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Author(s): Harold D. Clarke, Allan Kornberg, Chris McIntyre, Petra Bauer-Kaase and Max Kaase

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The Effect of Economic Priorities on the Measurement of Value Change: New Experimental Evidence

HAROLD D. CLARKE *University of North Texas*

ALLAN KORNBERG *Duke University*

CHRIS McINTYRE *Endicott College*

PETRA BAUER-KAASE and MAX KAASE *Wissenschaftszentrum*

The Euro-Barometer values battery has provided much of the empirical evidence for the thesis that a shift from materialist to postmaterialist values has occurred in advanced industrial societies over the past two decades. It has been argued, however, that this widely used instrument is seriously flawed because of its sensitivity to current economic conditions. We present data from experiments in Canada and Germany that tested the performance of the values battery in an era of joblessness. Analyses reveal that (1) substituting an unemployment statement for the standard inflation statement in the battery has major consequences for the classification of respondents as materialist or postmaterialist and (2) answers to the battery are conditioned by the interaction between its content and respondents' economic issue concerns. These findings support the argument that much of the shift from materialist to postmaterialist values recorded by the Euro-Barometer since the early 1980s is a measurement artifact.

The thesis that advanced industrial societies are undergoing a shift from materialist to postmaterialist values (e.g., Inglehart 1971, 1977, 1990, 1997; see also Abramson and Inglehart 1992, 1995) has been a source of continuing controversy.¹ One important debate concerns the measurement properties of the four-item values battery administered in the biannual Euro-Barometer surveys. Critics (Clarke and Dutt 1991; Clarke, Dutt, and Rapkin 1997a, 1997b; see also Boeltken and Jagodzinski 1985; Duch and Taylor 1993, 1994) have argued that responses to the Euro-Barometer questions are influenced strongly by current economic conditions. Since these conditions have changed markedly over the past two decades in most mature democracies, the values battery provides an inaccurate measure of the extent of transition from materialism to postmaterialism. In response, advocates of the thesis have vigorously reasserted their claim that the Euro-Barometer battery is adequate to the task that they have assigned it (Abramson, Ellis, and Inglehart 1997; Inglehart 1997; Inglehart and Abramson 1994).

To date, this debate has been conducted primarily using aggregate-level time-series data. This is because

of an absence of individual-level data that would enable comparison between the Euro-Barometer values battery and an alternative battery that better reflects respondents' current economic issue priorities. Such data are now available from experiments conducted in Canada in 1996 and in Germany in 1996 and 1997. This article presents the results. After a summary critique of the measurement properties of the four-item battery, the survey experiment is described, and Canadian data are presented. Multivariate analyses are employed to investigate interactions between responses to the values battery and economic issue priorities. Next, the analyses are replicated and extended using data gathered in Germany. The conclusion summarizes major findings and discusses their implications for studying the dynamics of political beliefs in advanced industrial societies and elsewhere.

ECONOMIC CONDITIONS AND SURVEY RESPONSES

The four-item materialist-postmaterialist value battery has appeared regularly in biannual Euro-Barometer surveys since the mid-1970s.² Respondents are asked to think about what "this country's goals should be for the next ten or fifteen years" and to choose one of four items as "most important in the long run." The items are: (1) maintaining order in the nation, (2) giving the people more say in important government decisions, (3) fighting rising prices, and (4) protecting freedom of speech. They then are asked to select the second most important item. Persons choosing (1) and (3) (in any order) are classified as materialists, and those choosing

Harold D. Clarke is Regents Professor of Political Science, University of North Texas, Denton, TX 76203; Allan Kornberg is Norb Schaefer Professor of Political Science, Duke University, Durham, NC 27708; Chris McIntyre is Assistant Professor, Department of Political Science, Endicott College, Beverly, MA 01915; Petra Bauer-Kaase is Professor, Wissenschaftszentrum fuer Sozialforschung, Reichpietschufer 50, D-10785 Berlin, Germany; Max Kaase is Professor, Wissenschaftszentrum fuer Sozialforschung, Bassermannweg 14B, D-12207 Berlin, Germany.

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¹ For references to the voluminous literature generated by the thesis, see Inglehart 1990, 461-76, and 1997, 431-44.

² Versions of the battery were administered in several West European countries in the early 1970s, but it did not become a regular Euro-Barometer feature until the middle of that decade. Also, some early surveys did not employ what is now the standard preamble to the battery.

(2) and (4) are classified as postmaterialists. Others are placed in a mixed category.

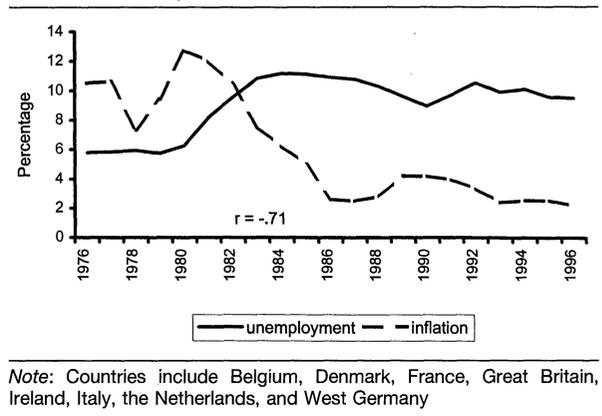
Reflecting themes in recent theoretical analyses of the survey responses (see, e.g., Sniderman, 1993; Sniderman, Brody, and Tetlock 1991; Zaller 1992; Zaller and Feldman 1992), Clarke and Dutt (1991) and Clarke, Dutt, and Rapkin (1997a) contend that answers to the Euro-Barometer values battery reflect the economic circumstances that obtain at the time of the interview. In particular, answers are strongly affected by current economic conditions. Although Inglehart (e.g., 1990, 56, 94; 1997, 137–8) has advanced a “scarcity hypothesis,” which recognizes the sensitivity of the four-item measure to high rates of inflation, he has not appreciated that the measure also is affected when the economic context changes. When inflation is *not* a salient economic problem, respondents eschew the rising prices item but are forced by the format to choose one of the remaining three, *none* of which deals with other economic concerns they may have. Respondents who do not select the prices item have a *zero* probability of being classified as materialist.

