The SRC Panel Data and Mass Political Attitudes

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One of the richest data sources for the study of public opinion is the Survey Research
Center's panel study conducted in the late 1950s. Because the SRC interviewed its
national panel of Americans three times over a four-year period, the SRC panel data
allows the analysis of changes in survey responses over time. The most remarkable
discovery from the SRC panel was that panelists changed their reported opinions
on policy issues with considerable frequency when asked the same policy questions
in different years. Moreover, the amount of observed change in the individual
responses varied little with the time interval between responses. That is, the
correlations between responses to the same issue item in 1956 and 1958 or in 1958
and 1960 (two years apart) were almost as low as the correlations to the same issue
item in 1956 and 1960 (four years apart).

   An important debate has developed over the proper interpretation of these basic
facts. Converse has developed an elegant argument to the effect that the response
instability in the panel data is evidence of a basic indifference to policy questions
on the part of major segment of the American public.[1] Converse's interpretation
of the SRC panel data has had considerable impact on how students of public opinion
and voting behaviour view the public's political capabilities. Recently, however,
Converse's interpretation has been challenged by Pierce and Rose and by Achen.[2]
Sideline comments by others suggest the controversy remains unsettled.[3] The
problem is a complicated one, as it involves methodological issues, choices of
assumptions, and the difficulty of finding satisfactory side-evidence for the resolution

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to Brian Silver for his helpful comments.

   [1] Philip E. Converse, 'The Nature of Belief Systems in Mass Publics ', in David Apter, ed.,
Ideology and Discontent (New York: The Free Press, 1964), pp. 206–61; Philip E. Converse,
'Attitudes and Non-Attitudes: Continuation of a Dialogue', in Edward R. Tufte, ed., *The
Quantitative Analysis of Social Problems* (Reading, Mass.: Addison-Wesley, 1970), pp. 168–89.
Butler and Stokes have made a similar interpretation from their British panel data. See David
Butler and Donald Stokes, *Political Change in Britain* (London: Macmillan, 1969), pp. 173–200.

   [2] John C. Pierce and David P. Rose, 'Nonattitudes and American Public Opinion: The
Examination of a Thesis ', *American Political Science Review*, LXVIII (1974), 626–49; Christopher
Achen, 'Mass Political Attitudes and the Survey Response ', *American Political Science Review*,
LXIX (1975), 1218–31.

   [3] See the communications in response to Achen's article and Achen's reply in *American
Political Science Review*, LXX (1976), 1226–31.

of competing explanations. This article offers a further exploration of the SRC panel data and what it might tell us about public attitudes on policy issues.

THE CONTROVERSY

In the first reports on the panel data, Converse developed the argument – at first startling, but now familiar – that the pattern of frequent turnover of observed policy attitudes indicated that many of the panel respondents were actually expressing what were in effect 'non-attitudes'. Converse suggested that the turnover pattern can be approximately accounted for by what he calls a 'black-and-white' model. According to this model, all observed opinion turnover is actually the random change in the responses by people without opinion, while the holders of true opinions never change. If this model is accurate, the high frequency of observed opinion turnover forces the conclusion that many survey responses are in fact 'non-attitudes' – random, *ad hoc*, 'doorstep opinions' expressed by respondents when actually they have no particular views on the policy matter upon which they are questioned.

Converse reports that the fit of the black-and-white model is nearly perfect on the item dealing with the role of the federal government in housing and electric power. This fit on 'power and housing' makes for a disturbing deduction: if the assumptions of the model are correct, less than one respondent in five actually had an opinion on this issue. A companion deduction is that the minority with actual views on the 'power and housing' issue underwent no attitude change over the four-year period. Although Converse tells us that the black-and-white model fits less well on the remaining seven issues for which there are three opinion readings, the fit is close enough to suggest that there may have been little true attitude change on these issues over the four-year period. Moreover, because observed rates of opinion turnover on all the issue items were rather high, even an approximate fit of the black-and-white model suggests that only small proportions of the SRC's sample held true opinions (whether fixed or changing) on the policy questions.[4]

Converse's critics argue that the low correlations between responses to the same issue at different times can be interpreted as evidence of ordinary measurement error in the instrument rather than as the consequence of a widespread prevalence of non-attitudes on policy issues.[5] They do not, however, challenge Converse's assertion that there was very little change in the true opinions among panel respondents. Converse has replied vigorously to Pierce and Rose, defending his choice of the black-and-white model as it applies to the 'power and housing' item, but de-emphasizing its fit to other issues.[6]

Both Converse and his critics agree that the issue items in the panel data suffer from low 'reliability'. Part of the dispute is whether the low reliability is due to the usual random measurement error of the instrument (as applied to all respondents)

[4] Converse, 'The Nature of Belief Systems in Mass Publics', pp. 238–45.

[5] Achen, 'Mass Political Attitudes and the Survey Response', pp. 1220–1; Pierce and Rose, 'Nonattitudes and American Public Opinion', pp. 644–5.

[6] Philip E. Converse, 'Comment', *American Political Science Review*, LXVIII (1974), 650–60, a reply to Pierce and Rose, 'Nonattitudes and American Public Opinion'.

or due to certain respondents being unable to cope with the policy questions. According to Converse's black-and-white model, the observed scores contain no error variance (are perfectly reliable) for one class of individuals (true opinion holders) but comprise only error variance for the remaining class (randomly responding non-opinion holders). At the other extreme, however, one could assume that the error variance is the same for all respondents, so that each respondent has equal difficulty answering the issue items reliably.[7]

As Achen has pointed out, the crucial issue is not the amount of individual variation in response instability, but rather whether response instability (or error variance) is the result of people lacking the necessary political sophistication that would allow them to respond with reliable opinions.[8] In other words, the crucial matter is the extent to which the stability of individuals' responses increases with political sophistication. Because the black-and-white model assumes that each person responds either accurately or randomly, it assigns the 'blame' for the noise in the panel data to the unique set of respondents whose lack of interest prevents them from giving a reliable opinion on the particular issue item. But if the responses to the issue items are equally unreliable for people at different levels of political sophistication, the 'blame' for the noisy data would be assigned to the general fallibility of the measuring instrument itself rather than to a faulty public.

THE PLAN OF THIS ARTICLE

In order to attempt a resolution of the 'non-attitudes' controversy, several issues must be tackled. The following is an outline of the questions investigated in this article.

(1) *Does the response instability in the SRC panel data actually reflect low reliability of measurement instead of true attitude change?* Paradoxically, although the *amount* of observed instability is high, the *pattern* of the observed instability suggests the SRC panelists underwent very little true attitude change. With little true attitude change, the observed instability reflects mainly low reliability of the items as measures of true opinions. This interpretation is similar to previous interpretations of the same data.

(2) *If the black-and-white interpretation of this response instability is correct, how prevalent are 'non-attitudes' on the part of survey respondents?* It is shown that different assumptions about the distributions of individual respondents' response

[7] The statistical literature defines 'reliability' and 'error variance' to be related as follows. Assuming the error variance is random (that is, errors are uncorrelated with true scores), the total (or observed) variance is the sum of the true variance and the error variance. 'Reliability' can be defined as the ratio of the true variance to the observed variance, or:

reliability = true variance/total variance
= (total variance – error variance)/total variance.

