same?
- (E30) (1992 only) Should federal spending on government assistance to the unemployed be increased, decreased, or kept the same?
- (E31) (1992 only) Should federal spending on poor people be increased, decreased, or kept the same?
- (E32) (1992 only) Should federal spending on aid to big cities be increased, decreased, or kept the same?
- (E33) (1992 only) If the United States saves a lot of money on defense spending in the next few years, what should most of that money be used for – to reduce the federal budget deficit?

(E34) (1992 only) Do you think the government should require companies to allow up to six months unpaid leave for parents to spend time with their newborn or newly adopted children, or is this something that should be left up to the individual employer?

(E35) (1992 only) There is much concern about the rapid rise in medical and hospital costs. Some people feel there should be a government insurance plan which would cover all medical and hospital expenses for everyone. Others feel that all medical expenses should be paid by individuals, and through private insurance plans like Blue Cross or other company paid plans. Where would you place yourself on this scale, or haven't you thought much about this?

(E36) (1992 only) Do you favor or oppose expanding Medicare to pay for nursing home care and long hospital stays for the elderly?

1990 and 1992 Racial Issues Scale

(R1) Should federal spending on programs that assist blacks be increased, decreased, or kept the same?

(R2) Some people feel that the government in Washington should make every effort to improve the social and economic position of blacks. Others feel that the government should not make any special effort to help blacks because they should help themselves. Where would you place yourself on this scale, or haven't you thought much about this?

(R3) Some people say that because of past discrimination blacks should be given preference in hiring and promotion. Others say that such preference in hiring and promotion of blacks is wrong because it gives blacks advantages they haven't earned. What about your opinion – are you for or against preferential hiring and promotion of blacks?

(R4) Some people say that because of past discrimination it is sometimes necessary for colleges and universities to reserve openings for black students. Others oppose quotas because they say quotas give blacks advantages they haven't earned. What about your opinion – are you for or against quotas to admit black students?

(R5) Do you think the government in Washington should see to it that white and black children go to the same schools? Or stay out of this area as it is not the government's business?

(R6) Some say that the civil rights people have been trying to push too fast. Others feel they haven't pushed fast enough. How about you: Do you think that civil rights leaders are trying to push too fast, are going too slowly, or are they moving at about the right speed?

(R7) In the past few years we have heard a lot about improving the position of black people in this country. How much real change do you think there has been in the position of black people in the past few years; a lot, some or not much at all?

(R8) In past studies we have asked people why they think white people seem to get more of the good things in life in America – such as better jobs and more money – than black people do. These are some of the reasons given by both blacks and whites. Please tell me whether you agree or disagree with each reason as to why white people seem to get more of the good things in life. Over the past few years, blacks have gotten less than they deserve.

(R9) Irish, Italians, Jewish and many other minorities overcame prejudice and worked their

way up. Blacks should do the same without any special favors.

(R10) It's really a matter of some people not trying hard enough. If blacks would only try harder they could be just as well off as whites.

(R11) Generations of slavery and discrimination have created conditions that make it difficult for blacks to work their way out of the lower class.

(R12) (1992 only) Should the government in Washington see to it that black people get fair treatment in jobs or is this not the federal government's business?

1990 and 1992 Moral Issues Scale

(M1) Which one of the opinions on this page best agrees with your view [on the issue of abortion]? (1) By law, abortion should never be permitted. (2) The law should permit abortion only in case of rape, incest, or when the woman's life is in danger. (3) The law should permit abortion for reasons other than rape, incest, or danger to the woman's life, but only after the need for the abortion has been clearly established. (4) By law, a woman should always be able to obtain an abortion as a matter of personal choice.

(M2) Would you favor or oppose a law in your state that would require parental consent before a teenager under 18 can have an abortion?

(M3) Would you favor or oppose a law in your state that would allow the use of government funds to help pay for the cost of abortions for women who cannot afford them?

(M4) Which of the following views comes closest to your opinion on the issue of school prayer? (1) By law, prayers should not be allowed in public schools. (2) The law should allow public schools to schedule time when children can pray silently if they want to. (3) the law should allow public schools to schedule time when children, as a group, can say a general prayernot tied to a particular religious faith. (4) By law, public schools should schedule a time when all children would say a chosen Christian prayer.

(M5) The newer lifestyles are contributing to the breakdown of our society.

(M6) The world is always changing and we should adjust our view of moral behavior to those changes.