It is argued that this difficulty with the Euro-Barometer values battery arose in many Western countries in the early 1980s, when the price spirals of the preceding decade gave way to low inflation and high unemployment. Many people reacted to these new conditions by changing their economic priority from fighting inflation to creating jobs. The forced-choice, closed-ended format of the battery meant that respondents concerned with unemployment could not register this concern and were forced to select among the remaining three items. As a consequence, they necessarily were classified as either postmaterialist or mixed. Much of the evidence supporting a value shift in Western countries over the past two decades is thus an artifact of an interaction between the measuring instrument and the economic context in which it is administered.

Lacking survey data that would directly demonstrate how responses to the values battery differ when the price item is replaced by an unemployment one, Clarke and Dutt (1991) and Clarke, Dutt, and Rapkin (1997a) have employed pooled cross-sectional time-series analyses of Euro-Barometer data to investigate the relationship between economic conditions and responses to the battery.³ Their major hypotheses are supported by a variety of multivariate analyses using data on eight larger and smaller West European countries during 1976–92. Contrary to Inglehart’s scarcity hypothesis, they find that rising unemployment is *positively* associated with the percentage of postmaterialists and *negatively* associated with the percentage of materialists. If one accepts the disputed battery as a valid measure of materialism and postmaterialism, then these relationships suggest that joblessness and resulting economic

³ Clarke, Dutt, and Rapkin (1997a, 30–4) use 1989 Euro-Barometer data to investigate the relationship between responses to the standard Euro-Barometer values battery and respondents’ stated issue priorities. The analysis, albeit suggestive, is necessarily hampered by the lack of an alternative version of the battery that substitutes an unemployment statement for the inflation one.

FIGURE 1. Mean Levels of Inflation and Unemployment, Eight West European Democracies, 1976–86



insecurity helped fuel the value shift in Western countries in the 1980s and early 1990s.

Abramson, Ellis, and Inglehart (1997) counter by arguing that these paradoxical relationships evaporate when a deterministic linear trend variable is included in the time-series regression analyses. They contend that its inclusion is justified because it indexes generational replacement effects, which are associated with the socialization hypothesis that undergirds the value shift thesis (e.g., Abramson and Inglehart 1992; Inglehart 1990, 56). Unlike previous generations, who espouse material values because in early life they confronted economic depressions and world wars, younger age cohorts tend to espouse postmaterialist values because they have been reared in a protracted era of material prosperity and physical security. The ongoing replacement of older generations thereby produces an aggregate trend from materialist to postmaterialist values in the Euro-Barometer data gathered since the 1970s.

Critics contend that a deterministic trend is not direct evidence that a socialization/generational replacement process has driven value change (Clarke, Dutt, and Rapkin 1997a, 1997b). Another possibility is that the trend is proxying the effects of a sharp upward swing in unemployment and an accompanying precipitous decline in inflation, which occurred in the early 1980s in the eight West European countries analyzed in Figure 1. The critics have demonstrated that including a trend term produces severe multicollinearity in Abramson, Ellis, and Inglehart’s (1997) regression analyses of the effects of unemployment and inflation. They have also observed that the short span of the time-series data is insufficient for conducting formal statistical tests to determine whether these series are characterized by nonstationarity or long-memory processes that would pose threats to inference (see, e.g., DeBoef and Granato 1997).

Given these considerations, and the fact that Euro-Barometer data accumulate slowly, it may be concluded that additional aggregate-level time-series analyses will have limited utility in the foreseeable future for resolving the dispute. This conclusion reinforces

the argument of Davis (N.d.) and Davis and Davenport (1999) (see also Duch and Taylor 1993, 1994) that *individual-level* analyses are crucial for resolving the methodological (and theoretical) controversies. In this regard, the crucial hypothesis of the critique advanced by Clarke, Dutt, and Rapkin is that respondents would answer the Euro-Barometer values battery differently in a period of low inflation and high unemployment *if* they were permitted to register their concern with joblessness. The next section describes an experiment that provides the requisite data to test this hypothesis.

JOBS VERSUS PRICES: A SURVEY EXPERIMENT

Canada is a suitable locale for testing the conversations in context hypothesis. Similar to many of the West European countries in which the Euro-Barometer is administered, the inflation rate in Canada declined sharply in the early 1980s and remained quite low. In 1996, when the values experiment was conducted, the rate of price increases was an extremely modest 1.6%. In contrast, joblessness was a persistent problem—escalating to 11.9% in 1983 and surging upward again during the recession of the early 1990s (to 11.3% in 1992). Although the economy subsequently revived, many people could not find work. In 1996, the unemployment rate remained at a worrisome 9.7%.