The error variance for an aggregate of individuals is the mean of the component individuals' error variances, which may themselves vary. That is, the variances of the individuals' multiple responses around their personal means (true scores) may vary. The variability of individual error variance is the point in dispute.

[8] Achen, 'Mass Political Attitudes and the Survey Response', p. 1226.

errors lead to radically different conclusions about the extent of opinion holding. Strict application of Converse's black-and-white assumptions suggests only a minority hold opinions on any given issue. The opposite assumption of equally distributed response errors suggests a very different conclusion.

(3) *Are the assumptions of the black-and-white model correct?* Given that very different interpretations can be made from different assumptions, it is appropriate to test for the validity of the competing assumptions. As a third step, a test is made for the validity of the black-and-white assumptions. If respondents can be divided into true opinion holders who respond consistently over time and respondents who respond randomly (the black-and-white assumptions), then the 'opinions' expressed by the latter group should manifest the properties of truly random phenomena. The test employed is whether these supposedly random 'opinions' correlate with other 'opinions' expressed by the same respondents. If these changing 'opinions' are truly random, they should not correlate with other opinions.

(4) *Is response instability the result of low political sophistication?* Whether or not the pure black-and-white model is valid, it is possible that individuals vary in their ability to state their true opinion, with the least politically sophisticated respondents having the greatest difficulty. This is, perhaps, the key issue of the controversy. As a fourth step, a test is made to see whether response instability is greatest among the least politically sophisticated respondents. Only if such a result is found could a lack of sophistication on the part of the respondents be a source of the opinion items' low reliability.

(5) *What effect do the low reliabilities have upon the observed correlations between opinions on different issues?* In his original discussion of mass opinion, Converse commented not only upon the instability of opinion, but also the lack of consistency of opinions across different issues. These low correlations between opinions on different issues are themselves attenuated by the low reliability of the items. The fifth step is a re-examination of these inter-item correlations, introducing a correction for reliability.

THE DATA

Eight different policy items were administered in all three waves of the SRC panel. This analysis is limited to the responses to these eight items by the 1,130 (unweighted) respondents who were administered the policy items in all three waves. Each of the eight items was in the form of a statement, on which respondents were asked to indicate their relative agreement or disagreement: strongly agree, agree, depends, disagree, or strongly disagree. Respondents were discouraged from offering an opinion if they in fact had no interest in the issue, and this screening device resulted in a considerable amount of 'missing data' on some issues.

The five-point responses are generally treated here as interval-level data. Although the issue responses are limited to a potential range of only five possible discrete scores, it is unlikely that this violation of interval-level assumptions could seriously distort substantive interpretations. The trade-off is that interval-level assumptions

TABLE I   *Test–Retest Correlations for Eight Opinion Items*

Issue	N	1956–58	1958–60	1956–60
Guaranteed job	(868)	·45	·47	·43
School aid	(871)	·47	·46	·44
Power and housing	(596)	·37	·36	·37
School segregation	(816)	·44	·55	·42
Fair employment	(795)	·49	·50	·48
Isolationism	(846)	·38	·47	·36
Foreign aid	(753)	·31	·43	·31
Soldiers abroad	(688)	·32	·36	·26
Mean		·40	·45	·38

Note: Results are based on the portion of the sample responding to the given item in all waves.

provide a powerful increase in statistical leverage. Occasionally, the items are treated as dichotomies with analysis limited to which *side* of the issue (pro or con) the respondents fall. Dichotomous treatment is necessary when dealing with Converse's black-and-white model, since the model assumes that only changing sides on an issue indicates a non-attitude, while shifting between a strong and a weak preference on the same side of the issue does not.

SEPARATING RELIABILITY AND STABILITY

Before one can locate the cause of the items' lack of reliability, one must sort out the extent to which the low test-retest correlations are due to low reliability and to what extent they are due to true opinion change. Table I displays the test–retest correlations (Pearson's *r*) for the five-point responses to each of the eight policy items included in all three waves of the SRC panel. Following Converse, Pierce and Rose, and recent methodological discussions of three-wave panel data, we may assume that the causal process of 'true' attitude change is in accord with the Markovian assumptions of a simple causal chain. Such a model is presented in Fig. I, where X_1, X_2 and X_3 represent 'true' opinion at times 1, 2 and 3, respectively; and X_1', X_2' and X_3' represent observed opinion at time 1, 2 and 3. The assumption that X_1 does not influence X_3 except indirectly via X_2 yields the expectation that $r_{12} \cdot r_{23} = r_{13}$. The fact that the correlations among the observed opinions do not fit this expectation indicates that the observed opinions are not identical to the true opinions. In fact, the three sets of observed correlations are of roughly equal magnitude, a pattern that suggests little true attitude change.

By the standard definition, the reliabilities of the three readings are the squares of the correlations between the true and observed opinions. The correlations between true opinions in successive panel waves may be labelled 'stability' coefficients. With the help of some identifying assumptions, the reliabilities can be
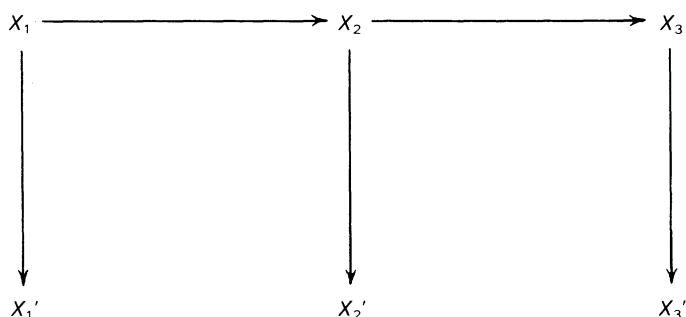
Fig. 1. Causal model of a variable over time (residual paths are omitted)

estimated from the observed data. One additional specification, suggested by Heise, is to assume that the reliabilities of the three measurements are equal to one another.[9] An alternative specification, suggested by Wiley and Wiley, is that the error variances rather than the reliabilities remain constant over time.[10] Each of these sets of assumptions yield estimates of the reliabilities and stabilities of the panel items.[11]

Table 2 displays the reliability and stability estimates for the panel items using both the Heise and Wiley–Wiley assumptions. In general, the estimated stability coefficients ('true' over-time correlations) are extremely high. From Heise's assumptions, the average stability coefficient is ·86 between 1956 and 1958 and ·95 between 1958 and 1960. From Wiley and Wiley's assumptions, the average stability coefficients are an even higher ·87 for 1956–58 and ·97 for 1958–60.[12]

[9] David R. Heise, 'Separating Reliability and Stability in Test–Retest Correlations', *American Sociological Review*, XXXIV (1969), 93–101.

[10] David E. Wiley and James A. Wiley, 'The Estimation of Error in Panel Data', *American Sociological Review*, XXXV (1970), 112–17.

[11] For details of the applications of the Heise and Wiley–Wiley models to the SRC panel data, see Robert S. Erikson, 'Analyzing One-Variable Three-Wave Panel Data: A Comparison of Two Models', *Political Methodology*, V (1978), forthcoming.

[12] It would be difficult to specify a set of assumptions that could allow a considerable amount of true attitude change when the observed test–retest correlations are virtually invariant with the temporal distance between measurements. But one way the stability estimates could be lowered is by arbitrarily assigning lower than average reliabilities to the midpoint 1958 scores. A possible reason for considering this option is that 1958 was a midterm year. If issue attitudes are less crystallized in non-presidential years, the error variances might be greater in 1958 than in 1956 or 1960.