(M7) This country would have many fewer problems if there were more emphasis on traditional family ties.

(M8) We should be more tolerant of people who choose to live according to their own moral standards, even if they are very different from our own.

(M9) When raising children, which is more important: (1) To encourage them to be independent-minded and think for themselves. (2) To teach them obedience and respect for authorities?

(M10) Womens' movement (feeling thermometer)

(M11) (1992 only) Recently there has been a lot of talk about women's rights. Some people feel that women should have an equal role with men in running business, industry, and government. Others feel that a woman's place is in the home. And, of course, some other people have opinions somewhere in between. Where would you place yourself on this scale, or haven't you thought much about this?

(M12) (1990 only) Supporters of abortion (Feeling thermometer)

(M13) (1990 only) Opponents of abortion (Feeling thermometer)

(M14) (1990 only) Should burning or destroying the American flag as a form of political protest be legal or should it be against the law? Would you favor or oppose a Constitutional amendment making it illegal to destroy the flag for political reasons?

(M15) (1992 only) Would you favor or oppose a law in your state that would require a married woman to notify her husband before she can have an abortion?

(M16) (1992 only) It is always wrong for a married person to have sexual relations with someone other than their marriage partner.

(M17) (1992 only) Do you favor or oppose laws to protect homosexuals against job discrimination?

(M18) (1992 only) Do you think homosexuals should be allowed to serve in the United States Armed Forces or don't you think so?

(M19) (1992 only) Do you think gay or lesbian couples, in other words, homosexual couples, should be legally permitted to adopt children?

(M20) (1992 only) Homosexuals (feeling thermometer)

(M21) (1992 only) Christian fundamentalists (feeling thermometer)

1972 and 1976 Economic Issues Scale

(E1) Some people feel that the government in Washington should see to it that every person has a job and a good standard of living. Others think the government should just let each person get ahead on his own. And, of course, other people have opinions somewhere in between. Where would you place yourself on this scale, or haven't you thought much about this?

(E2) As you know, in our tax system people who earn a lot of money already have to pay higher rates of income tax than those who earn less. Some people think that those with high incomes should pay even more of their income into taxes than they do now. Others think that the rates shouldn't be different at all-that everyone should pay the same portion of their income, no matter how much they make. Where would you place yourself on this scale, or haven't you thought much about this?

(E3) Some people feel that the government in Washington should make every possible effort to improve the social and economic position of blacks and other minority groups. Others feel that the government should not make any special effort to help minorities because they should help themselves. Where would you place yourself on this scale, or haven't you thought much about this?

(E4) There is much concern about the rapid rise in medical and hospital costs. Some feel there should be a government insurance plan which would cover all medical and hospital expenses. Others feel that medical expenses should be paid by individuals, and through private insurance like blue cross. Where would you place yourself on this scale, or haven't you thought much about this?

(E5) Poor people (feeling thermometer)

(E6) Labor unions (feeling thermometer)

(E7) Big business (feeling thermometer)

(E8) Do labor unions have too much influence in American life and politics?

- (E9) Do big businesses have too much influence in American life and politics?
- (E10) Do people on welfare have too much influence in American life and politics?
- (E11) Do poor people have too much influence in American life and politics?
- (E12) (1972 only) With all the training programs and efforts to help the poor, anyone who wants to work can get a job these days.
- (E13) (1972 only) Many poor people simply don't want to work hard.
- (E14) (1972 only) All except the old and the handicapped should have to take care of themselves without social welfare benefits.
- (E15) (1972 only) In many respects, equality has gone too far in this country.
- (E16) (1972 only) All except the old and the handicapped should have to take care of themselves without social welfare benefits.
- (E17) (1972 only) Which of these two statements do you agree with most? It's the lack of skills and abilities that keep most unemployed people from getting a job ; if they had the skills most of them could get a job. OR: Many people with skills can't get a job ; there just aren't any jobs for them.
- (E18) (1972 only) Which of these two statements do you agree with most? People who are born poor have less chance to get ahead than other people. OR: People who have the ability and work hard have the same chance as anyone else, even if their parents were poor.
- (E19) (1972 only) Which of these two statements do you agree with most? Many poor people simply don't want to work hard. OR: The poor are poor because the American way of life doesn't give all people an equal chance.
- (E20) (1972 only) There is a great deal of talk these days about rising prices and the cost of living in general. Some feel that the government must do everything possible to combat the problem of inflation immediately or it will get worse. Others say that the problem of inflation is temporary and that no government action is necessary. Where would you place yourself on this scale, or haven't you thought much about this?
- (E21) (1976 only) There is much discussion about the best way to deal with the problem of urban unrest and rioting. Some say it is more important to use all available force to maintain law and order – no matter what results. Others say it is more important to correct the problems of poverty and unemployment that give rise to the disturbances. Where would you place yourself on this scale, or haven't you thought much about this?
- (E22) (1976 only) The poor are poor because the wealthy and powerful keep them poor.
- (E23) (1976 only) People are poor because there just aren't enough good jobs for everybody.
- (E24) (1976 only) Poor people didn't have a chance to get a good education – schools in poor neighborhoods are much worse than other schools.
- (E25) (1976 only) The seniority system in most companies works against poor people – they're the last to be hired and the first to be fired.
- (E26) (1976 only) Good skilled jobs are controlled by unions and most poor people can't get into the skilled unions.
- (E27) (1976 only) The poor are poor because the American way of life doesn't give all people an equal chance.