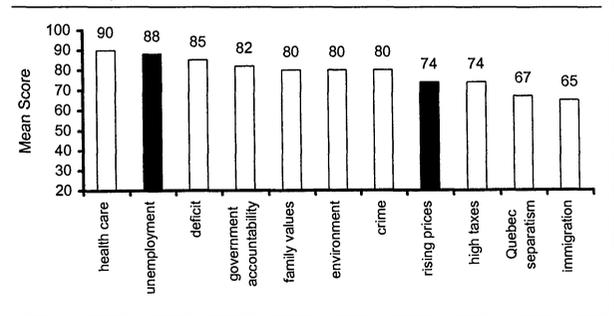
To determine whether responses differ when the Euro-Barometer values battery contains an item about unemployment rather than inflation, a random-half survey experiment was performed in February 1996. A mail questionnaire was sent to all participants in the national CATI surveys carried out before and after the October 1995 Quebec sovereignty referendum.⁴ Among the several measures included in the instrument were two versions of the values battery. One had the standard set of items, and the other substituted “creating more jobs” for “fighting rising prices” (see Appendix for wording). These two versions were distributed randomly to the survey respondents. The response rate was 65%, and the number of people answering the inflation and unemployment items was approximately equal—709 responded to the former, 696 to the latter. With weighting to ensure a representative national sample, the *N*s for the inflation and unemployment versions are 727 and 685, respectively.

Our critique of the measurement properties of the Euro-Barometer values battery requires that objective differences in inflation and unemployment rates be reflected in people’s economic issue priorities. This condition is fulfilled in the Canadian case. When survey respondents were asked to indicate the extent of their concern with 11 issues on a scale ranging from 0 (“not at all concerned”) to 100 (“extremely concerned”),⁵ the

⁴ Fieldwork for the Canadian surveys was conducted by Canadian Facts, Toronto, Ontario, under the direction of Peter Wearing.

⁵ The issue priority question is worded: “We would like to get your opinions on some political issues people are talking about these days. On a scale from 0 to 100 where 0 means ‘not at all concerned’ and 100 means ‘extremely concerned,’ please indicate how concerned you are with each of the following issues” [emphasis in original]. The

FIGURE 2. Mean Levels of Issue Concern, Canada, 1996



average score for unemployment was 88 points, compared to 74 points for inflation ($t = 20.38, p \leq .001$), as shown in Figure 2.⁶ Individual-level comparisons of relative levels of concern about unemployment and inflation reveal that 54% placed greater emphasis on job creation, and only 12% gave more weight to controlling price increases.⁷ The remainder indicated that they were equally concerned about both issues.⁸

Given respondents’ pattern of economic concerns, we expect that they will be more likely to choose “creating jobs” rather than “fight rising prices”—*if* they are given an opportunity to do so. This is exactly what happens. In the half-sample to whom the standard battery was administered, only 15% selected rising prices as most important, as revealed in Figure 3A. In the half-sample that received the item about creating jobs, 52% chose that item as most important. This difference between the half-samples is highly significant (chi-square [$4df$] = 239.02, $p \leq .001$), and it is not offset by answers to the follow-up concerning the second most important priority (Figure 3B). Overall, the percentage selecting creating jobs as the first or second priority was 69% and fighting prices, 40%. When people who selected more than one item as most

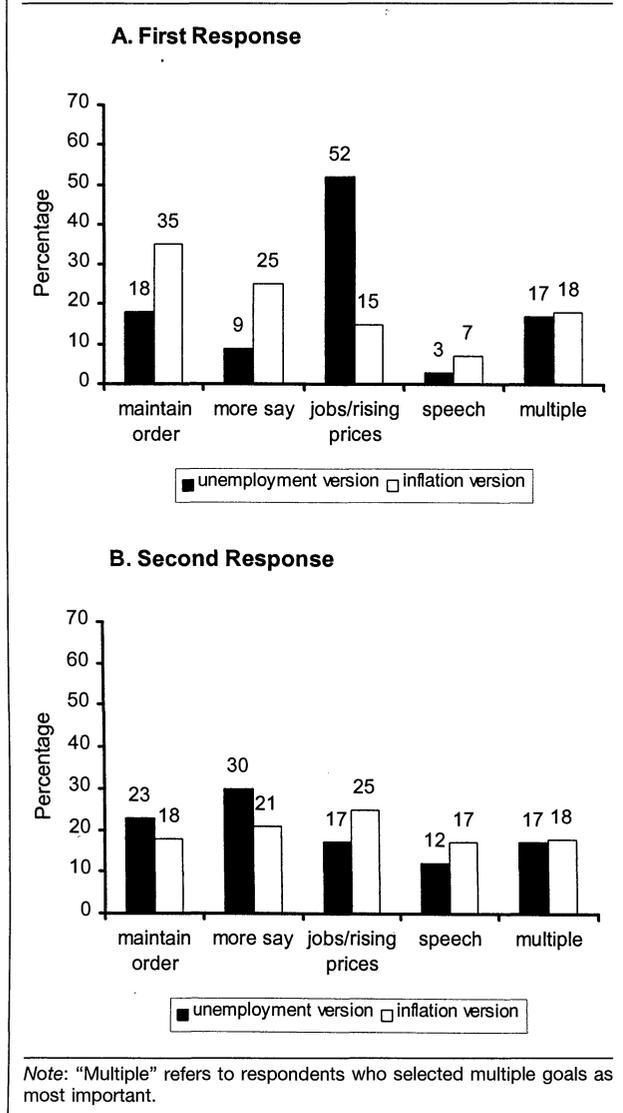
options were: (1) “creating more jobs,” (2) “changing the immigration system,” (3) “reducing the deficit and national debt,” (4) “making the federal government more accountable to the people,” (5) “cutting taxes to give people more disposable income,” (6) “fighting rising prices,” (7) “protecting the environment,” (8) “changing the criminal justice system to give more protection to the rights of victims,” (9) “maintaining medical care and health insurance,” (10) “the possibility that Quebec will separate from the rest of Canada,” and (11) “combating crime, drugs and the breakdown of the family.”