Fortunately, it is possible to make an independent check on the possibility that the observed attitudes for 1958 were disproportionately unreliable. If 1958's observed opinions were less reliable than for presidential years, one ought to have greater difficulty predicting 1958 attitudes from standard demographic variables. To see whether such a pattern could be found, attitudes for each issue for each wave were separately regressed against a series of dummy variables (measured for the given year) representing age, race, religion, education, head's occupation, and region. On the average, the multiple Rs were greatest for 1958, next greatest for 1960, and lowest for 1956. Assuming constancy to the relationship between background variables and attitudes, this ordering suggests the highest reliabilities were generally for 1958 and the lowest for 1956. Since this is exactly the ordering suggested by the Wiley–Wiley assumptions,

TABLE 2   *Estimates of the Stability of 'True' Attitudes and Reliability of Observed Attitudes*

| | Heise model (equal reliability assumption) | | | Wiley and Wiley model (equal error-variance assumption) | | | | |
| | Stability* | | Constant reliability | Stability* | | Reliability | | |
	1956–58	1958–60		1956–58	1958–60	1956	1958	1960
Guaranteed job	·92	·95	·49	·95	1·01	·46	·49	·44
School aid	·96	·93	·49	1·07	·91	·40	·49	·51
Power and housing	1·02	1·01	·36	·99	·99	·38	·36	·38
School segregation	·77	·96	·57	·79	·96	·54	·57	·57
Fair employment	·95	·98	·51	·93	·99	·54	·51	·49
Isolationism	·77	·97	·49	·85	1·05	·42	·49	·41
Foreign aid	·78	·98	·43	·74	1·00	·42	·43	·42
Soldiers abroad	·72	·81	·44	·67	·81	·47	·44	·45
Mean	·86	·95	·47	·87	·97	·45	·47	·46

* 'Stability' estimates are estimates of the test–retest correlations between 'true' attitudes, two years apart.

Given the high stability of true attitudes, the reliability estimates are only slightly larger than the observed test–retest coefficients. Because the estimated reliabilities of observed attitudes are in the range of ·5, about half the variance in observed attitudes is attributed to true attitude variance. The remaining half is error variance, or the variance of respondents' observed scores around their true score means.

If true attitudes remain virtually stable over time, then the observed changes in the panelists' responses represent mainly changes in random measurement error rather than true change. Given estimates of the item reliabilities, the reliabilities of the items' change scores can also be estimated.[13] Based on Wiley–Wiley estimates of the item reliabilities, the reliabilities of observed four-year changes in scores on the eight issues averages only ·11. Thus, virtually all observed changes in the panel's responses appear to be pseudo-changes generated by either faulty measurement or randomly responding non-attitude holders.

Although it is not original to interpret the panel data to mean that there occurred little true opinion change, the application of the Wiley–Wiley assumptions gives even more severe estimates of the lack of opinion change than suggested by Converse, Pierce and Rose, and Achen.[14] The possible implications of these estimates demand attention, and will be explored in the concluding section of this paper. Conveniently, the stability of true attitudes allows changes in observed attitudes to serve as measures of response error that are only slightly contaminated by true attitude change.

ACCOUNTING FOR THE RESPONSE ERROR

Because there was evidently little true attitude change among the panel respondents, virtually all of the observed attitude change represents measurement error. Different assumptions about the distribution of this error lead to different conclusions about the extent of opinion holding. As shown below, Converse's black-and-white model, which assumes true opinion holders respond accurately while random opinion holders respond randomly, fits the pattern of observed opinion change nicely. But as also shown below, the pattern of observed change can be fitted by a different model which assumes that the propensity for response error is split evenly among all respondents. The choice of models would be rather unimportant if there were little response error to explain. The choice becomes important, however, because if the assumptions of the black-and-white model were true, only a minority of the panel respondents held opinions on the issues examined.

the evidence disconfirms the notion that the high stability estimates were spuriously obtained as a result of low item reliability in 1958.

[13] The appropriate formula can be found in Frederick M. Lord, 'Elementary Models for Measuring Change', in Chester W. Harris, ed., *Problems in Measuring Change* (Madison, Wisc.: University of Wisconsin Press, 1963), pp. 21–38.

[14] Converse's estimates are based on an analysis of dichotomized responses, as discussed below. Pierce and Rose employ the Heise method to obtain estimates of true attitude stability on the domestic policy items. Achen obtains his estimates with the help of an assumption that true change scores over successive time intervals are uncorrelated with each other. For a comparison of the different methods, see Erikson, 'The Analysis of One-Variable Three-Wave Panel Data'

The Black-and-White Model

According to the black-and-white model, all observed attitude change is in fact random change by non-attitude holders. As a result, any respondent who changes his observed position on an issue is, according to the model, a non-attitude holder on that issue. It is important to note that Converse limits this prediction to changes from one side of an issue to the other (agree to disagree or *vice versa*) and *not* changes between 'strong' and 'weak' agreement or between 'strong' and 'weak' disagreement. This appears to be a reasonable limitation, as it is less likely that true attitude holders specify their degree of agreement or disagreement with perfect reliability than it is that attitude holders can reliably place themselves on one side of an issue. Accordingly, the black-and-white model is examined here only in terms of dichotomous responses – agree or 'pro' against disagree or 'con'. Also, for each issue the analysis is limited to respondents who give either a pro or a con response in each wave. The raw data for this analysis is shown in Table 3, which reports the observed frequencies of the eight possible response sequences for each of the eight issues. The task is to see whether the patterns can be accounted for by the existence of one group of 'random' respondents and another group of 'true' respondents.

Converse reports that the best fit of the black-and-white model is on the 'power and housing' issue. A glance at the 'power and housing' frequencies in Table 3 shows why the fit is so good; the three response sequences with two pro and one con response are nearly identical to one another in frequency, as are the three response sequences with two con and one pro response. Since 58·6 per cent of the 'inconsistent' respondents gave two pro and one con response, it could be imagined that the random respondents were flipping a biased coin that came up 'heads' (or pro) 58·6 per cent of the time. This yields the hypothetical division into random and true respondents shown in Table 4A. By this division, only 44 per cent of those who took sides on the issue in all three waves gave true opinions. Assuming (as Converse does) that all respondents who fail to take sides in at least one of the three panel waves also lack meaningful opinions, the holders of true opinions on 'power and housing' make up only 18 per cent of the entire sample.

The assumption that all observed shifters are random respondents flipping a coin with a constant bias does not yield as good fit on the remaining seven issues. As Converse has pointed out, however, if shifters are behaving randomly, those who shift in opposite directions between two waves would respond with identical frequency distribution at the third wave.[15] If all 1956–58 shifts were fluctuations in random behaviour, for 1956–58 shifters there should be no relationship between 1958 and 1960 positions. Similarly, if all 1958–60 shifts were fluctuations in random behaviour, for 1958–60 shifters there should be no relationship between 1956 and 1958 positions. Both of these tests are passed admirably by the 'power and housing' item and by the 'school aid' item. As a reflection of this result, these two items can be given a virtually perfect fit with a black-and-white model in which the

[15] Converse, 'Attitudes and Non-Attitudes', pp. 174–5; Converse, 'The Nature of Belief Systems in Mass Publics', fn. 39, p. 259.