(E28) (1976 only) The government should spend less even if it means cutting back on programs like health and education.

(E29) (1976 only) Should the government in Washington be able to regulate local businesses to meet job safety standards?

(E30) (1976 only) Should the government in Washington be able to require pollution equipment on new cars even if it increases the price you will have to pay?

(E31) (1976 only) How much responsibility does the government in Washington have toward solving the problem of unemployment?

(E32) (1976 only) How much responsibility does the government in Washington have toward solving the problem of pollution?

1972 and 1976 Racial Issues Scale

(R1) Do you think the government in Washington should see to it that white and black children go to the same schools or stay out of this area as it is not its business?

(R2) Some say that the civil rights people have been trying to push too fast. Others feel they haven't pushed fast enough. How about you: do you think that civil rights leaders are trying to push too fast, are going too slowly, or are they moving about the right speed?

(R3) Which of these statements would you agree with most? (1) White people have a right to keep black people out of their neighborhoods if they want to. (2) Black people have a right to live wherever they can afford to, just like anybody else.

(R4) Are you in favor of desegregation, strict segregation, or something in between?

(R5) There is much discussion about the best way to deal with racial problems. Some people think achieving racial integration of schools is so important that it justifies busing children to schools out of their own neighborhoods. Others think letting children go to their neighborhood schools is so important that they oppose busing. Where would you place yourself on this scale, or haven't you thought much about this?

(R6) Some people feel that the government in Washington should make every possible effort to improve the social and economic position of blacks and other minority groups. Others feel that the government should not make any special effort to help minorities because they should help themselves. Where would you place yourself on this scale, or haven't you thought much about this?

(R7) Which of these statements do you agree with most? (1) The best way for blacks to overcome discrimination is through pressure and social action. (2) The best way to overcome discrimination is for each individual black to be even better trained and more qualified than the most qualified white person.

(R8) Which of these statements do you agree with most? (1) Discrimination affects all black people. The only way to handle it is for blacks to organize together and demand rights for all. (2) Discrimination may affect all blacks but the best way to handle it is for each individual to act like any other American – to work hard, get a good education, and mind his own business.

(R9) Which of these statements do you agree with most? (1) It's lack of skill and abilities that keep many black people from getting a job. It's not just because they're black. When

a black person is trained to do something, he is able to get a job. (2) Many qualified black people can't get a good job. White people with the same skills wouldn't have any trouble.

(R10) Which of these statements do you agree with most? (2) Many black people who don't do well in life do have good training, but the opportunities just always go to whites.

(2) Black people may not have the same opportunities as whites, but many blacks haven't prepared themselves enough to make use of the opportunities that come their way.

(R11) Which of these statements do you agree with most? (1) The attempt to "fit in" and do what's proper hasn't paid off for blacks. It doesn't matter how "proper" you are, you still meet serious discrimination if you're black. (2) The problem for many blacks is that they aren't really acceptable by American standards. Any black who is educated and does what is considered proper will be accepted and will get ahead.

(R12) Which of these statements do you agree with most? (1) Blacks and other minorities no longer face unfair employment conditions. In fact, they are favored in many training and job programs. (2) Even with the new programs, minorities still face the same old job discrimination once the program is over.

(R13) Do blacks have too much influence in American life and politics?

(R14) Black militants (feeling thermometer)

(R15) Civil rights leaders (feeling thermometer)

(R16) (1972 only) Should the government in Washington see to it that black people get fair treatment in jobs or leave these matters to the state and local communities?

