*Postmaterialism and the Economic Condition**

Raymond M. Duch, *University of Houston*
Michaell A. Taylor, *University of Houston*

The postmaterialism concept developed by Ronald Inglehart has generated a considerable body of literature over the past couple of decades. One of the critical arguments concerning postmaterialism is that economic security or conditions at the early period of political maturation have a strong and long-lasting influence on postmaterialist attitudes later in life. Employing multivariate analysis, this paper tests the notion that early economic experiences have a lasting effect on postmaterialist values as measured by Inglehart. The data are collected from eight Western European nations over the 1973–84 period. These findings are supplemented with a recent survey of the European portion of the former Soviet Union. The results of this analysis suggest that early economic conditions do not actually affect how respondents rank Inglehart's postmaterialist items. Education and economic conditions at the time of the survey are much more important explanations for variations in the postmaterialist measure.

An extensive body of literature has developed exploring the relationships between the economy and citizen preferences. For the most part, these studies have focused on the impact of short-term fluctuations in the macroeconomy and political attitudes. Although there remains a lively debate regarding the magnitude and the functional form of these relationships, there is little doubt that there is a connection between the economy and political attitudes (MacKuen, Erikson, and Stimson 1992; Chappell and Keech 1985; Lewis-Beck 1988; Fiorina 1981; Kiewiet and Rivers 1984; Hibbs 1982).

A second school of research explores the link between secular trends in the economy and political values, that is, fundamental or long-term orientations toward politics. Examples here would be the important works of scholars such as Bell (1960) and more recently Inglehart (1977a, 1990). Here, the empirical evidence is less conclusive, partially for

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reasons of data availability. It is this second school of research that commands our attention.

This paper explores the simple Maslowian argument put forward by Inglehart that economic security at the early ages of political maturation is a major contributing factor to the rise of what he calls "Postmaterialism." Inglehart characterizes postmaterialism as value orientations that emphasize nonphysiological needs, "such as those for esteem, self-expression, and aesthetic satisfaction (Inglehart 1990, 68)." This contrasts with materialist values that focus on physiological sustenance and safety. He argues that young adolescents develop postmaterialist values when they reach maturity during a period of economic security. Those who experience economic insecurity during their maturation period are much more likely to embrace materialist values. Most important, these values acquired at this early age stay with the individual throughout the life-cycle.

In an earlier multivariate analysis, Dalton (1977) provided support for this argument. More recent evidence raises questions about the plausibility of Inglehart's economic security hypothesis (Van Deth 1983; Trump 1991). Recent surveys from the former communist regimes of Eastern Europe (Inglehart 1988) and the former Soviet Union (Gibson and Duch 1993a; Inglehart 1992) have identified surprisingly high levels of postmaterialism. Given the relatively poor performance of the communist economies, these levels of postmaterialism are somewhat paradoxical in light of Inglehart's claim that economic security drives postmaterialism. Hence, this essay specifically explores the empirical link between the economy and the development of postmaterialist values.

The efforts to evaluate the economic security hypothesis have relied either on Euro-Barometer surveys for a single year (Dalton 1977) or on single-country studies (Van Deth 1983; Trump 1991).[1] We revisit Inglehart's hypothesized link between economic security and postmaterialist values by conducting a multivariate analysis of survey data gathered by the Euro-Barometer over the last three decades. Our approach is unique in that we estimate a fully specified cross-national multivariate model of postmaterialism that incorporates both individual-level variables and system-level measures (such as the state of the economy) over a significant period of time. Second, we compare these findings with results from the analysis of a survey of the European portion of the former Soviet Union. Both sets of results strongly suggest that economic security at the

[1]The Euro-Barometer is a biannual survey of the 12 nations of the European Community.

time of maturation has no significant impact on what Inglehart labels postmaterialist values later in life. The only relevant effect of the economy on preferences occurs in the time period when respondents are interviewed. We find that education, rather than early socialization experiences, explains why younger cohorts score higher on Inglehart's postmaterialism index.

Economic Security: Theory and Evidence

Inglehart's argument is based on two key propositions: (1) a scarcity hypothesis that individuals will value those things that are scarce and tend to take for granted those things that are relatively abundant and (2) a socialization hypothesis that the level of economic security during early years of political maturation results in postmaterialist values that persist through the life cycle. The economies of Europe, he argues, have enjoyed higher levels of affluence during the post–World War II period, thus adding to their material satisfaction. Because younger European cohorts have satisfied their material wants, they now, according to Inglehart, are seeking to satisfy quality of life needs that are nonmaterialistic (i.e., postmaterialistic) in nature.[2] This implies that basic preferences are unlikely to be eroded by fluctuations in economic conditions throughout the lifetime of the typical individual. What matters is the level of economic security at maturation (that Inglehart establishes at around 15 years of age).