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TABLE 3 *Distribution of Response Sequences (Pro versus Con) on Eight Opinion Items*

1956/1958/1960	Guaranteed job	School aid	Power and housing	School segregation	Fair employment	Isola-tionism	Foreign aid	Soldiers abroad
Pro–Pro–Pro	346	401	214	217	442	62	225	395
Pro–Pro–Con	38	59	31	38	25	20	25	24
Pro–Con–Pro	50	30	36	36	32	18	25	23
Pro–Con–Con	34	33	20	68	16	62	21	9
Con–Pro–Pro	52	19	42	51	42	34	59	50
Con–Pro–Con	22	23	31	41	18	56	19	8
Con–Con–Pro	54	12	26	44	27	32	22	13
Con–Con–Con	101	65	59	202	51	420	50	15
Total	697	642	459	697	653	704	446	537

Note: With three exceptions (`power and housing`, `school segregation`, and `isolationism`), the `pro` response is the liberal or internationalist response.

TABLE 4   *Fitting the Black and White Model, Assuming No Opinion Change*

| Response sequence | (A) Issue: *Power and housing* Assumption: Constant 'random' response probabilities Frequency | | | | (B) Issue: *School aid* Assumption: Changing 'random' response probabilities Frequency | | | |
	Observed	Expected =	Random +	True	Observed	Expected =	Random +	True
Pro–Pro–Pro	214	214*	51·4	162·6	401	401*	51·1	349·9
Pro–Pro–Con	31	36·3	36·3	0	59	58·3	58·3	0
Pro–Con–Pro	36	36·3	36·3	0	30	29·5	29·5	0
Pro–Con–Con	20	25·7	25·7	0	33	33·7	33·7	0
Con–Pro–Pro	42	36·3	36·3	0	19	20·1	20·1	0
Con–Pro–Con	31	25·7	25·7	0	23	22·9	22·9	0
Con–Con–Pro	26	25·7	25·7	0	12	11·6	11·6	0
Con–Con–Con	59	59*	18·1	40·9	65	65*	13·2	51·8
Total	459	459	255·5	203·5	642	642	240·4	401·7

Estimated probability of 'pro' response = ·586

Estimated probability of 'pro' response = ·718 in 1956, ·634 in 1958, and ·467 in 1960

* Expected and observed frequencies constrained to be equal.

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probability of a random pro response (the response bias) changes with time. Table 4B shows such a fit for 'school aid'. (The response bias of the random respondents for each year is determined by the marginals for that year among those expressing conflicting pro and con opinions in the remaining two years.) If this fit represented reality, one would conclude that only 35 per cent of the entire sample held true opinions on this issue.

On the other six issues, the direction of 1956–58 shifts are generally correlated with 1960 responses, indicating some true change between 1956 and 1958. But the relationships between 1956 and 1958 responses among 1958–60 shifters were generally slight, indicating virtually no true change between 1958 and 1960. Assuming no 1958–60 changes by true opinion holders, it is possible to fit the response sequences to black-and-white models that include some 1956–58 changes among the true opinion holders. Two examples are shown in Table 5.

Table 5A shows such a fit on 'foreign aid'. Here, random respondents were assumed to split ·557 pro and ·445 con on each wave and 34 true opinion holders were assumed to switch from con to pro between 1956 and 1958 and maintain their position in 1960. (Actually, these hypothetical unidirectional 1956–58 changes need not be thought of as changes in relative opinion on the underlying foreign aid continuum, but rather as change in the item's cutting point in 1958.) It may be noted that if this model represented reality, less than one quarter of American adults held actual positions on foreign aid.

A final illustration of the fit of a black-and-white model is on the 'school segregation' issue. Here, in Table 5B, it is assumed that both true and random respondents continually divide 50–50 while some bi-directional true change occurs between 1956 and 1958. If this model is correct, only one-third of the entire sample held true opinions on the presumably salient issue of segregated versus integrated schools during the late 1950s.[16]

The results here verify Converse's interpretation of what the data indicate if the assumptions of the black-and-white model are correct. In fact, if the assumptions of the model are correct, Converse may even have understated the implications. We have seen that the fit of the black-and-white model can extend beyond the notorious 'power and housing' item if one is flexible with the assumptions to allow changing random response biases or a small number of true attitude holders to change their positions. Assuming the noise in the panel responses is the result of random responses by non-attitude holders, non-attitude holders comprise a significant share of the public on even the most salient issues.

[16] By assuming equal response distributions for true and random responses on 'school segregation', one allows the variance of true attitudes on the underlying continuum to be uncorrelated with the error variance. In the previous black-and-white model examples (Tables 4A, 4B, 5A), the dichotomous divisions of random responses were allowed to differ from the divisions of true responses, thus violating the usual assumption in reliability analysis that true and error variances are uncorrelated. It may be noted that in all the examples of Tables 4 and 5 the non-attitude holders' probabilities of a 'pro' response (their mean responses) can actually be considered their 'true' positions. For example, the true attitudes of non-opinion holders on 'power and housing' are assumed to be a ·586 probability of a 'pro' response. Thus, the term 'non-attitude' is technically a misnomer in the sense that by definition, every respondent has a theoretical mean (true) position.

TABLE 5   *Fitting the Black and White Model, Assuming 1956–1958 Opinion Change*

	(A) Issue: *Foreign aid* Assumptions: Constant 'random' response probabilities; unidirectional 'true' shift, 1956–1958 Frequency					(B) Issue: *School segregation* Assumptions: Identical, constant response probabilities for both 'random' and 'true' responses; bidirectional 'true' shift, 1956–1958 Frequency				
Response sequence	Observed	Expected	=	Random	+ True	Observed	Expected	=	Random	+ True
Pro–Pro–Pro	225	225*		30·3	194·7	217	209·5		39·8	169·7
Pro–Pro–Con	25	25		25	0	38	39·8		39·8	0
Pro–Con–Pro	25	25		25	0	36	39·8		39·8	0
Pro–Con–Con	21	20·7		20·7	0	68	59·5		39·8	19·7
Con–Pro–Pro	59	59*		25	34	51	59·5		39·8	19·7
Con–Pro–Con	19	20·7		20·7	0	41	39·8		39·8	0
Con–Con–Pro	22	20·7		20·7	0	44	39·8		39·8	0
Con–Con–Con	50	50*		16·5	33·5	202	209·5		39·8	169·7
Total	446	446·1		183·9	262·2	697	697·2		318·4	378·8
		Estimated probability of 'pro' response = ·57					Assumed probability of 'pro' response = ·50			

* Expected and observed frequencies constrained to be equal.