(R17) (1972 only) Should the government support the right of black people to go to any hotel or restaurant they can afford, or should it stay out of this matter?

(R18) (1972 only) During the past year or so, would you say that most of the actions black people have taken to get the things they want have been violent, or have most of these actions been peaceful?

(R19) (1972 only) Do you think the actions black people have taken have, on the whole, helped their cause, or, on the whole, hurt their cause?

(R20) (1972 only) Thinking about the country as a whole, would you say relations between white people and black people have been getting better, getting worse, or staying pretty much the same?

(R21) (1972 only) Which of these two statements do you agree with most? (1) Many blacks have only themselves to blame for not doing better in life. if they tried harder, they'd do better. (2) When two qualified people, one black and one white, are considered for the same job, the black won't get the job no matter how hard he tries.

(R22) (1972 only) Which of these two statements do you agree with most? (1) People who blame discrimination generally do it to cover their own weaknesses. (2) The person's skill and effort are important but many people still face serious discrimination in our society.

(R23) (1976 only) Black militants have too much influence in American life and politics?

1972 and 1976 Womens' Issues Scale

(W1) Which one of the opinions on this page best agrees with your view [on the issue of abortion]? (1) Abortion should never be permitted. (2) Abortion should be permitted only

if the life and health of the woman is in danger. (3) Abortion should be permitted if, due to personal reasons, the woman would have difficulty in caring for the child. (4) Abortion should never be forbidden, since one should not require a woman to have a child she doesn't want.

(W2) Recently there has been a lot of talk about women's rights. Some people feel that women should have an equal role with men in running business, industry, and government. Others feel that women's place is in the home. Where would you place yourself on this scale or haven't you thought much about this?

(W3) Sometimes a company has to lay off part of its labor force. Some people think that the first workers to be laid off should be women whose husbands have jobs. Others think that male and female employees should be treated the same. Which of these opinions do you agree with?

(W4) Which of these statements do you agree with most? (1) By nature women are happiest when they are making a home and caring for children. (2) Our society, not nature, teaches women to prefer homemaking to work outside the home.

(W5) Which of these statements do you agree with most? (1) Many qualified women can't get good jobs ; men with the same skills have much less trouble. (2) In general, men are more qualified than women for jobs that have great responsibility.

(W6) Which of these statements do you agree with most? (1) Women can best overcome discrimination by pursuing their individual career goals in as feminine a way as possible. (2) It is not enough for a woman to be successful herself ; women must work together to change laws and customs that are unfair to all women.

(W7) Which of these statements do you agree with most? (1) It's more natural for men to have the top responsible jobs in a country. (2) Sex discrimination keeps women from the top jobs.

(W8) Which of these statements do you agree with most? (1) The best way to handle problems of discrimination is for each woman to make sure she gets the best training possible for what she wants to do. (2) Only if women organize and work together can anything really be done about discrimination.

(W9) Which of these statements do you agree with most? (1) Men have more of the top jobs because they are born with more drive to be ambitious and successful than women. (2) Men have more of the top jobs because our society discriminates against women.

(W10) Women's liberation movement (feeling thermometer)

(W11) (1972 only) Men are born with more drive to be ambitious and successful than women.

(W12) (1972 only) Women have less opportunity than men to get the education for top jobs.

(W13) (1972 only) Women are usually less reliable on the job than men, because they tend to be absent more and quit more often.

(W14) (1972 only) Our schools teach women to want the less important jobs.

(W15) (1972 only) By nature women are happiest when they are making a home and caring for children.

(W16) (1972 only) Many qualified women can't get good jobs ; men with the same skills have much less trouble.

(W17) (1972 only) In general, men are more qualified than women for jobs that have great responsibility.

(W18) (1972 only) Our society discriminates against women.

(W19) (1972 only) Women have just as much chance to get big and important jobs ; they just aren't interested.

(W20) (1972 only) Taking things all together, which do you think has a better life in the United States today – men or women?

(W21) (1972 only) Women should stay out of politics.

(W22) (1976 only) An effort is being made to pass an amendment to the U.S. constitution which would guarantee equal rights for all citizens regardless of sex. Do you approve or disapprove of the equal rights amendment to the constitution?

(W23) (1976 only) Does the women's liberation movement have too much influence in American life and politics?