Inglehart has changed the emphasis of his argument in recent years (Inglehart 1987, 1990), dropping references to "needs hierarchy," to Maslow and to formative socialization experiences.[3] His focus, as Flanagan (1987) points out, has clearly moved to the aggregate as opposed to the individual level. And Inglehart (Abramson and Inglehart 1992; Inglehart 1985) has conceded that respondents are subject to certain short-term period effects (inflation rates in particular). He even admits that during certain periods they could outweigh cohort effects. Nevertheless, his underlying argument rests on the same basic assumptions: (1) higher levels of economic affluence are associated with greater receptivity to postmaterialist values; (2) the propensity to accept these values is

[2]The relationship between basic material needs and value orientations is an important element of Inglehart's theory. We do not address this issue. An empirical treatment of the issue can be found in Trump (1991).

[3]It should also be pointed out that even in his original statement of the theory, Inglehart (1977, chaps. 1, 2) identified other factors that contribute to security such as the absence of major war in the postwar period. This does not detract, however, from the fact that Inglehart hypothesizes that economic security at the time of maturation is the major contributing factor to the development of postmaterialist values.

acquired at an early age; and (3) there may be life-cycle and period effects but they do not significantly erode values acquired in early life (Inglehart 1987, 1296; Abramson and Inglehart 1992).[4]

Hence, the relationship between economic conditions during an individual's formative years and that individual's postmaterialist values (at any subsequent point in time) is a key element of Inglehart's theory. But evidence specifically establishing this link is rather limited. Inglehart compares nations in the 1970 Euro-Barometer survey in terms of their absolute per capita gross national product (GNP) and the postmaterialism scores of successive birth cohorts. Comparing system-level characteristics in this manner, Inglehart finds that higher absolute levels of affluence are associated with higher postmaterialism mean scores. Inglehart (1971) established that in fact among the oldest cohorts the incidence of "postbourgeois" values was almost zero. As he pointed out, "this stratum [the postbourgeois] should be smallest among the oldest cohorts if, indeed, it tends to reflect the level of affluence prevailing within a given cohort's pre-adult years" (Inglehart 1971, 998). Similarly, he found that higher national GNP growth rates produce larger increases in the percentage of postmaterialists found in younger versus older cohorts. Moreover, those nations that suffered a declining economic position relative to the rest of Europe, although continuing to add to affluence, exhibit increased postmaterialism in successive cohorts but show lower cohort-to-cohort postmaterialism growth than their European neighbors.

He also argued that cross-national variations in the pattern of postmaterialism should reflect the economic conditions of the nations at the time of each cohort's maturation. Hence, compared with other European nations, levels of postmaterialism should have been highest in the British cohorts that matured prior to World War II, a period when Britain was relatively better off than her European neighbors. Following a similar logic, the younger cohorts in Britain, compared with other European nations, should have relatively lower rates of postmaterialism because of Britain's economic stagnation during the post–World War II period. For example, Germany and Italy have recorded higher than average economic growth rates and therefore should have higher than normal increases in postmaterialism levels. The cross-tabulations he presents more or less support these arguments.[5]

[4]In a similar manner, Clarke and Dutt (1991, 905) point out the theoretical and empirical importance of this "socialization hypothesis" for Inglehart's postmaterialism argument.

[5]We say "more or less" because Inglehart draws conclusions on the basis of relatively small differences between cohort categories and does not present any measures of statistical significance.

This strikes us as a very tenuous test of one of the major elements of the postmaterialism argument because it does not attempt to control for other factors that might be shaping attitudes. While this might be acceptable in the case where appropriate data were unavailable, extensive data now exist that permit a multivariate estimation of the factors contributing to postmaterialism.

Dalton (1977) addressed a serious shortcoming of the original Inglehart analysis by estimating a multivariate model of postmaterialism that incorporated an indicator of economic security, gross domestic product (GDP), at the time of maturation (eight to 12 years old). In fact, GDP is the most powerful predictor of postmaterialism in his model (the other variables in the equation are age, education, and socioeconomic status). But there are a couple of deficiencies in his analysis that we address in this essay. First, we propose to extend Dalton's cohort-level analysis to the individual level, which in some sense is a test of the adequacy of his aggregate-level specification, and to extend that analysis over Euro-Barometer surveys spanning the period 1973 to 1984.[6] This increases the variance on the generational measure, and, as a result, both at the individual and cohort level, we better represent the range of generational periods in our analyses. Second, our method greatly increases the variance of economic situations that prevailed at the time of administration of the various Euro-Barometer surveys, a variable that was not included in the Dalton analysis.[7]

More recent efforts to test Inglehart's economic socialization hypothesis have been for the most part critical of the theory. Employing panel data from the Netherlands, Van Deth (1983) finds considerable instability in postmaterialist responses over a five-year period, suggesting that values learned during the formative socialization period are not long lasting or stable. Trump (1991) has explored the impact of economic conditions on how children rank the postmaterialist items and concludes that there is no evidence that economic conditions during an individual's formative years affect their value orientations. Left open, though, is the question as to how we might account for these variations in the measure.

[6]The selection of this time period is not arbitrary. It corresponds to the merged Euro-Barometer data set prepared by the Inter-University Consortium for Political and Social Research (study no. 8434).