The Latent Attitude Model

As an alternative to the black-and-white model for fitting the dichotomized response data, one can assume that the observed changes in the dichotomous pro and con responses are merely manifestations of ordinary error in measuring true attitude variation on the underlying attitude continuum. With dichotomous responses, the analogue to the interval-level assumption that the error variance is equally distributed is that the dichotomized responses are probabalistic functions of true attitudes on an underlying, latent, continuum. This alternative set of assumptions will be labelled the 'latent attitude' model.[17]

In test theory, the trace line describing how the probability of a positive response varies as a function of the latent attitude is often considered to take the nonlinear shape of a normal-ogive.[18] Given the normal-ogive assumptions, the respondent's probability of a positive response can be transformed into the corresponding unit normal deviate (or z), which converts the dependent variable into a linear function of true latent attitudes. Assuming no true attitude change and assuming true attitudes on the latent continuum are normally distributed, the dichotomized item's test–retest tetrachoric correlation coefficients (r_t's) represent the product-moment correlations between z's at the different waves. With this information, one can estimate the reliabilities of z at the three waves to obtain the standardized regressions (r's) of the z's onto true scores. Transforming the z's back into response probabilities gives estimates of the trace lines.

As an example, Table 6 gives the estimated probabilities of a 'pro' response at various standardized values of latent attitudes on the 'power and housing' item. This process, based on the assumption that respondents who took sides in all three waves have true attitudes that are normally distributed, could account for the distribution of pro and con response sequences on 'power and housing', shown in Table 3.[19]

Whereas both the black-and-white model and the latent attitude model assume some dichotomized opinion responses that are probabilistic in nature, there are important differences. According to the black-and-white model, all non-attitude holders on a given item respond probabilistically according to a constant probability schedule. Thus, hypothetically, if such non-attitude holders were interviewed many times, they could not be distinguished from one another in their frequencies of responding 'pro' or 'con'. According to the latent attitude model, however, each

[17] Converse appears to have recognized the possibility of this alternative model. See 'The Nature of Belief Systems', fn. 41, p. 259; and 'Attitudes and Non-attitudes', p. 175.

[18] Useful discussions of normal-ogive models can be found in Frederick M. Lord and Melvin R. Novick, *Statistical Theories of Mental Test Scores* (Reading, Mass.: Addison-Wesley, 1968), pp. 358–94; and in Warren S. Torgerson, *Theory and Method of Scaling* (New York: Wiley 1958), pp. 385–91.

[19] Because the z's are directly analogous to the standardized observed responses in the interval-level measurement error models, one can employ the Heise method on the r_t's to estimate the stability of latent attitudes and the reliabilities of the z's under the assumption of attitude change. Such stability and reliability estimates tend to be slightly higher than when the Heise method is employed directly on the five-point responses. Thus, the hypotheses that true attitudes are highly stable receives additional support from a test that does not assume interval-level measurement of observed attitudes.

TABLE 6   *Estimated Probability of a 'Pro' Response to the 'Power and Housing' Item as a Function of the Respondent's Position on a Latent Attitude Continuum*

	Standardized, latent attitude				
	(Liberal)				(Conservative)
	−2	−1	0	+1	+2
1956	·05*	·32	·66	·96	1·00
1958	·11	·39	·69	·95	1·00
1960	·07	·36	·69	·97	1·00

* Cell entries are probabilities of a 'pro' response. For example, assuming normally distributed latent attitudes and equal error variances, in 1956 a person at −2 on the latent 'power and housing' continuum (two standard deviations more liberal than the mean) had a ·05 probability of giving a 'pro' (or conservative) response to the 'power and housing' item.

respondent has a unique probability of giving a 'pro' response. Thus, hypothetically, over many interviews these respondents would display different frequencies of 'pro' responses, based on their unique probability schedules. Because each frequency would correspond to a different position on the latent attitude continuum, such respondents would manifest true variance in their underlying attitudes.

It is possible, of course, that the true state of affairs is a mixture of the two models – with the most sophisticated respondents contributing disproportionately to the response variance observable over many interviews. One may also conceptualize the possible distributions of response error at the interval level of measurement. Although the distinction between the black-and-white model and its alternatives was discussed above in terms of dichotomized responses, this was only done because the black-and-white model appears most plausible in that form.[20] It is certainly plausible to state the polar alternative to the black-and-white model in interval-level form simply by assuming each respondent to have the identical error variance. On such an assumption, after many interviews each respondent's mean position on each five-point scale would approach his true opinion, and each respondent would display approximately the same personal variance around his personal mean. A mixed model would assume some differences in personal variances around the personal means.

[20] Particularly if the marginal distributions are constant over time, the interval-level version of the black-and-white model would assume that any change in position along the five-point scale (such as from 'strongly agree' to 'agree') is evidence of random behaviour. This extreme model can readily be rejected on the basis of empirical evidence. See Pierce and Rose, 'Nonattitudes and American Public Opinion', pp. 634–5.

ARE NON-STABLE RESPONSES NON-ATTITUDES?

Because they lead to different inferences about the extent of opinion holding, it is important to test the relative validity of the different models of response error. If more than three panel waves were available, the test would be straightforward because the competing models would give different predictions about the frequencies of response combinations. Restricted to only three panel waves, one can still test indirectly the key assumption of the black-and-white model.

The black-and-white model assumes that virtually all respondents who are observed to change sides on an issue are actually engaging in random behaviour. If this shifting behaviour is truly random, the observed attitudes of shifters should not correlate with anything. For example, respondents who agree with an item twice and disagree once ought to have observed attitudes on other issues that are no different from those who agree once and disagree twice.

A test of this sort is performed in Table 7. For this test, respondents are assigned an opinion tendency for each item, based on their modal pro versus con response. Table 7 shows the association (Yule's Q) between opinion tendencies on separate items – by subgroups. Subgroup assignment is based on the patterns of temporal consistency to the responses to each of the two items.

In Table 7, the Qs of column 1 are based on all respondents who respond consistently (pro–pro–pro or con–con–con) to both items in the issue pair. On the black-and-white assumptions, these respondents include mainly the minority of true opinion holders. On the opposite assumption that measurement error is equally distributed, these consistent respondents may be thought of as relatively extreme scores on the two issues. On either set of assumptions, the inter-item correlations should be highest for this group, and this expectation is confirmed. In fact, for several issue pairs the Q approaches or equals 1·00, indicating that the two items approach perfect (Guttman) scaleability for respondents who consistently stay on one side of each issue.

The Qs in column 2 of Table 7 are based on all respondents who respond inconsistently to at least one of the two items in the issue-pair. By the black-and-white assumptions the vast majority of these respondents were responding randomly to at least one of the two items, so their modal observed opinions on the two issues should not be correlated. But this prediction is not supported. For virtually all issue-pairs for which the correlations of column 1 (consistent respondents) depart appreciably from zero, the correlations in column 2 (inconsistent respondents) do also, and in the same direction. Thus, the evidence forces us to reject a literal interpretation of the black-and-white model.[21]

In Converse's discussions of the black-and-white model, an implicit assumption

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[21] 'Purifying' the inconsistent-response group by including only those who respond inconsistently on both items reduces the working Ns down to the thirty to sixty range. Though erratic, the Qs for these purified groups tend in the expected direction, particularly for issue-pairs with very high Qs for the 'consistent' responses. For all five issue-pairs on which the Qs for 'consistent' respondents exceed ±·90, the Qs for those inconsistent on both issues are in the expected direction, with an average departure from zero of ·32.