⁶ All basic data analyses, such as frequency counts and cross-tabulations, are conducted using SPSS 6.14. Multinomial logit analyses reported below are performed using the MLOGIT procedure in STATA 5.0.

⁷ The relative priority accorded unemployment and inflation is measured by subtracting respondents’ inflation issue priority score on the 0–100 scale from their unemployment issue priority score. The result was recoded into three groups: (1) priority to unemployment (a score $\geq +1$), (2) equal priority to unemployment and inflation (a score of 0), and (3) priority to inflation (a score ≤ -1).

⁸ The relatively heavy emphasis on unemployment rather than inflation as an economic issue is confirmed by responses to an open-ended question in the survey: Overall, what do you think is the most important issue facing Canada today? In response, 39% mentioned unemployment, but only .5% cited inflation.

FIGURE 3. Responses to Unemployment and Inflation Versions of the Euro-Barometer Values Battery, Canada, 1996

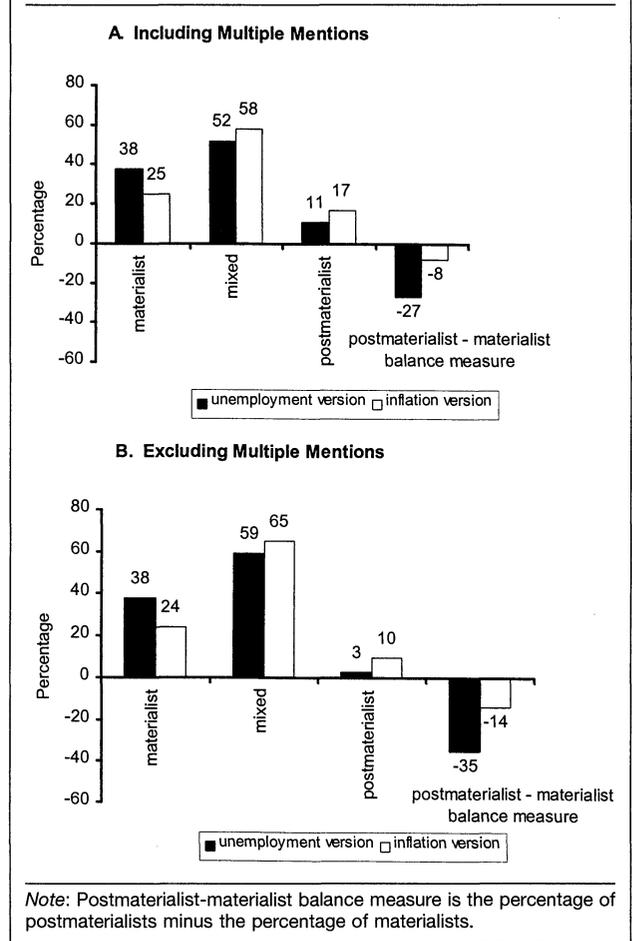


important in response to the first question⁹ are included (the multiple group in Figure 3), the numbers rise to 77% and 49% (data not shown).

The substantial differences between answers to the inflation and unemployment versions of the Euro-Barometer battery are consequential for respondents' value classification. As Figure 4A shows, 38% of those who received the unemployment version are classified

⁹ Some respondents ignored instructions in the mail questionnaire and selected multiple goals as "most important." We interpret this as an effort to indicate that they considered multiple goals equally important. When classifying these respondents, those who selected two goals as most important were categorized as materialist, mixed, or postmaterialist, depending on which two statements they chose. Those who selected three or four goals were placed in the mixed category. Similarly, respondents who selected one goal as most important and two or more goals as second most important were classified as materialist if all goals were materialist and as postmaterialist if all goals were postmaterialist. Otherwise, these respondents were placed in the mixed category.

FIGURE 4. Materialist-Postmaterialist Value Orientations for Unemployment and Inflation Versions of the Euro-Barometer Values Battery, Canada, 1996



as materialists, compared to 25% of those who received the inflation version; the figures for postmaterialists are 11% and 17%, respectively. The summary balance measure (postmaterialist minus materialist) equals -27 for the unemployment group but only -8 for the inflation one. This latter difference is not an artifact of including multiple-mention respondents; excluding them yields a balance measure of -35 for the unemployment group versus -14 for the inflation one (Figure 4B). These differing balance measure figures are important, since proponents of the value shift thesis employ the measure as the key summary indicator of the shift from materialism to postmaterialism (e.g., Abramson and Inglehart 1995, 29; Inglehart 1990, 94, 1997, 138). Our analyses clearly demonstrate that scores on the indicator are influenced strongly by whether an inflation or an unemployment statement is included in the values battery.¹⁰

¹⁰ Another problem with the balance measure is that it invites confusion of *absolute* increases or decreases in the percentage of materialists and postmaterialists over time with *relative* ones. For example, assume that at time t_1 , 20% are classified as materialists and 30% as postmaterialists, yielding a balance score of $30 - 20 = +10$. At time t_2 , both groups decrease in size, but the erosion in the

TABLE 1. Value Orientation in Inflation and Unemployment Versions of the Euro-Barometer Values Battery, by Inflation versus Unemployment Issue Concerns, Canada, 1996

A. Inflation Item Version			
Value Orientation	Issue Concern		
	Inflation	Equal	Unemployment
Materialist	28%	34%	19%
Mixed	60	48	64
Postmaterialist	12	18	17
N	74	248	366
Balance of postmaterialists-materialists	-16		-2

B. Unemployment Item Version			
Value Orientation	Issue Concern		
	Inflation	Equal	Unemployment
Materialist	40%	26%	44%
Mixed	45	59	49
Postmaterialist	16	15	7
N	83	216	361
Balance of postmaterialists-materialists	-24		-37

Note: Total of column percentage may vary from 100 due to rounding.