1972 and 1976 Law & Order and Defense Issues Scale

(L1) Some people are primarily concerned with doing everything possible to protect the legal rights of those accused of committing crimes. Others feel that it is more important to stop criminal activity even at the risk of reducing the rights of the accused. Where would you place yourself on this scale, or haven't you thought much about this?

(L2) Some people think that the use of marijuana should be made legal. Others think that the penalties for using marijuana should be set higher than they are now. Where would you place yourself on this scale or haven't you thought much about this?

(L3) Radical students (feeling thermometer)

(L4) Policemen (feeling thermometer)

(L5) Marijuana users (feeling thermometer)

(L6) The military (feeling thermometer)

(L7) (1972 only) Some people are pretty upset about rioting and disturbances on college campuses and in high schools. Some feel sympathetic with the students and faculty who take part in these disturbances; others think the schools should use police and the national guard to prevent or stop disturbances, and others fall somewhere between these extremes. Where would you place yourself on this scale, or haven't you thought much about this?

(L8) (1972 only) Urban rioters (feeling thermometer)

(L9) (1972 only) Ministers who lead protest marches (feeling thermometer)

(L10) (1976 only) There are many possible ways for people to show their disapproval or disagreement with government policies and actions. Suppose all other methods have failed and a person decides to try to stop the government from going about its usual activities with sit-ins, mass meetings, demonstrations and things like that? Would you approve of that, disapprove, or would it depend on the circumstances?

(L11) (1976 only) Some people favor stricter hand gun control while others feel that each person should be able to own a gun free from government control. How about you, do you favor or oppose stricter hand gun control? If oppose: Would you favor or oppose gun control if this only required that each person obtain a permit before purchasing a hand gun?

(L12) (1976 only) In general, do you feel that the courts treat criminals too harshly, too easily, or just about right?

(L13) (1976 only) How much responsibility does the government in Washington have toward solving the problem of combatting crime and drugs?

(L14) (1976 only) Should government be able to require national id cards?

(L15) (1976 only) Should government be able to check your background?

(L16) (1976 only) Should government be able to use wiretap for security?

1956 and 1960 Economic Issues Scale

(E1) The government in Washington ought to see to it that everybody who wants to work can find a job.

(E2) If cities and towns around the country need help to build more schools, the government in Washington ought to give them the money they need.

(E3) The government ought to help people get doctors and hospital care at low cost.

(E4) The government should leave things like electric power and housing for private businessmen to handle.

(E5) (1956 only) The government ought to see to it that big business corporations don't have much to say about how the government is run.

(E6) (1956 only) The government ought to cut taxes even if it means putting off some important things that need to be done.

Appendix B

Table B.1: Factor Analysis Results				
	Economic Issues, 1992		Economic Issues, 1996	
	eigenvalues = 5.43, 1.11		eigenvalues = 6.51, 1.00	
	load	uniq	load	uniq
E1	.54	.71	.61	.63
E2	.47	.78	.49	.76
E3	.48	.77	.55	.70
E4	.57	.68	.61	.63
E5	.49	.76	.53	.72
E6	.60	.65	.68	.53
E7	.41	.83	.46	.79
E8	.50	.75	.52	.73
E9	.54	.70	.54	.70
E10	.51	.74	.59	.65
E11	.40	.84	.45	.80
E12	.53	.72	.61	.63
E13	.60	.64	.66	.56
E14	.39	.85	.41	.83
E15	.43	.81	.51	.74
E16	.30	.91	.43	.81
E17	.34	.88	.46	.78
E18	.40	.84	.45	.80
E19	.56	.69	.52	.73
E20	.39	.85	.36	.87
E21	.35	.88	.30	.91
E22	.48	.77	.51	.74
E23	.43	.82	.50	.75
E24	.41	.83	.44	.81
E25	.36	.87	.34	.89