TABLE 7   *Inter-item Correlations (Yule's Q) Between Modal Opinions (Pro versus Con), by Within-item Consistency*

	Responses to both items consistent	Responses to at least one item inconsistent	Non-response at least once to at least one item
Guaranteed job correlated with			
School aid	·99	·51	·76
Power and housing	·63	·23	·18
School segregation	·56	·11	·07
Fair employment	·93	·21	·55
Isolationism	−1·00	−·69	−·46
Foreign aid	−·20	−·31	·80
Soldiers	·28	−·37	−·12
School aid correlated with			
Power and housing	·83	·38	·15
School segregation	·56	·26	·27
Fair employment	·76	·44	·51
Isolationism	−·81	−·31	−·29
Foreign aid	·13	−·17	·09
Soldiers	·79	·18	·17
Power and housing correlated with			
School segregation	·37	·13	·27
Fair employment	·41	−·03	−·05
Isolationism	−·29	−·11	·21
Foreign aid	−·30	·25	−·24
Soldiers	−·80	−·20	−·01
School segregation correlated with			
Fair employment	·99	·73	·63
Isolationism	·23	·18	·32
Foreign aid	·57	·09	·23
Soldiers	·42	·24	−·18
Fair employment correlated with			
Isolationism	−·22	−·44	·03
Foreign aid	·82	−·02	·44
Soldiers	·28	−·18	·02
Isolationism correlated with			
Foreign aid	·97	·42	·65
Soldiers	·82	·50	·55
Foreign aid correlated with			
Soldiers	·79	·38	·38
(Range of Ns)	(83–255)	(147–303)	(366–535)

Note: All but three items ('power and housing', 'school segregation', and 'isolationism') are worded so that agreement is the 'liberal' response. The polarities of these items have been reversed for this table, so that in each case a positive correlation indicates a positive relationship between liberalism (or internationalism) on one item and liberalism (or internationalism) on the other.

is that people who fail to take sides on an issue in at least one of the three waves are also non-attitude holders. If this assumption is correct, the modal opinions of those who only occasionally take sides on an issue should not be correlated with opinions on other issues. Column 3 of Table 7 gives the Qs between opinion tendencies for the large numbers of respondents who failed to take sides at least once on at least one of the two items in the issue pair. Because these correlations also tend to be non-zero and in the appropriate direction it is not justifiable to conclude that a person's expressed opinion on one occasion is a random non-attitude simply because on another occasion he failed to take a position on the issue.

ITEM RELIABILITY AND POLITICAL SOPHISTICATION

The preceding test shows only that the black-and-white model should be rejected in its purest form. It is still possible that the reliability of people's responses to issue items increases with their political sophistication. If this were true, one could say that responses would generally be more reliable for the entire sample if the public were only more sophisticated.

Achen attempts a test of whether individuals' error variance declines with increasing political sophistication. Achen's approach is to regress individuals' estimated error variances on the opinion items onto a set of presumed behavioural and demographic indicators of political sophistication. Only three of the eight regression equations were even statistically significant.[22] Although measurement error in the estimated error variance contributed to this result,[23] the unbiased regression coefficients were generally so low that even a big boost in, say, education or trying to influence others was estimated to cause only a tiny decline in error variance. Achen therefore concludes that respondents' error variance declines little, if at all, with increasing political sophistication.

The approach to the problem here is somewhat different from Achen's. Here, the first step is the construction of a composite index of political sophistication rather than treating the component indicators separately. The composite index of political sophistication is simply the addition of the following components:

(1) *Voting.* Three points for each vote cast in 1956, 1958 and 1960.

(2) *Political Involvement.* The average score (over three waves) on the SRC 'political involvement' index. The range is 1–9, with the polarity reversed so that 9 is a 'high' score.

(3) *Political Activity.* One point for each political activity reported in 1956 and for each political activity in 1960 (trying to influence others, displaying campaign slogans, giving money, attending meetings, working in a campaign, belonging to a political organization).

(4) *Mass Media Attention.* One point for each of the mass media monitored during the 1956 campaign and one point for each of the mass media monitored during the 1960 campaign (newspapers, television, radio, magazines).

[22] Achen, 'Mass Political Attitudes and the Survey Response', pp. 1226–9.
[23] John E. Hunter and T. Daniel Coggin, 'Communication', *American Political Science Review*, LXX (1976), 1226–9.

TABLE 8   *Correlations among Components of 'Political Sophistication' Index*

| Component measure | Component measure | | | | Composite political sophistication score |
	Political involvement	Political activity	Media attention	Political knowledge	
Voting	·46	·31	·40	·42	·75
Political involvement	—	·36	·50	·54	·74
Political activity	—	—	·36	·36	·61
Media attention	—	—	—	·51	·71
Political knowledge	—	—	—	—	—

Note: For construction of component measures, see text.

(5) *Political Knowledge.* Four points for correctly reporting the Republicans to be the more conservative party in 1960, plus the score on the SRC's knowledge of congressional candidates index in 1958 scaled from 0 (low) to 4 (high), plus the score on the 'general interest in politics' question in 1960, scaled from 0 (low) to 4 (high).

Added together, the various components comprise an index with possible scores ranging from 1 to 50.[24] Each of the five components has approximately equal weight in the construction of the index, in the sense that the components' standard deviations are approximately equal. Their modestly high intercorrelations are shown in Table 8. Indications of the index's validity are the correlations of the composite index with education ($r = +·39$) and with frequency of attitude responses to the eight opinion items ($r = +·48$).

The error variances for individual respondents were estimated by simply scoring, for each 5-point issue item, the observed over-time variance of each respondent's standardized scores in the three waves.[25] The intercorrelations of these eight estimates of error variance (one estimate for each issue item) are of interest in themselves, as the average of the twenty-eight product-moment correlations is only $+·04$. Thus there appears to be virtually no common source of variance in individuals' response stabilities on separate issue items. In other words, one cannot predict the stability of an individual's response on one issue from the stability of his responses on other issues.

The range of correlations between the respondents' estimated error variance and 'political sophistication' is $-·14$ (isolationism) to $+·16$ (guaranteed job). The average

[24] The rare 'no answer' responses to these items were coded as zeros. Because some of the 'political sophistication' components were obtained from 1956 and 1960 post-election interviews, respondents who were not surveyed in both post-election waves are not given 'political sophistication' scores.

[25] The estimates of respondent error variance are far from perfect measures, since the estimates are based on only three opinion readings. These estimates may also reflect a certain amount of true attitude change, although this contamination ought to be slight. Achen's method of estimating respondent error variance is a little different from that employed here.

correlation is + ·02, indicating the tiniest trace of a tendency for the most politically sophisticated to give the most unstable responses. Thus it hardly seems that response instability can be blamed on an unsophisticated electorate.

Perhaps the most visually appealing way to demonstrate the non-relationship between political sophistication and response stability is to compare the test–retest correlations for respondents who are very high in political sophistication with those for respondents very low in political sophistication. Highly sophisticated respondents were defined as the top 24 per cent with sophistication scores greater than 31·0; respondents low in political sophistication were defined as the bottom 33 per cent with sophistication scores no greater than 20·0. By this division, each group generally comprised slightly over one quarter of the opinion volunteers for whom test–retest correlations could be calculated. Table 9 shows the mean test–retest correlations for the two extreme groups on the 'political sophistication' index. The correlations for the 'high' sophisticates tend to be only slightly larger than those for respondents 'low' in sophistication.[26] Similar results are obtained when one measures political sophistication by the respondent's education. In fact, the test–retest correlations tend to be slightly lower for college graduates than for those with only a grade school education.