[7]There has also been an excellent recent analysis of the impact of unemployment, measured at the time of the survey, on Inglehart's measure of postmaterialism by Clarke and Dutt (1991). They convincingly argue that as a result of measurement deficiencies, postmaterialism is highly sensitive to contemporary fluctuations in unemployment rates. We tend to agree with the authors but avoid in this paper an extensive critique of Inglehart's measurement approach.

Hence, we now propose alternative explanations for the fluctuations in postmaterialist scores.

Rival Economic Explanations

There are a number of reasons why the economic reasoning proposed by Inglehart simply seems unreasonable to us. First, Inglehart confounds the notion of economic security with that of economic growth. Although probably highly correlated, the two are not necessarily the same. In fact, it seems entirely plausible that economic *insecurity* could be quite significant even at relatively high levels of economic growth. Simply because a country has experienced high rates of growth hardly suggests that the average citizen is necessarily more economically secure.[8] Even Inglehart (1992) recognizes the possibility that a country can have low levels of economic development and considerable economic security. Therefore, why not expect high levels of economic development to exist with low levels of economic security?

There is growing evidence in the developed economies that economic growth might even undermine economic security. For example, many argue that the efforts of countries to promote the international competitiveness of their industries have resulted in considerable job displacement, a decline in job security, declining wages for certain segments of the labor force, and the rising threat, if not reality, of unemployment.[9] In short, economic growth continues but economic security for the labor force (and here we would include all "classes" of the employed) becomes increasingly tenuous. Levels of economic development are not necessarily a good measure of economic security. Hence, individuals can reach

[8]The notion that rapid economic change is destabilizing is often made. For a recent statement, see Huntington (1991).

[9]Good examples would be France and Germany. They both benefited from impressive growth rates in the post–World War II period. But recently the need to maintain the international competitiveness of their economies has imposed increasing burdens on the labor force as firms curtail their labor forces and reduce benefits. The results is that unemployment has risen to historically high levels. (In the first quarter of 1992, they ranged in the 10% level for France and 6% for Germany [*Economist* 1992]). In fact, many point to rising levels of economic insecurity—even in the context of economic affluence—as explanations for the devastatingly poor election results for the Socialist Party in the French regional and local elections of March 1992 (in particular, see the election postmortem in *L'Express* 1992).

A substantial body of literature has developed around the theme of "deindustrialization," arguing that it has imposed serious hardships on the labor force. See, for example, Bluestone and Harrison (1982) and Harris (1984). Others, such as Pfaller (1987), have documented the serious insecurity that has arisen as a result of intensified international competitiveness facing national industries in the 1980s. Williams (1984) provides an account of the social strains associated with rising unemployment in the developed Western economies.

political maturity in a period of ostensibly high economic growth without this contributing to postmaterialist values.

Another reason for questioning this economic effect is that recent survey evidence from the Soviet Union and Eastern and Central Europe suggests the mass public embraces postmaterialist values in spite of the serious economic penury they have endured (Gibson and Duch 1993a). Inglehart (1992; Inglehart and Siemienska 1990) argues that this simply indicates that other factors compensated for low levels of wealth as defined in traditional Western terms. He notes, "The crucial factor is security during one's formative years, and it is clear that the communist regimes of Eastern Europe provided a relatively secure existence during most of the postwar era: job security was very high, rents were low, basic foods were provided at subsidized prices, and medical care and education were free" (Inglehart 1992, 14). But this sets up his argument as being nonfalsifiable—economic security drives postmaterialism, but if we see high levels of postmaterialism and low economic development at the same time, then factors other than economic wealth have promoted economic security.[10] We interpret the high levels of postmaterialism in the former Soviet Union and Eastern and Central Europe as a serious challenge to the scarcity and socialization hypotheses proposed by Inglehart.

Finally, there is increasing evidence that some of the items in the postmaterialism index are sensitive to economic fluctuations contemporaneous with the period in which the surveys were conducted. Inglehart (1990) concedes that inflation at the time of the survey will have an impact on postmaterialist scores because of the "fighting rising prices" item in the measure. But the evidence in Clarke and Dutt (1991) suggests a much more fundamental measurement problem. They demonstrate a perverse positive relationship between levels of unemployment and postmaterialism that is an artifact of Inglehart's measurement strategy. Hence, as unemployment rises and economic security drops, there is some evidence that individuals are more likely to select postmaterialist items.[11] This of

[10]If low levels of economic growth are to be discounted when they are accompanied by the adoption of more egalitarian social welfare measures, what implications does this have for the United Kingdom? Inglehart (1977) argues that postmaterialism has grown slowly in postwar cohorts because of the slow growth in the country's economy. But at the same time, the United Kingdom has aggressively put into place a panoply of welfare measures designed to increase personal security.

[11]Abramson and Inglehart (1992) provide a convincing rebuttal, although, even in their results, there remains in some countries a positive relationship between unemployment and postmaterialism.

course would have the effect of further confounding any relationship between economic security and postmaterialism. In fact, Clarke and Dutt (1991, 907) suggest this as one explanation for the weak or nonexistent trend toward postmaterialism in certain European countries.