Table B.1 (continued)				
	Moral Issues, 1992		Moral Issues, 1996	
	eigenvalues = 3.33, 0.57		eigenvalues = 3.18, 0.68	
	load	uniq	load	uniq
M1	.54	.71	.52	.73
M2	.34	.89	.31	.90
M3	.56	.69	.52	.73
M4	.40	.84	.41	.83
M5	.48	.77	.51	.74
M6	.56	.69	.54	.71
M7	.48	.77	.49	.76
M8	.61	.63	.59	.66
M9	.63	.60	.59	.66
M10	.49	.76	.50	.75
M11	.68	.54	.67	.55
M12	.47	.78	.44	.80
	Economic Issues, 1990		Economic Issues, 1992	
	eigenvalues = 4.71, 1.05		eigenvalues = 5.03, 1.23	
	load	uniq	load	uniq
E1	.52	.73	.51	.74
E2	.34	.89	.46	.79
E3	.48	.77	.58	.67
E4	.41	.83	.48	.77
E5	.56	.68	.57	.67
E6	.57	.67	.61	.62
E7	.38	.85	.38	.86
E8	.53	.72	.48	.77
E9	.60	.64	.57	.67
E10	.36	.87	.35	.88
E11	.60	.64	.60	.64
E12	.26	.93	.35	.88
E13	.41	.83	.44	.80
E14	.59	.65	.52	.73
E15	.42	.82	.36	.87
E16	.37	.86	.39	.85
E17	.45	.80	.55	.70
E18	.29	.92	.38	.86
E19	.26	.93	.33	.89
E20	.50	.75	.48	.77
E21	.40	.84	.42	.83
E22	.42	.82	.43	.82
E23	.40	.84	.33	.89

Table B.1 (continued)				
	Racial Issues, 1990		Racial Issues, 1992	
	eigenvalues = 3.97, 0.59		eigenvalues = 4.08, 0.46	
	load	uniq	load	uniq
R1	.60	.63	.66	.57
R2	.64	.59	.67	.55
R3	.63	.60	.61	.63
R4	.65	.58	.67	.55
R5	.55	.70	.53	.72
R6	.56	.68	.55	.70
R7	.43	.82	.41	.83
R8	.65	.58	.71	.49
R9	.68	.54	.66	.57
R10	.62	.62	.59	.66
R11	.56	.69	.58	.66
	Moral Issues, 1990		Moral Issues, 1992	
	eigenvalues = 1.81, 0.51		eigenvalues = 2.24, 0.53	
	load	uniq	load	uniq
M1	.53	.72	.55	.70
M2	.39	.85	.42	.82
M3	.50	.75	.50	.75
M4	.23	.95	.29	.92
M5	.44	.80	.62	.62
M6	.45	.80	.44	.80
M7	.34	.88	.52	.73
M8	.48	.77	.57	.67
M9	.33	.89	.36	.87
M10	.48	.77	.36	.87

Table B.1 (continued)				
	Economic Issues, 1972		Economic Issues, 1976	
	eigenvalues = 1.98, 0.70		eigenvalues = 2.04, 0.71	
	load	uniq	load	uniq
E1	.56	.68	.59	.65
E2	.25	.94	.30	.91
E3	.54	.71	.52	.73
E4	.60	.64	.50	.75
E5	.34	.88	.40	.84
E6	.35	.88	.42	.83
E7	.32	.90	.24	.94
E8	.33	.89	.41	.83
E9	.25	.94	.25	.94
E10	.53	.72	.50	.75
E11	.39	.85	.45	.80
	Racial Issues, 1972		Racial Issues, 1976	
	eigenvalues = 4.63, 0.69		eigenvalues = 4.33, 0.60	
	load	uniq	load	uniq
R1	.53	.72	.63	.61
R2	.60	.64	.62	.62
R3	.40	.84	.29	.92
R4	.51	.74	.52	.73
R5	.57	.67	.60	.65
R6	.63	.61	.59	.65
R7	.49	.76	.44	.81
R8	.64	.59	.56	.68
R9	.52	.73	.49	.76
R10	.47	.78	.37	.86
R11	.53	.71	.56	.68
R12	.53	.72	.52	.73
R13	.60	.65	.60	.63
R14	.56	.69	.52	.73
R15	.69	.52	.63	.62

Table B.1 (continued)				
	Womens' Issues, 1972		Womens' Issues, 1976	
	eigenvalues = 2.65, 0.42		eigenvalues = 2.96, 0.33	
	load	uniq	load	uniq
W1	.36	.87	.38	.89
W2	.53	.72	.69	.57
W3	.34	.89	.42	.89
W4	.57	.67	.59	.67
W5	.53	.71	.53	.76
W6	.52	.73	.49	.76
W7	.68	.53	.70	.54
W8	.39	.85	.38	.88
W9	.65	.57	.62	.68
W10	.44	.80	.53	.71
	Law & Order & Defense Issues, 1972		Law & Order & Defense Issues, 1976	
	eigenvalues = 2.05, 0.29		eigenvalues = 2.01, 0.39	
	load	uniq	load	uniq
L1	.43	.82	.31	.90
L2	.68	.54	.74	.45
L3	.47	.77	.45	.79
L4	.54	.71	.53	.71
L6	.60	.64	.56	.69
L5	.73	.47	.75	.44
	Economic Issues, 1956		Economic Issues, 1960	
	eigenvalues = 1.06, -0.01		eigenvalues = 1.18, -0.01	
	load	uniq	load	uniq
E1	.59	.66	.62	.62
E2	.51	.74	.59	.65
E3	.60	.64	.62	.61
E4	.31	.90	.25	.94

Appendix C

Complete results for Table 4 go here. More ugly tables.