To test the hypothesis that responses to the Euro-Barometer value battery are affected by respondents' economic concerns, we first investigate the relationship between value orientation and issue priorities while controlling for the version of the battery. Among persons answering the standard (inflation) version, skewness in the materialist direction can be expected if the respondent is more concerned about combating inflation rather than unemployment since the battery permits such respondents to express this economic priority. This logic also suggests that, among persons answering the alternative (unemployment) version, the balance should be tilted more strongly in the materialist direction if the respondent's issue concern is joblessness rather than inflation. The data are consistent with these conjectures. Among persons in the inflation half-sample, the balance measure is -16 among respondents who emphasize inflation but only -2 among those who stress unemployment, as shown in Table 1. In the unemployment half-sample, however, the balance measure is -24 among persons who are worried

materialist group is larger (e.g., 10%) than in the postmaterialist group (e.g., 5%). Thus, the *t*₂ balance scores for materialists and postmaterialists are (20-10) and (30-5), respectively, but the overall balance score has increased to 25 - 10 = +15. The problem is not hypothetical. In eight Western countries between 1976 and 1992, Clarke, Dutt, and Rapkin (1997a, 22) found 33 of 128 possible cases (25.8% of the year-to-year changes) in which the balance measure suggests an absolute increase or decrease in the percentage of materialists or postmaterialists when, in fact, the opposite had occurred. These cases are not confined to one country or year but instead vary widely.

primarily about inflation but -37 among those more concerned about joblessness.

As a more comprehensive test of the interaction between questionnaire version and economic priorities, we constructed a series of dummy variables for five of the six possible combinations of values battery and issue priorities. The sixth combination—standard (inflation) battery and unemployment as an issue priority—serves as the reference category. Persons in this category should be the most likely to answer the values battery in a way that results in a mixed or postmaterialist classification. They accord higher priority to joblessness than inflation, but this cannot be reflected in their responses because their version does not offer the creating more jobs statement. Also, similar to other respondents, they are answering the battery at a time when unemployment, not inflation, is being widely touted by politicians and the press as an important economic problem. This should reinforce the likelihood that they would select joblessness rather than inflation if given the choice. In addition, even if they are tempted to articulate what Zaller (1992, 76-7) calls "top of the head" responses, they cannot use the widely available contextual information about high unemployment as a cue.

A multinomial logit analysis (e.g., Long 1997, chap. 6) was used to investigate relationships between the questionnaire version × issue priority dummy variables, on the one hand, and value classification (materialist, mixed, postmaterialist), on the other. Materialists are (arbitrarily) chosen as the reference category, which implies that each of the five questionnaire version × issue priority variables included as predictors should have negatively signed coefficients in the estimated parameter vectors for the mixed and postmaterialist categories. Consonant with the argument in the preceding paragraph, these negative signs should obtain because persons in the omitted (reference) group for the questionnaire version × issue priority set of dummy variables, that is, those who accord priority to unemployment but answer the inflation version of the values battery, are more likely than any other group to answer the battery in such a way that they will be classified as postmaterialist or mixed. The analysis is performed with controls for several sociodemographic variables (age cohort, education, gender, income, region/ethnicity) that have figured prominently in debates about the value shift thesis or the literature on Canadian political culture.¹¹ Also included as a control is a variable indexing whether the respondent offered multiple responses to the first question in the four-item battery.

Empirically, the logit analysis is consistent with expectations. Coefficients for the five questionnaire version × issue priority interaction effect variables are negatively signed and statistically significant (*p* < .01) for the postmaterialist category, as revealed in Table 2. Comparable coefficients for the mixed category also are

¹¹ In particular, regional and ethnolinguistic variation long has been a major theme in this literature (e.g., Bell and Tepperman 1979; Schwartz 1974). Most analyses of Canadian political culture have not investigated Inglehart's value shift hypothesis. A recent exception is Inglehart, Nevitte, and Basañez (1994), who support the hypothesis. See also Nevitte 1996.

TABLE 2. Multinomial Logit Analysis of Factors Affecting Measured Value Orientation, Canada 1996

Predictor Variables	Measured Value Orientation			
	Mixed		Postmaterialist	
	B	s.e.	B	s.e.
Constant	2.204***	.406	-0.697	.617
Age:				
18-25	0.375	.271	0.313	.409
26-35	0.096	.236	-0.066	.348
36-45	0.565**	.244	0.227	.366
46-55	0.367	.261	0.210	.371
56-65	0.228	.261	0.279	.366
Education	-0.064	.067	0.218*	.108
Gender	-0.343**	.137	-0.658***	.217
Income	-0.074**	.029	-0.093*	.047
Region/Ethnicity:				
Atlantic	0.003	.256	0.519	.414
Quebec, French	0.000	.190	1.294***	.285
Quebec, Other	0.658	.392	0.912	.579
Prairies	-0.165	.198	0.257	.347
British Columbia	0.116	.223	1.156***	.357
Questionnaire				
Version × Issue				
Concern:				
Unemployment × inflation	-1.052***	.299	-1.065**	.440
Inflation × inflation	-0.361	.327	-1.180**	.523
Unemployment × equal	-0.307	.230	-0.928**	.338
Inflation × equal	-0.822***	.218	-0.827**	.311
Unemployment × unemployment	-1.132***	.189	-1.899***	.325
Multiple Response	-1.084***	.220	2.085***	.258
N = 1,210				
Log likelihood = -999.85				
χ^2 (38 df) = 333.65				
Pseudo R ² = .143				