We are not arguing that economic factors are unimportant. In fact, we suspect that contemporaneous economic factors have an important impact on how individuals choose the postmaterialist items. But it is the economy at the time of the survey rather than economic conditions during the respondent's formative years that matters. This argument has also been made by Flanagan, who asserts: "Clearly, these national populations are responding to Inglehart's items on the basis of the contextual peculiarities of their respective environment" (Flanagan 1982b, 115). Flanagan (1982b, 110) proposes the notion of "need regression" whereby needs can change rather abruptly and dramatically throughout the course of life. This notion challenges Inglehart's contention that economic security at only one point in time (i.e., early maturation) is relevant to the formulation of postmaterialist values.

Thus, postmaterialism is not significantly affected by the macroeconomic conditions at the period of maturation, but more likely by the economic conditions contemporaneous with the period during which the survey was conducted.[12]

Education

We believe that education contributes significantly to fluctuations in postmaterialism. Once education levels are properly controlled for (which is not always the case with Inglehart's analyses), the relationship between economic security and postmaterialism will likely disappear.

Education is important because certain items in the postmaterialist measure are more likely to be prioritized by those who, through years of education, have learned to appreciate the values they represent. The importance of education can best be understood by examining the four items used in the construct that measures postmaterialism:

1. Give people more say in the decisions of government (postmaterialist item);
2. Protect freedom of speech (postmaterialist item);
3. Maintain order in the nation (materialist item);
4. Fight rising prices (materialist item).

[12]It is important to point out that this is inconsistent with Inglehart's recent characterization of postmaterialist theory. Although he concedes that short-term factors such as inflation can affect postmaterialist values, he would continue to argue that values are shaped at an early stage of political maturation and retained throughout the life cycle. We reject the notion that early economic experiences affect in any important way subsequent values.

At the very least, the first two items represent important dimensions of support for democratic norms or values (Dahl 1971; Gibson, Duch, and Tedin 1992). Flanagan (1982a) has argued that these first two items plus the third make up a libertarian measure, which, of course, is an important dimension of democratic values (Gibson, Duch, and Tedin 1992). This point is even conceded to some extent by Inglehart (1992). Education is an important explanatory variable because an integral element of the postmaterialism construct is support for democratic values. An overwhelming consensus exists in the democratization literature that links higher education with support for general democratic values (Dahl 1971), and there is extensive empirical evidence in the developed democracies of this relationship.[13] There is some debate as to why education is strongly related to support for democratic norms. One school of thought suggests that education may inherently instill or reinforce liberal values such as equality, tolerance, and respect for individual liberty—the enlightenment argument (Flanagan 1982a). A second explanation is that individuals with higher education are more likely to be exposed to, and socialized into, accepting officially sanctioned norms promoting democratic values (see Weil 1985). For the purposes of this analysis, we are comfortable with either interpretation. Thus, because younger cohorts are more educated and therefore more socialized into democratic values, they have higher levels of what Inglehart characterizes as postmaterialist values.

Inglehart (1982, 1990) has argued that the respondent's education level is a proxy for the prosperity of the respondent's family. Hence, the results for the education variable are inconclusive because it is difficult to determine whether they indicate economic security at the time of political maturation or whether they indicate the impact of levels of education at the time the survey was taken. Three points need to be made in response to Inglehart. First, while the effects may be confounded—although we suspect only weakly—this is no reason to exclude education from the equation. In our case, it would be preferable to have a measure of family's prosperity but, unfortunately, these data are not available. Second, because we include in the equation a measure for macroeconomic performance at the age of maturation, we have an indicator of economic security that is independent of education. Third, Trump's (1991) assessment of the impact of economic conditions on the postmaterialist value orientations of children specifically controls for education (because all the respondents are in their early years of education) but fails to find an

[13]One of the rare but important dissenting voices on this issue is Jackman (e.g., Jackman and Muha 1984).

economic effect. This suggests that education is not a proxy for economic security.

Hence, as education increases, we expect more respondents to identify with these basic democratic norms. Our hypothesis is that economic security at the time of political maturation had little if anything to do with the choice of the postmaterialist items over the more "materialist" items identified by Inglehart. The cohort effects that Inglehart attributes to rising levels of affluence are simply the result of rising levels of *education*.

Urbanization

Inglehart argues that postmaterialism reflects levels of economic security at the time of early political socialization. Thus, factors characterizing the individual's political context at the time of the survey should have little impact on how postmaterialist items are chosen. We have argued though that these items measure support for basic democratic norms, and in a manner similar to education, an urban context may promote support for these norms. In fact, Inglehart (1990, 337) argues that urbanization, which is a component of what he calls cognitive mobilization, is a key contributing factor to democratization.[14] The urban dweller is more likely to be exposed to competing ideas, customs, and attitudes. The rural dweller, by contrast, is more likely to experience greater social and attitudinal homogeneity within his or her community. Therefore, the urban dweller, even when controlling for education, is more likely to be socialized to democratic norms of tolerance and free speech. Hence, rising levels of urbanization will result in higher levels of postmaterialism because such a context promotes an appreciation for democratic values that has nothing to do with the scarcity or socialization explanations proposed by Inglehart.