Table 1						
Correlations Between ANES Panel Waves, Issue Scales and Individual Survey Items						
Issue Area	Total Items Year 1	Total Items Year 2	Total Items in Common	Correlations Between		
				Scales Made with All Items	Scales Made with Common Items	Individual Common Items (Average)
1992, 1996						
Economic Issues	32	34	25	.77	.76	.42
Moral Issues	18	14	12	.84	.83	.52
Ideology	1	1	1			.57
Party ID	1	1	1			.79
1990, 1992						
Economic Issues	27	33	23	.78	.76	.41
Racial Issues	11	12	11	.77	.77	.51
Moral Issues	13	18	10	.69	.71	.45
Ideology	1	1	1			.51
Party ID	1	1	1			.79
1972, 1976						
Economic Issues	16	21	11	.65	.67	.42
Racial Issues	22	16	15	.76	.76	.42
Womens' Issues	20	12	10	.64	.65	.41
Law & Order	9	11	6	.71	.73	.52
Ideology	1	1	1			.56
Party ID	1	1	1			.76
1956, 1960						
Economic Issues	6	4	4	.62	.63	.43
Party ID	1	1	1			.83

The number of observations varies slightly from cell to cell due to missing data. For the Economic Issues scales made using all common items, the number of observations in the various panel are as follows: 534 in the 1992-1996 panel; 607 in 1990-1992; 971 in 1972-1976; and 953 in 1956-1960.

<p style="text-align: center;">Table 2 Correlations Between Issue Scales of Disjoint Subsets of Half of the Items</p>			
		Average Correlations	
Issue Area	Total Items	Issue Scales	Pairs of Items
ANES			
Economic Issues, 1996	34	.84	.24
Moral Issues, 1996	14	.65	.25
Economic Issues, 1992	32	.79	.21
Moral Issues, 1992	18	.74	.23
Economic Issues, 1990	27	.74	.19
Economic Issues, 1976	21	.68	.18
Racial Issues, 1976	18	.75	.27
Economic Issues, 1972	16	.61	.16
Racial Issues, 1972	22	.80	.27
Womens' Issues, 1972	20	.73	.20
MIT PORTL			
Economic Issues, 2005	19	.24	.78

Table 3								
Correlations Between ANES Panel Waves, Issue Scales and Individual Survey Items By Education and Political Information Level								
	High Educ. Respondents		Low Educ. Respondents		High Info. Respondents		Low Info. Respondents	
Issue Area	Issue Scales	Indiv. Items	Issue Scales	Indiv. Items	Issue Scales	Indiv. Items	Issue Scales	Indiv. Items
1992, 1996								
Economic Issues	.81	.47	.71	.35	.78	.45	.68	.30
Moral Issues	.86	.58	.75	.42	.84	.54	.71	.38
Ideology		.84		.31		.73		.19 ¹
Party ID		.77		.79		.81		.76
1990, 1992								
Economic Issues	.81	.50	.74	.36	.78	.46	.68	.31
Racial Issues	.86	.57	.73	.48	.82	.54	.68	.43
Moral Issues	.85	.57	.58	.35	.82	.53	.47	.31
Ideology		.79		.39		.67		.32
Party ID		.83		.76		.83		.57
1972, 1976								
Economic Issues	.73	.46	.66	.39	.71	.45	.60	.35
Racial Issues	.80	.44	.72	.37	.80	.47	.69	.32
Womens' Issues	.76	.47	.59	.36	.70	.45	.60	.36
Law & Order	.82	.61	.63	.45	.78	.58	.58	.36
Ideology		.66		.48		.63		.56
Party ID		.87		.71		.83		.61
1956, 1960								
Economic Issues	.62	.47	.58	.39				
Party ID		.92		.79				

In each case, the issue scales are made using only the survey items common to both years of the panel. The number of items for each issue area can be found in Table 1, column 3.

¹ Based on only 61 cases.