Note: Materialist is the reference category; * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$; one-tailed tests.

negative; three are statistically significant ($p \leq .01$), and the fourth is marginally so ($p \leq .10$). To ensure that these findings are not artifacts of including persons who gave multiple answers to the first question in the battery, we omitted those cases and replicated the analysis. The results remain essentially unchanged. Nine of ten coefficients for the questionnaire version × issue priority interaction variables are negative; seven of these are clearly significant ($p \leq .05$), and one is marginal ($p \leq .10$).¹² In sum, the logit analyses strongly support the hypothesis that the prevailing economic context significantly affects how respondents answer the values battery.

¹² The multinomial logit results are replicated if one uses ordered logit analyses (e.g., Long 1997, chap. 5). Although the value shift conceptualization of a unidimensional materialist-mixed-postmaterialist value continuum is consistent with the latter procedure, the multinomial logits enable one to examine the contrasts between materialist versus mixed and materialist versus postmaterialist groups in the framework of a single analysis.

THE GERMAN EXPERIMENTS

The Canadian case may be anomalous. Would results differ if the experiment were performed in one of the countries where the Euro-Barometer surveys have been conducted over the past two decades? We answer this question with survey data gathered in western Germany in 1996 and 1997. The 1996 surveys included a split-half experiment like the Canadian one (see Bauer-Kaase and Kaase 1998). The 1997 surveys replicated this experiment and performed a second one, in which *both versions* of the values battery were administered to the *same respondents* at different points in the interview. Since identical surveys were conducted in eastern Germany,¹³ we also extend the investigation of the measurement properties of the values battery to the population of one of the former communist countries now routinely included in large-scale cross-national studies of value change (e.g., Abramson and Inglehart 1995; Inglehart 1997).

Similar to Canadians, Germans respond to the values battery very differently if a statement about unemployment is substituted for one about inflation.¹⁴ As can be seen in Table 3, in 1996 only 18% of western Germans answering the standard battery chose the inflation item as their most important value, whereas 40% of those answering the alternative battery chose the unemployment item. The comparable percentages among eastern Germans were 19% and 51%, respectively (panel A). In 1997, the same patterns obtained. Among western Germans, only 18% of those answering the standard version (in the first administration of the battery) chose prices, but 53% of those answering the alternative version chose joblessness (panel B). Among eastern Germans, these figures were 18% and 64%.

These response patterns have a major effect on respondents' value classifications. For example, in 1996, 30% of western Germans answering the standard battery can be classified as materialist, 54% as mixed, and 16% as postmaterialist, as shown in Table 4A. Among those permitted to select unemployment, however, the materialist, mixed, and postmaterialist distribution is 42%, 51%, and 7%, respectively. The summary balance measure thus is very different for the two groups: -14 for the half-sample answering the standard battery, and -35 for the half-sample answering the alternative version. This pattern is replicated for eastern Germans in 1996 (Table 4A) and for both western and eastern Germans in 1997 (Table 4B).

¹³ The German surveys were conducted by GFM-GETAS/WBA (Gesellschaft fuer Marketing-Kommunikations-und-Sozialforschung, Hamburg). Interviews were carried out in person with stratified random samples of the German-speaking population of western and eastern Germany age 18 or older. Samples sizes for the 1996 and 1997 surveys are 2,021 and 2,067, respectively, for western Germany, and 1,117 and 758 for eastern Germany. The response rates for the western Germany surveys were 68% in 1996 and 67% in 1997. Eastern Germany response rates were 72% and 73%, respectively.

¹⁴ The wording of the inflation item in the German surveys is: "Kampf gegen die steigenden Preise"; for the unemployment item, "Kampf gegen die steigende Arbeitslosigkeit." The wording of the other items are: "Aufrechterhaltung von Ruhe und Ordnung," "Mehr Einfluß der Bürger auf die Entscheidungen der Regierung," and "Schutz des Rechtes auf freie Meinungsäußerung."

TABLE 3. First Responses to Unemployment and Inflation Versions of the Euro-Barometer Values Battery, Western and Eastern Germany, 1996 and 1997

	Western Germany		Eastern Germany	
A. 1996				
	Unemployment	Inflation	Unemployment	Inflation
Item				
Maintain order	35%	41%	31%	44%
More say	17	24	14	33
Unemployment	40	—	51	—
Rising prices	—	18	—	19
Free speech	8	17	4	5
N	992	983	498	495
B. 1997, First Administration				
	Unemployment	Inflation	Unemployment	Inflation
Item				
Maintain order	28%	41%	21%	46%
More say	13	25	12	30
Unemployment	53	—	64	—
Rising prices	—	18	—	18
Free speech	7	17	3	6
N	1,035	1,005	375	367
C. 1997, Second Administration				
	Inflation	Unemployment	Inflation	Unemployment
Item				
Maintain order	44%	27%	48%	23%
More say	21	12	27	11
Unemployment	—	51	—	62
Rising prices	21	—	22	—
Free speech	14	11	3	3
N	1,035	1,005	375	367

Note: Total of column percentage may vary from 100 due to rounding. Column order in 1997 reflects question wording in different administrations. — = item not included in battery.