Life Cycle

Inglehart (1971, 1977a, 1990) has consistently argued that rising levels of postmaterialism are primarily the result of age cohort effects, rather than life-cycle effects. This position is consistent with the notion that postmaterialist values are set relatively early in life. Others (e.g., Dalton 1977) have argued that life-cycle changes are also important. As an individual grows older, materialist concerns and obligations grow more imposing. Therefore, older respondents are more likely to rank materialist items higher. And while Inglehart considers cohort effects to be the most significant contribution to rising postmaterialism, his data analysis indi-

[14] Arguments linking urbanization and democratization have been made extensively in the democratization literature. For an early statement, see Lerner (1958).

cates that life-cycle factors are significant (although he does not indicate what implications this has for his theory) (Inglehart 1990, 89).

One explanation for why postmaterialism declines with age builds on the notion that the postmaterialist items are actually tapping support for democratic values. As individuals grow older they tend to take these democratic principles for granted, and therefore their enthusiasm for these principles erodes (see Gibson and Duch 1993b, who present evidence of the link between the age of democracies and support for democratic principles). Thus, we expect the postmaterialism construct will have a similar negative relationship with age.

Hypotheses

Before proceeding to the results, let us briefly review the hypotheses that have been proposed: (1) the postmaterialist index is unrelated to measures of macroeconomic performance at the period of political maturation; (2) a more likely "economic" explanation for how respondents order these items is the performance of the macroeconomy at the time the survey is conducted; (3) personal economic affluence or security at maturation will not influence the ranking of Inglehart's postmaterialism items; (4) the items proposed by Inglehart are strongly related to democratic values, and therefore, education is likely to be the preeminent factor influencing how respondents rank them; (5) urbanization, which has an educative effect and tends to promote a tolerance of diversity and support for basic democratic values, will also have an independent positive impact on postmaterialism; (6) the correlation between age and Inglehart's postmaterialist measure will be negative.

Data

The data base used in this study is a compilation of Euro-Barometer surveys that were administered twice a year during the period 1973–84.[15] Eight nations, from a possible 11, are analyzed: France, Belgium, Netherlands, Germany, Italy, Denmark, Ireland, and Great Britain. With these eight nations and 21 years of surveys, nearly 130,000 respondents are available for analysis.[16]

[15]For general details on the sampling and survey work of the Euro-Barometer, see Rabier, Riffault, and Inglehart (1985).

[16]Although 11 nations are included in this data base, three nations—Luxembourg, Greece, and Northern Ireland—were excluded because of incomplete data. The Euro-Barometers conducted in Greece were not as complete or administered as often as in the other nations. Incomplete economic data for Luxembourg in the 1950s led to its exclusion. Although the Euro-Barometers include Northern Ireland as a separate system, it was excluded for the lack of adequate system-level economic statistics from the United Nations. These exclusions are not expected to bias the results of the analysis.

Defining Cohorts

Our analysis links economic conditions at the time particular age cohorts reach political maturation with levels of postmaterialism when the Euro-Barometer surveys were conducted. Inglehart (1990, 57) suggests defining economic conditions when the median age of the cohort is about 15. Dalton (1977) tested three age groups (ages 10, 15, 20) to isolate the specific age at which economic conditions appear to have the greatest impact on later attitudes. Dalton recalculates the generational indicator on the basis of progressively older formative periods and finds that "the economic environment surrounding the cohorts at age 10 is the strongest single predictor of value priorities, with a partial correlation coefficient of .40" (Dalton 1977, 466). Following Dalton's strategy of varying the definition of the age of political maturation from eight to 22 years of age, we also find that the age of 10–11 years yields the greatest predictive value for the measures of economic security. Cohorts were defined in five-year increments, each having an approximate mean age of 11 years. In other words, those who reached the age of 11 years during the 1950–55 period (i.e., those cohorts born 1939–44) constitute the first cohort.[17] Five cohorts have been defined in which the members reach the age of 11 years during one of the following periods: 1951–55, 1956–60, 1961–65, 1966–70, 1971–75. Each cohort numbers around 5,000 members.

Postmaterialism Operationalization

The dependent variable, postmaterialism, is operationalized following Inglehart (1977a); the two materialist items and the two postmaterialist items were presented earlier. Respondents were asked to indicate which two of the four goals were most important for the country. Respondents naming both materialist alternatives are classified as materialist, while those selecting both postmaterialist alternatives are classified as postmaterialist. Those using a combination of postmaterialist and materialist responses are ranked "mixed." Aggregation to the cohort level is achieved through calculating the mean postmaterialism scores of cohort members (high scores indicate high postmaterialism).[18]

[17]We do not include cohorts born prior to 1939 because we were not able to identify good national macroeconomic statistics for the pre-1950 period. These statistics are necessary in order to test properly the impact of economic conditions at the period of political maturation.

[18]This methodology differs from that used by Inglehart (1977, 1990), Dalton (1977), and Flanagan (1982a), who look primarily at the percentage difference between the number of postmaterialists and materialists in each cohort. Our mean score, ranging between 1 and

Economic Measures

The model includes a measure of economic performance at two time periods: at the respondents' political maturation, and at the time each survey was conducted. Three statistics are employed to measure economic performance: level of real GNP per capita, growth in the number of unemployed, and system-level inflation (see Appendix A for a discussion of sources). Together these measures provide a system-level indicator of economic security. In the subsequent analysis, we explore the impact of these three indicators at the time of political maturation and at the time of the survey.