TABLE 9   *Mean Test–Retest Correlations by Extremes of Political Sophistication and Education*

	1956–58	1958–60	1956–60	Mean
High sophistication (*N*s = 190–219)	·42	·37	·36	·38
Low sophistication (*N*s = 122–265)	·33	·43	·32	·36
College graduates (*N*s = 76–91)	·35	·42	·37	·38
Grade school only (*N*s = 138–262)	·39	·46	·38	·41

As still one more test, we can compare the patterns of dichotomous response sequences for the two extremes of sophistication, to see whether a shift between 'pro' and 'con' responses is more frequent for the less sophisticated group. On only two of the eight issues are the marginal pro versus con frequencies of the two groups roughly equal, making this test possible.[27] Conveniently, these two issues are 'power and housing' and 'school segregation' – presumably one of the least salient and one

[26] Differences between test–retest correlations for high and low sophisticates may reflect differences in true attitude variance and differences in true attitude stability as well as differences in error variance. Based on the Wiley–Wiley method, the estimated error variances on the eight items actually tend to be slightly higher for the high sophisticates than for low sophisticates.

[27] On most issues, opinion direction and sophistication scores are correlated in the manner one would expect from the relationship between political sophistication and high socioeconomic status. For example, the low sophisticates are largely in favour of guaranteed jobs and aid to schools, while high sophisticates are divided. On foreign policy issues, high sophisticates generally take an internationalist position, while low sophisticates are more divided.

TABLE 10   *Dichotomous Response Sequences on 'Power and Housing' and 'School Segregation', by Extremes of Political Sophistication Scores*

1956/1958/1960 sequence	Low sophistication	High sophistication
	Power and housing	
Pro–Pro–Pro	43%	50%
Pro–Pro–Con	5	7
Pro–Con–Pro	9	6
Pro–Con–Con	5	4
Con–Pro–Pro	15	7
Con–Pro–Con	5	10
Con–Con–Pro	5	5
Con–Con–Con	12	10
	99%	100%
	($N = 75$)	($N = 135$)
	$\chi^2 = 6 \cdot 76$; D.F. $= 7$; N.S. at $\cdot 40$ level	
	School segregation	
Pro–Pro–Pro	33%	32%
Pro–Pro–Con	5	7
Pro–Con–Pro	7	6
Pro–Con–Con	8	10
Con–Pro–Pro	9	5
Con–Pro–Con	6	5
Con–Con–Pro	8	7
Con–Con–Con	25	27
	101%	100%
	($N = 173$)	($N = 177$)
	$\chi^2 = 3 \cdot 01$; D.F. $= 7$; N.S. at $\cdot 90$ level	

of the most salient of the issues examined. Table 10 shows the frequencies of the different response sequences of these two issues, by extremes of political sophistication. It can readily be observed that on each issue the frequencies of consistently pro responses and consistently con responses are very similar for the two groups. In fact, on each issue the difference between the frequency distributions for the two groups is not even close to being statistically significant.

Because the same general level of response instability is found for both the more and the less sophisticated, one cannot blame the noise in the panel's opinion data on an unsophisticated electorate. If one is to assign 'blame' for the unstable responses, the blame must lie with the perhaps unavoidably fallible measuring instrument.[28] To say that the measurement is at fault for the low reliability of the

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[28] It is conceivably a mistake to assume that the response stabilities of the most politically sophisticated respondents should serve as the standard for the instrument. For example, we

opinion responses might seem to imply that the Survey Research Center was guilty of sloppy question-wording. To be sure, the SRC has modified its policy questions from the perhaps noisy, 'agree versus disagree' format of the panel years to the seemingly more sophisticated seven-point attitude scales employed in recent surveys. However, it may be that even the most carefully constructed attitude question would produce responses that approximate the level of instability found in the SRC panel.

If the opinion items' low reliabilities are caused neither by an unsophisticated electorate nor by sloppy question-wording, what do the low reliabilities tell us about the policy attitudes of the American public? In an attempt to answer this question, we may retreat to a discussion of the concept of 'reliability'. A reliability estimate is the estimate of the proportion of the observed total (true score + error) variance that is accounted for by the true score variance rather than by the error variance. Because reliability estimates are standardized measures, one could think of the items' low reliabilities as signifying 'low' true score variance rather than signifying 'high' error variance. If true attitudes were more polarized, while the error variance remains the same, the reliabilities of the issue items would be higher. Thus, in one sense the cause of the issue items' low reliability is the relatively limited attitude variation within all segments of the American public regardless of their levels of political sophistication.

INTER-ITEM CORRELATIONS OVER TIME

In addition to test–retest correlations, correlations between attitudes on different items can be examined as a function of the time lag between readings. It is interesting that correlations between items measured two years apart are of the same magnitude as the correlations between different items measured four years apart. (The average absolute value of Pearson's r in each case is ·10.) This is further indirect evidence that true attitudes are basically stable over time. The correlations tend to be slightly stronger between items measured in the same interview, but this can be explained as the result of momentary sources of consistency – such as correlated error

might imagine that the stability of a person's responses to an item is a function of his interest in the issue, but that interest in the issue is not correlated with political sophistication. But for this to be true, respondents' levels of interest in different issues must be statistically independent of each other, to allow for the fact that response stability on one issue cannot predict response stability on another issue.

In his initial discussion of the panel data, Converse ('The Nature of Belief Systems', pp. 245–6) notes surprisingly little tendency for stable respondents (with consistently pro or consistently con opinions) on one issue to be stable respondents on other issues. This finding led Converse to suggest the existence of separate 'issue publics' for each issue – virtually non-overlapping sets of people who are concerned about different issues. In other words, people may be sufficiently concerned about some issues to express true attitudes, but uninterested in other issues, upon which they therefore express non-attitudes.

Although we have rejected the strict black-and-white interpretation of the panel's issue items, the possibility remains for a milder version of Converse's 'issue public' hypothesis. People may tend to give their most stable responses on certain issues which are of greatest interest to them. If so, the measuring instrument obtains highly reliable responses when people are sufficiently interested. Although this interpretation is compatible with the data, it requires interest levels on given issues to be uncorrelated with each other or with political sophistication.

variances or, perhaps, a tendency for respondents to give artificially constrained responses in order to appear consistent.

The low values of these inter-item correlations are well known. Converse suggests that the low inter-item correlations indicate a certain lack of attitude constraint on the part of the American public.[29] As Pierce and Rose, and Achen, have pointed out, however, the observed inter-item correlations are attenuated by the items' low reliabilities.[30] For any two items, the estimated correlation between true attitudes can be obtained by dividing the observed correlation by the square root of the product of the two items' reliabilities. Estimates of the correlations between true attitudes were obtained by this procedure and are shown in Table 11. For each issue pair, the average of the six correlations between the two items measured in different years serves as the observed correlation and the item reliabilities obtained by the Heise method (see Table 2, p. 95) serves as the reliability estimates.

Because the estimated item reliabilities are in the ·5 range, the corrected coefficients shown in Table 11 are generally about twice the size of the original correlations between observed attitudes.[31] The matrix shows clearly that the strongest correlations tend to cluster within common issue domains. One can identify a 'social welfare' cluster of 'guaranteed job', 'school aid', and 'power and housing', a 'civil rights' cluster of 'school segregation' and 'fair employment', and a 'foreign policy' cluster of 'isolationism', 'foreign aid' and 'soldiers abroad'.