Impressive variation also emerges when the two batteries are administered to the *same* respondents in the *same* survey. When answering the alternative (unemployment) battery first, 53% of western Germans chose unemployment as their top priority. When answering the standard battery only about 15 minutes later, however, 21% selected inflation as their top priority (compare column 1 of Table 3B and C). Since respondents are forced to select one of the four items as their highest priority, the incidence with which the other three items are selected also varies. For example, among western Germans answering the alternative battery first, 28% chose the “maintain order” item; when subsequently presented with the standard battery, 44% did so. Comparable percentages for the “more say” and “free speech” items are 13% versus 21%, and 7% versus 14%. This example is not atypical. Regardless of the order in which the standard and alternative batteries were asked, the likelihood that respondents would select any of the four statements—not just the inflation and unemployment items—varied substantially depending upon which battery they were answering.

These differences have a major effect on whether the *same* respondents are classified as materialist, mixed, or postmaterialist. Among western Germans asked the inflation version before the unemployment version, more than two-thirds (69%) of those classified as

postmaterialist by the former move to the mixed or materialist categories based on their answers to the latter (Table 5A). Among eastern Germans answering the two batteries in this order, the value shift is even larger—79% of those classified as postmaterialist according to the inflation version move to the mixed or materialist category based on their answers to the unemployment version (Table 5B). Very sizable changes also are observed among both western and eastern Germans who answered the unemployment version first, but in these cases the largest shifts involve people classified initially as materialist (Table 5C and D). This latter finding accords well with our argument, given that most respondents place higher priority on unemployment than inflation. When subsequently asked the standard version, many respondents giving priority to unemployment eschewed the inflation item and selected among the other three; they necessarily were reclassified as mixed or postmaterialist.

The overall dynamics in these same-survey value shifts are impressive. On average, 34% of the respondents in the four turnover tables in Table 5 (i.e., A–D) change their value classification as a result of how they answer the two versions of the Euro-Barometer battery. As was shown in Table 4, these changes have very sizable effects on the summary balance measure, which supposedly is the key indicator of the hypothesized

TABLE 4. Measured Materialist-Postmaterialist Value Orientation According to Unemployment and Inflation Versions, Western and Eastern Germany, 1996 and 1997

	Western Germany		Eastern Germany	
	Unemployment	Inflation	Unemployment	Inflation
A. 1996				
Value Type				
Materialist	42%	30%	53%	35%
Mixed	51	54	44	54
Postmaterialist	7	16	2	11
Postmaterialist-materialist balance	-35	-14	-51	-24
N	992	983	498	495
B. 1997, First Administration				
Value Type				
Materialist	43%	26%	52%	31%
Mixed	51	57	46	61
Postmaterialist	6	17	2	9
Postmaterialist-materialist balance	-37	-9	-50	-22
N	1,035	1,005	375	367
C. 1997, Second Administration				
Value Type				
Materialist	31%	44%	36%	51%
Mixed	55	51	57	47
Postmaterialist	14	6	7	2
Postmaterialist-materialist balance	-17	-38	-29	-49
N	1,035	1,005	375	367

Note: Total of column percentage may vary from 100 due to rounding. Column order in 1997 reflects question wording in different administrations.

TABLE 5. Value Orientation When Unemployment and Inflation Versions Are Asked in the Same Survey, Western and Eastern Germany, 1997

		Materialist	Mixed	Postmaterialist
A. Western Germany: Inflation Version Asked First				
Value Orientation:			Value Orientation: Inflation Version	
Unemployment	Materialist	85%	38%	6%
Version	Mixed	15	61	63
	Postmaterialist	0	1	31
	N	260	574	148
B. Eastern Germany: Inflation Version Asked First				
Value Orientation:	Materialist	85%	39%	5%
Unemployment	Mixed	15	60	74
Version	Postmaterialist	0	1	21
	N	74	153	19
C. Western Germany: Unemployment Version Asked First				
Value Orientation:			Value Orientation: Unemployment Version	
Inflation Version	Materialist	59%	10%	4%
	Mixed	41	72	23
	Postmaterialist	1	18	74
	N	432	501	57
D. Eastern Germany: Unemployment Version Asked First				
Value Orientation:	Materialist	62%	9%	0%
Inflation Version	Mixed	35	81	25
	Postmaterialist	2	11	75
	N	126	113	4

Note: Total of column percentage may vary from 100 due to rounding.

value shift in advanced industrial societies. Since there is no reason to believe that these striking patterns are idiosyncratic to a 1997 survey, it is clear that any inferences regarding the extent of movement from materialist to postmaterialist values based on a time series of balance measure scores will be strongly influenced by whether the values battery contained an inflation or an unemployment statement.

The 1997 surveys also permit us to analyze the interaction effects of questionnaire version \times issue priorities on value classification. Similar to the Canadian study, the German surveys included a question asking respondents to indicate the extent of their concern with unemployment, inflation, and several other issues on a scale of 0–100 points.¹⁵ Replicating the Canadian multinomial logit analysis (see pp. 641–2 above), the interaction effects are measured using five dummy variables, with the standard (inflation) questionnaire version \times unemployment issue priority serving as the reference category. The interaction variables are entered in a multinomial logit analysis of value classification, with controls for age cohort, education, gender, income, and region (whether western or eastern Germany). Using the materialist group as the reference category again implies that the five dummy interaction effect variables should carry negative signs in the mixed and postmaterialist parameter vectors (see pp. 641–2 above). This is exactly what happens—the coefficients for all ten interaction effect dummies are statistically significant ($p \leq .05$) and negatively signed as shown in Table 6.¹⁶ These results reinforce the conclusion that the measured percentages of materialists and postmaterialists, and the net balance of these groups, are powerfully affected by the interaction among the structure and content of the Euro-Barometer values battery, respondents' issue priorities, and the broader economic context that obtains when the battery is administered.