Demographic Variables

Four demographic characteristics are hypothesized to affect the incidence of postmaterialism: education, age, urbanization, and respondent's income (see Appendix B for the wording of these questions).

Results

The results of our cohort-level regression analysis are presented in Table 1. Only for the purpose of this table, independent variables are coded into three categories: low (less than $-.5$ standard deviations), medium ($-.5$ to $+.5$ standard deviations), and high (greater than .5 standard deviations). For each cohort, Table 1 gives the mean postmaterialism score for those falling in the low, medium, and high categories of the independent variables. At the bottom of each column is the difference in means between the lowest and highest value of the independent variables.[19]

First, let us consider Inglehart's argument that economic conditions at the period of maturation should shape subsequent postmaterialist values. The first two economic variables in the table are measured at the period of the respondent's political maturation. Inflation has no effect across all cohorts except possibly the youngest, where the difference in postmaterialist scores is .22 (although here the eta^2 is only .01). Levels of GNP per capita have a more marked impact, as Inglehart would argue. In all five categories, there is evidence that the postmaterialism score is

3, is not expected to alter significantly the relative position or movement of the cohorts. In fact, the correlation between our measure and the measure employed by Inglehart is .96.

[19]Some cells in Table 1 are missing because those cells have very few or no cases. In those cases, differences were calculated based on the extreme cells that had information (e.g., if the high category is missing, then the differences are calculated based on the medium and low categories).

Table 1. Mean Postmaterialism Values by Generational Cohort, Economic Conditions at Time of Political Maturation, Education, and Income

	Date of Cohort Political Maturation									
	1950–55		1956–60		1961–65		1966–70		1971–75	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Inflation at maturation:										
Low	1.39	.79	1.52	.87	1.76	.96	1.80	.98	NA	
(Number of cases)		(1,322)		(3,390)		(2,844)		(1,388)		
Medium	1.40	.79	1.62	.92	1.63	.92	1.79	.97	1.99	.00
(Number of cases)		(3,169)		(2,154)		(3,103)		(3,625)		(549)
High	1.55	.89	NA		NA		1.83	.98	1.77	.97
(Number of cases)		(595)						(693)		(3,496)
(Low-high)	−.16		−.11		.13		−.04		.22	
Eta squared	.00		.00		.00		.00		.01	
GNP/capita at maturation:										
Low	1.22	.62	1.24	.64	1.46	.84	1.55	.89	1.63	.92
(Number of cases)		(1,476)		(1,401)		(1,416)		(1,471)		(1,259)
Medium	1.51	.86	1.70	.95	1.77	.97	1.71	.95	1.84	.98
(Number of cases)		(3,061)		(3,522)		(3,156)		(578)		(434)
High	NA		NA		1.75	.96	1.91	.99	1.84	.98
(Number of cases)						(1,375)		(3,657)		(1,803)
(Low-High)	−.29		−.46		−.30		−.36		−.22	
Eta squared	.03		.05		.02		.03		.01	
Inflation at survey:										
Low	1.52	.87	1.69	.95	1.79	.97	1.94	.99	1.95	.99
(Number of cases)		(1,701)		(1,890)		(2,088)		(2,088)		(1,590)
Medium	1.43	.82	1.60	.91	1.74	.96	1.80	.98	1.78	.97
(Number of cases)		(1,520)		(1,789)		(1,862)		(1,813)		(1,224)
High	1.25	.66	1.26	.67	1.45	.83	1.54	.89	1.61	.92
(Number of cases)		(1,353)		(1,379)		(1,440)		(1,451)		(1,231)
(Low-high)	.27		.43		.34		.40		.34	
Eta squared	.02		.04		.02		.03		.02	
GNP/capita at survey:										
Low	1.40	.79	1.50	.86	1.62	.92	1.68	.94	1.76	.96
(Number of cases)		(1,794)		(1,943)		(2,069)		(2,110)		(1,714)