Although more structure can be observed among the estimated true correlations than among the observed correlations, the estimated true correlations are never very large and do not reveal a single common dimension of liberalism–conservatism. One may ask whether a more politically sophisticated electorate would display greater evidence of ideological coherence. As a test, true inter-item correlations were estimated separately for those low and high on the political sophistication index. The correlations for the high sophisticates did not display a convergence toward a single-dimension of liberalism–conservatism. However, the high sophisticates generally showed slightly stronger correlations between items within issue domains than did the low sophisticates (unadjusted average absolute values of ·47 versus ·35). If one assumes that the most politically sophisticated respondents set the standard for the remainder of the electorate, the correlations between attitudes on similar issues lag behind what they 'should' be, but the low correlations between attitudes on issues that are not closely related should not be a cause for concern.[32]

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[29] Converse, 'The Nature of Belief Systems in Mass Publics', pp. 227–34.

[30] Pierce and Rose, 'Nonattitudes and American Public Opinion', p. 645; Achen, 'Mass Political Attitudes and the Survey Response', p. 1229.

[31] The magnitudes of the correlations shown in Table 10 are not comparable to those reported by Converse and in Table 7 on p. 105 above, since different measures of association are employed. Converse's gammas and Table 7's Qs for dichotomized scores give inflated coefficients relative to Pearson's r, used in Table 10.

[32] In a study of attitude constraint in the 1960s, Bennett also finds little tendency for inter-item correlations to increase with presumed indicators of political sophistication. See Steven E. Bennett, 'Consistency in the Public's Social Welfare Attitudes in the 1960s', *American Journal of Political Science*, XVII (1973), 544–70. For a study with contrary findings, see Robert Axelrod, 'The Structure of Public Opinion on Policy Issues', *Public Opinion Quarterly*, XXXI (1967), 51–60.

TABLE 11   *Estimated Matrix of Correlations Among 'True' Opinions*

	School aid	Power and housing	School segregation	Fair employment	Isolationism	Foreign aid	Soldiers abroad
Guaranteed job	·63	·28	-·09	·45	-·40	-·01	·03
School aid	—	·33	-·16	·36	-·25	·08	·11
Power and housing		—	-·18	-·18	·03	·00	-·05
School segregation			—	·57	·14	·18	-·01
Fair employment				—	-·08	·25	·07
Isolationism					—	·44	·26
Foreign aid						—	·27

Note: All but three items ('power and housing', 'school segregation', and 'isolationism') are worded so that agreement is the 'liberal' response. The polarities of these items have been reversed for this table, so that in each case a positive correlation indicates a positive relationship between liberalism (or internationalism) on one item and liberalism (or internationalism) on the other.

CONCLUSIONS

The evidence reported in this paper leads to a rejection of the portrayal of the American public as largely comprised of people without attitudes on policy issues. The image of the public's policy attitudes suggested by this analysis of the SRC panel data can be summarized as follows:

(1) Responses to opinion items are unreliable. On the average item, about half the variance in the observed scores is variance in true opinions and about half is error variance.

(2) Contrary to Converse's black-and-white model, the response error cannot be attributed to randomly responding opinion holders. Moreoever, because the reliability and error variance do not vary with the respondent's level of political sophistication, one cannot say that the items' low reliabilities are the result of the public's lack of political sophistication. The issue items' low reliabilities can be attributed to the public's relatively low variation in true attitudes on these issues. If the public were more strongly polarized into opposite camps with extreme views on these issues, the reliability estimates would have been considerably higher.

(3) When observed inter-item correlations between policy views are corrected for reliability, the estimated correlations between true attitudes on different policy issues inflate to about twice their observed size. The sometimes relatively high values indicate a greater constraint between attitudes on similar issues than previously thought. These estimated correlations become even more impressive given the public's apparent lack of extreme views on the related issues.

(4) Despite the considerable amount of observed opinion turnover on policy issues, peoples' true attitudes on policy issues are highly stable over time. Similarly, the correlations between opinions on different issues at different times do not vary with the time gap between measurement. The structure of an individual's policy views appears to be generally static rather than dynamically evolving.

This interpretation – little true attitude change in the short run – is not new here, as the same interpretation has also been suggested in previous studies of the panel's policy items. However, the possible implications of this somewhat dissonant finding have received little discussion. If one incorporates the notion of little short-run attitude change with the other interpretations of this paper, one arrives at the position that people vary in true attitudes that are modestly constrained and stable. If adult Americans possess stable, somewhat constrained attitude structures on policy matters, where do these attitude structures come from? Apparently people do not develop their attitude structures during adulthood, because adults undergo little attitude change. Therefore, adult attitudes must be formed during the mysterious process known as pre-adult political socialization.[33]

[33] In exact opposition to the assertion made here, Searing *et al.* have argued that because observed adult attitudes are unstable and relatively uncorrelated with one another, there is little structure to adults' political attitudes that can be explained by pre-adult political socialization. See Donald D. Searing, Joel J. Schwartz and Alden E. Lind, 'The Structuring Principle: Political Socialization and Belief Systems', *American Political Science Review*, LXVII

This paper began with the assertion that the SRC's panel study of the late 1950s offers an exceptionally rich body of data for understanding the nature of public opinion. Although interpretations from these data may be culture-bound or time-bound, similar analyses of other panel data sets could reveal whether this is the case. Further analysis of the Butler and Stokes panel from the 1960s could produce greater understanding of the source of response instability to policy items in the British context. The recently completed 1972–74–76 American panel study conducted by the Center for Political Studies might yield interpretations different from the earlier American panel. The more volatile political climate may have resulted in greater amounts of true attitude change in the 1970s than in the 1950s. Item reliabilities may have increased, whether due to a more polarized public or improved question wording. It has already been reported that inter-item constraint in the United States has increased over the years,[34] but this may be an artifact of improved question-wording.[35]

Although it is now fashionable to view the American public as more issue-oriented than in the past, the change may not be so great as commonly perceived. The argument is not that we necessarily tend to 'overrate' the current public but that we may have tended to 'underrate' the earlier public. This paper has shown that one can interpret the SRC panal data as indicating a greater underlying structure to Americans' policy views during the politically quiescent Eisenhower years than has generally been recognized.

(1973), 415–32. Of course, adult attitudes are not entirely formed during the pre-adult years. The estimate that policy attitudes are quite stable over a two or four-year span does not imply that adult attitudes rarely change in the longer run. For example, from the average Wiley–Wiley estimate of attitude stability over four years ($.87 \times .97 = .84$), the projected attitude stability over n four-year spans is $.84^n$. Thus, say, over a span of thirty-two years the stability of attitudes would be $.84^8$, or only $.25$.

[34] Norman Nie, Sidney Verba and John R. Petrocik, *The Changing American Voter* (Cambridge, Mass.: Harvard University Press, 1976), pp. 123–55.

[35] George Bishop, Alfred J. Tuchfarber and Robert W. Oldendick, 'Change in the Structure of American Political Attitudes: The Nagging Question of Question Wording', *American Journal of Political Science*, xxii (1978), 250–69; John L. Sullivan, James E. Piereson and George E. Marcus, 'Ideological Constraint in the Mass Public', *American Journal of Political Science*, xxii (1978), 233–49.