CONCLUSION

Data gathered in biannual Euro-Barometer surveys constitute one of the principal empirical foundations for the claim that advanced industrial societies have experienced a pronounced shift from materialist to postmaterialist values. Evidence from survey experiments in Canada and Germany indicates that this foundation is shaky. Consistent with the argument that prevailing economic conditions strongly influence how people answer the Euro-Barometer values battery, we

¹⁵ As did Canadians, Germans typically accorded much higher priority to battling unemployment than to fighting inflation. In western Germany, the mean score (on the 0–100 scale) for unemployment was 94, compared to 78 for inflation. The respective figures for eastern Germany were 96 and 81. Comparing the unemployment and inflation scores for the two groups shows that 59% of western Germans and 57% of eastern Germans accorded more priority to joblessness, and only 7% and 6%, respectively, considered inflation more important. Other respondents (34% in western Germany, 37% in eastern Germany) assigned equal priority to both issues.

¹⁶ As in the Canadian case (see note 12), an ordered logit analysis also yields significant negative coefficients for the five interaction effect dummy variables.

TABLE 6. Multinomial Logit Analysis of Factors Affecting Measured Value Orientation, Western and Eastern Germany, 1997

Predictor Variables	Measured Value Orientation			
	Mixed		Postmaterialist	
	B	s.e.	B	s.e.
Constant	0.036	.242	-4.119***	.547
Age:				
18–25	0.521***	.176	2.743***	.458
26–35	0.600***	.143	2.473***	.437
36–45	0.350***	.149	2.331***	.444
46–55	0.705***	.154	2.213***	.457
56–65	0.140	.133	1.049*	.468
Education	0.133***	.036	0.365***	.052
Gender	-0.076	.086	0.021	.153
Income	0.030*	.013	0.058**	.024
Region:				
Eastern	-0.237*	.110	-1.183***	.232
Questionnaire Version \times Issue Concern:				
Unemployment \times inflation	-0.928***	.240	-0.937**	.371
Inflation \times inflation	-0.591*	.259	-1.175**	.452
Unemployment \times equal	-1.093***	.128	-2.143***	.263
Inflation \times equal	-0.527***	.134	-1.307***	.233
Unemployment \times unemployment	-0.861***	.117	-2.170***	.216

N = 2,753

Log likelihood = -2304.6959

χ^2 (28 df) = 460.76

Pseudo R^2 = .09

Note: Materialist value orientation is the reference category. * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$; one-tailed tests.

find that responses to the battery offered in an era of high unemployment and low inflation differ substantially when the standard battery's inflation item is replaced by an unemployment item. This is true even when respondents are asked both versions only minutes apart in the same interview. The percentages classified as materialist or postmaterialist, and the balance of these two groups, are very different for the inflation and unemployment half-samples. In both Canada and Germany, the latter group has a much larger percentage of materialists and a smaller percentage of postmaterialists, and the summary balance variable has a much more pronounced materialist tilt.

According to critics of the values battery, these results can be expected when joblessness rather than rising prices is a highly salient economic issue. In an economic context of high unemployment and low inflation, the standard version of the battery will make it appear that a postmaterialist value shift is under way. Because this is exactly the context in Canada and many West European countries in the early 1980s, much of the value shift measured by the Euro-Barometer battery since that time is artifactual. The story told by the Canadian and Germany experiments thus is not a happy one for proponents of the value shift thesis. The

measuring instrument that has provided the bulk of the data used to document their case is seriously flawed.

There is another and more general message for survey researchers. The problematic Euro-Barometer values battery illustrates how analysts can be misled by interactions between the structure and content of their measuring instruments and the contextual forces at work when the instruments are administered. Comparative politics specialists long have emphasized the difficulties that arise if one is not sensitive to cultural and linguistic differences that may bias survey data analysis. As argued here, economic contexts also are important, and these have dynamic components—they vary *temporally* as well as spatially. The effects of this variation can be pernicious because, as in the case of the Euro-Barometer values battery, biases engendered by temporally related contextual variation may not become apparent for a long time and after a large investment in a flawed measuring instrument has been made. Designing experiments that can alert survey researchers to these problems beforehand is a challenging topic for future inquiry.

APPENDIX: THE CANADIAN EXPERIMENT VALUES BATTERIES

Random Half-Sample One

There's a lot of talk about what this country's goals should be for the next ten or fifteen years. Below are listed some of the goals that different people say should be given top priority. Please indicate which ONE of them you, yourself, consider MOST IMPORTANT in the long run. Also, please indicate which one is SECOND MOST IMPORTANT.

	Most Important	Second Most Important
Maintaining order in the nation	1	1
Giving the people more say in important government decisions	2	2
Fighting rising prices	3	3
Protecting freedom of speech	4	4

Random Half-Sample Two

There's a lot of talk about what this country's goals should be for the next ten or fifteen years. Below are listed some of the goals that different people say should be given top priority. Please indicate which ONE of them you, yourself, consider MOST IMPORTANT in the long run. Also, please indicate which one is SECOND MOST IMPORTANT.

	Most Important	Second Most Important
Maintaining order in the nation	1	1
Giving the people more say in important government decisions	2	2
Creating more jobs	3	3
Protecting freedom of speech	4	4

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