Medium	1.47	.84	1.61	.92	1.74	.96	1.89	.99	1.90	.99
(Number of cases)		(1,473)		(1,546)		(1,717)		(1,705)		(1,281)
High	1.37	.78	1.56	.89	1.71	.95	1.85	.98	1.73	.96
(Number of cases)		(1,773)		(2,009)		(2,106)		(1,850)		(1,031)
(Low-high)	.02		−.06		−.09		−.17		.02	
Eta squared	.00		.00		.00		.01		.00	
Unemployment at survey:										
Low	1.48	.85	1.61	.92	1.72	.96	1.84	.98	1.74	.96
(Number of cases)		(1,749)		(1,973)		(2,007)		(1,698)		(925)
Medium	1.34	.75	1.46	.84	1.66	.93	1.81	.98	1.82	.98
(Number of cases)		(1,867)		(2,060)		(2,179)		(2,262)		(1,916)
High	1.42	.81	1.59	.91	1.67	.94	1.70	.95	1.79	.97
(Number of cases)		(925)		(994)		(1,174)		(1,353)		(1,155)
(Low-high)	.06		.02		.05		.14		−.05	
Eta squared	.01		.00		.00		.00		.00	
Education:										
Low	1.25	.65	1.29	.69	1.32	.73	1.39	.79	1.43	.82
(Number of cases)		(2,672)		(2,301)		(1,870)		(1,116)		(537)
Medium	1.45	.83	1.52	.87	1.55	.89	1.58	.90	1.60	.91
(Number of cases)		(1,527)		(1,886)		(2,127)		(2,311)		(1,414)
High	1.63	.93	1.91	.99	2.10	.99	2.20	.97	2.02	1
(Number of cases)		(437)		(659)		(1,094)		(1,819)		(1,989)
(Low-high)	−.38		−.62		−.78		−.81		−.59	
Eta squared	.03		.06		.10		.12		.06	
Respondent income:										
Low	1.30	.71	1.40	.80	1.65	.93	1.82	.98	1.83	.98
(Number of cases)		(1,633)		(1,656)		(1,987)		(2,184)		(1,360)
Medium	1.38	.78	1.57	.90	1.67	.94	1.75	.96	1.72	.96
(Number of cases)		(1,347)		(1,596)		(1,704)		(1,351)		(704)
High	1.62	.92	1.81	.98	1.81	.98	1.86	.99	1.84	.98
(Number of cases)		(1,332)		(1,511)		(1,456)		(1,129)		(730)
(Low-high)	−.32		−.40		−.16		−.04		−.00	
Eta squared	.03		.03		.01		.00		.00	

Note: Low is $< -.5$ standard deviation (SD) from population mean. Medium is $> -.5$ and $< +.5$ standard deviation. High $> .5$ standard deviation. Number of cases is in parentheses.

higher for those individuals that matured during periods of high GNP per capita. Thus, with respect to levels of GNP per capita at the time of maturation, there is some evidence of a link between economic security and the postmaterialism score.

The rest of the table explores the impact of the alternative explanations for fluctuations in the postmaterialism scores. Economic conditions at the time of the survey seem to be somewhat correlated with postmaterialism scores. This is particularly the case for inflation. For every cohort, the average postmaterialism score is higher when the survey is conducted during periods of low inflation. GNP per capita levels and unemployment at the time of the survey have little impact on postmaterialism.

Respondent's income has somewhat of an impact on postmaterialism but only among the older cohorts. In the two oldest cohorts, there is some indication that postmaterialism is higher among those with greater income levels. Education clearly has the greatest influence on postmaterialism. In all of the cohorts, those with higher levels of education are much more likely to rank Inglehart's postmaterialism items higher than the materialist ones. To briefly conclude this discussion of bivariate relationships, postmaterialist scores seem to be most strongly correlated with education, GNP per capita at maturation, inflation at the time of the survey, and somewhat with respondent's income.

We now move on to a multivariate analysis that permits us to evaluate the relative contribution of these variables to fluctuations in the postmaterialism score. Table 2 reports the results for two models: one at the cohort and the other at the individual level of analysis. We begin with the cohort-level model. The model explains an impressive 46% of the variance. Age is significant in the model, which suggests a life-cycle effect. As individuals age, they are less likely to favor postmaterialist items. In fact, with a standardized coefficient of $-.37$, it is one of the most powerful predictors of the postmaterialism score. Our urbanization and income measures are not statistically significant in the model. Somewhat surprising, education is not statistically significant.

We also see that at the cohort level economic conditions at the time of the survey are significant. The inflation variable is significant, and its standardized coefficient, $-.47$, indicates that of all the variables in the model, it has the greatest impact on the postmaterialism score. High rates of inflation at the time of the survey are negatively correlated with the postmaterialism score. Neither GNP per capita nor unemployment are significantly correlated with this measure. These results suggest that inflation at the time of the survey is the primary economic condition that shapes the respondent's ranking of the postmaterialism items.

Most surprising are the results for the variables measuring economic

Table 2. Postmaterialism, Results of Multivariate Models at the Individual and Cohort Level of Analysis

	Cohort Level	Individual Level
Demographics:		
Age	−.01**	−.01**
	(−.37)	(−.07)
Education	.01	.10**
	(.10)	(.30)
Urbanization	−.04	.08**
	(−.04)	(.07)
Income	.00	−.00
	(.00)	(−.00)
Economics at maturation:		
GNP/capita	.50	−.20*
	(.09)	(−.03)
Inflation	.00	.00
	(.04)	(.00)
Economics at survey:		
GNP/capita	.07	.30**
	(.08)	(.05)
Inflation	−.01**	−.03**
	(−.47)	(−.16)
Unemployment	.01	−.00
	(.08)	(−.00)
Constant	2.11*	1.38*
Adjusted R^2	.46	.14
Number of cases	290	13,039

Note: Beta in parentheses. GNP/capita expressed in thousands.