Table 4			
Effects of Party and Issues on Presidential Voting, ANES and MIT PORTL Surveys			
	ANES, 1992	ANES, 1996	PORTL, 2005
	1992 Vote	1996 Vote	2004 Vote
Party ID	1.12 (.11)**	.99 (.09)**	1.00 (.12)**
Ideology	.24 (.10)*	.24 (.09)**	.29 (.13)*
Individual issue items:			
number of items	58	51	35
average coefficient	.10	.09	.11
median coefficient	.08	.07	.08
fraction significant (.05 level)	.10	.16	.06
N	655	892	1,003
Pseudo- R^2	.68	.68	.80
Party ID	.96 (.08)**	.94 (.08)**	.93 (.11)**
Ideology	.18 (.09)*	.28 (.08)**	.34 (.12)**
Economic Issues Scale	.39 (.08)**	.55 (.09)**	.70 (.10)**
Moral Issues Scale	.43 (.09)**	.37 (.08)**	.27 (.10)**
Foreign Policy Scale	.16 (.09)	.01 (.07)	.59 (.10)**
N	655	892	1,003
Pseudo- R^2	.61	.62	.77

All variables standardized.

** = significant at the .01 level.

* = significant at the .05 level.

Figure 1

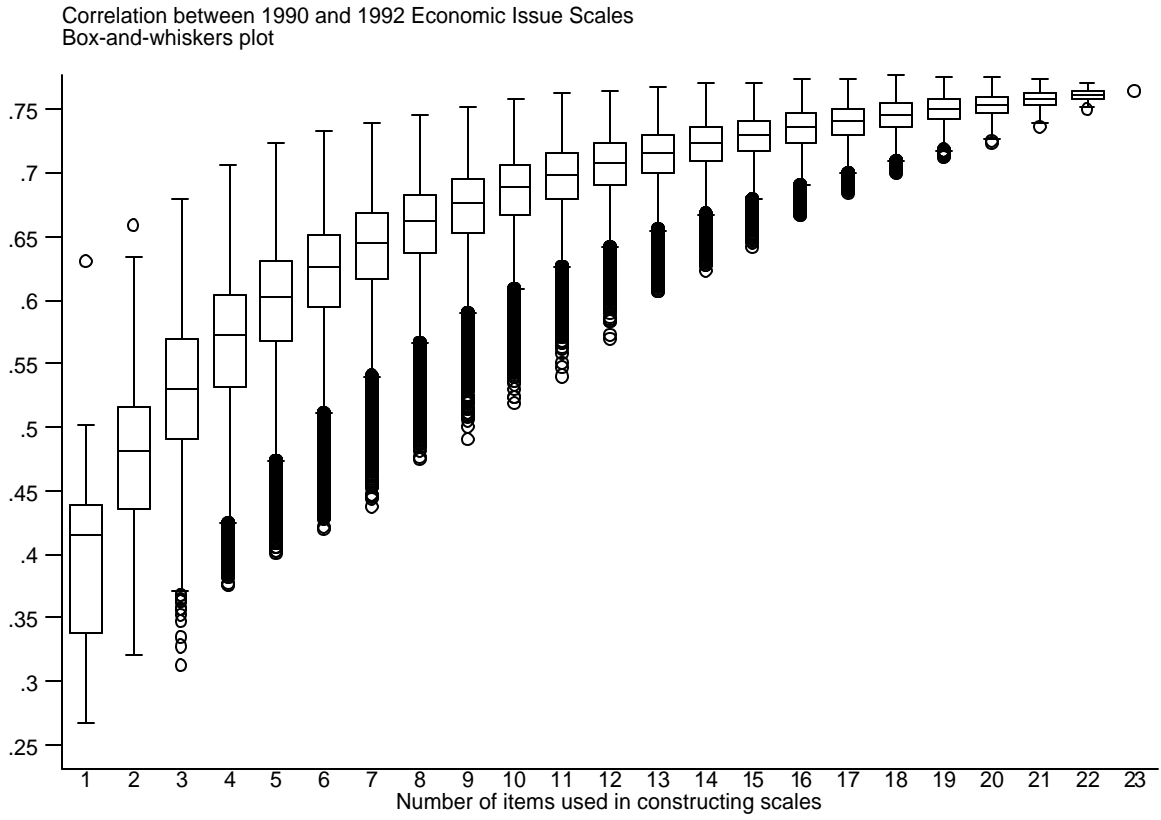


Figure 2