*$p < .05$; **$p < .01$.

conditions at the time of maturation. Neither GNP per capita nor inflation when measured at the time of maturation have an important correlation with the postmaterialism scores. A similar pattern of results is repeated when we conduct the analysis at the *individual* level. The variance explained dropped significantly, to 14%. In contrast to the cohort level, education here is the most powerful predictor of the postmaterialism score. It has a standardized coefficient of .30 and is statistically significant. Age and urbanization are also significant in the expected direction, but their standardized coefficients are substantially lower than those for education. The income variable is not at all significant in the model.

With respect to economic conditions at the time of the survey, inflation and GNP per capita are both significant, but GNP has a relatively small standardized coefficient. Once again, rising inflation at the time of the survey leads to lower postmaterialism scores. As was the case with the cohort-level analysis, inflation at the time of political maturation has no effect on how individuals rank-order the Inglehart items. GNP per capita at maturation has a statistically significant coefficient, but it is negative, suggesting that economic security results in lower postmaterialism, a finding that contradicts Inglehart's scarcity theory (note though that the standardized coefficient is relatively small and only significant at the .05 level).

We can draw three important conclusions from the results presented thus far. First, there is no support for Inglehart's contention that macroeconomic conditions at the age of political maturation influence postmaterialist values, as he measures them. Second, as others (Abramson and Inglehart 1992; Flanagan 1982a, 1982b; Clarke and Dutt 1991) have demonstrated, inflation at the time of the survey greatly affects how respondents rank the postmaterialist items. Finally, education, as we hypothesized, is an overwhelmingly important factor in the explanation for how respondents rank these four items.

A possible criticism of our approach is that estimating the model on the pooled sample of all nations ignores important national effects that undermine Inglehart's hypothesized economic relationships. Clarke and Dutt (1991), for example, find important cross-national differences in the relationship between economic variables and fluctuations in postmaterialism. Hence, Table 3 estimates the model for each country separately.

Once again, the results provide very little support for the Inglehart argument. First, education remains by far the best predictor of how respondents rank these postmaterialism items. The coefficient is large and statistically significant for all the countries with the exception of Ireland. The urbanization variable is statistically significant in all but two countries, the Netherlands and the United Kingdom. The age variable, on the other hand, is significant in only one country: Italy. Income is significant and positive in two countries: Belgium and the Netherlands.

The variables that measure the economic situation at the time of the survey also generate mixed results. GNP per capita has a strong positive relationship with the Inglehart score in France and the United Kingdom but is negatively correlated in Belgium and the Netherlands. The correlation is insignificant in the other four countries. Unemployment also has a variable effect: a significant positive correlation in Germany but negatively correlated in Belgium and the Netherlands. The positive correlation in Germany may be the result of the absence of an unemployment option

Table 3. Postmaterialism, Results of Multivariate Models at the Individual Level of Analysis, by Country

	France	Belgium	Netherlands	Germany	Italy	Denmark	Ireland	United Kingdom
Demographics:								
Age	.01	−.00	−.00	−.02	−.02**	.00	−.02	−.01
	(.10)	(−.01)	(−.04)	(−.16)	(−.19)	(.00)	(−.20)	(−.06)
Education	.12**	.09**	.13**	.09**	.08**	.13**	.01	.08**
	(.35)	(.28)	(.37)	(.24)	(.30)	(.41)	(.02)	(.19)
Urbanization	.08**	.11**	−.00	.12**	.08**	.13**	.10**	.08
	(.07)	(.09)	(−.00)	(.11)	(.08)	(.11)	(.13)	(.06)
Income	.01	.06*	.05*	−.01	−.01	−.04	−.02	−.00
	(.01)	(.06)	(.05)	(−.02)	(−.01)	(−.04)	(−.02)	(−.00)
Economics at maturation:								
GNP/capita	.10	.10	−.04	.04	−.07	.10	−.02	−.08
	(.12)	(.16)	(−.05)	(.06)	(−.06)	(.11)	(−.01)	(−.02)
Inflation	−.03	−.08*	−.03	−.10	−.02	−.10**	.01	.01
	(−.05)	(−.15)	(−.05)	(−.10)	(−.05)	(−.18)	(.02)	(.03)
Economics at survey:								
GNP/capita	.04**	−.10**	−.40**	.01	.01	−.01	.01	.07**
	(.13)	(−.15)	(−.09)	(.02)	(.05)	(−.03)	(.02)	(.14)
Inflation	.08**	−.05**	−.11**	−.04	−.03**	−.02	−.00	−.04**
	(−.15)	(−.09)	(−.20)	(−.05)	(−.13)	(−.03)	(−.02)	(−.22)
Unemployment	.01	−.07**	−.03*	.08**	−.01	.03	.01	.02
	(.01)	(−.23)	(−.13)	(.20)	(−.01)	(.05)	(.05)	(.06)
Constant	.68	2.00*	1.65*	.64	1.83**	1.18	1.40*	1.27
Adjusted R^2	.15	.15	.15	.15	.16	.19	.05	.07
Number of cases	1,901	1,571	1,971	1,443	2,229	1,667	1,408	842

Note: Beta in parentheses. GNP/capita expressed in thousands.

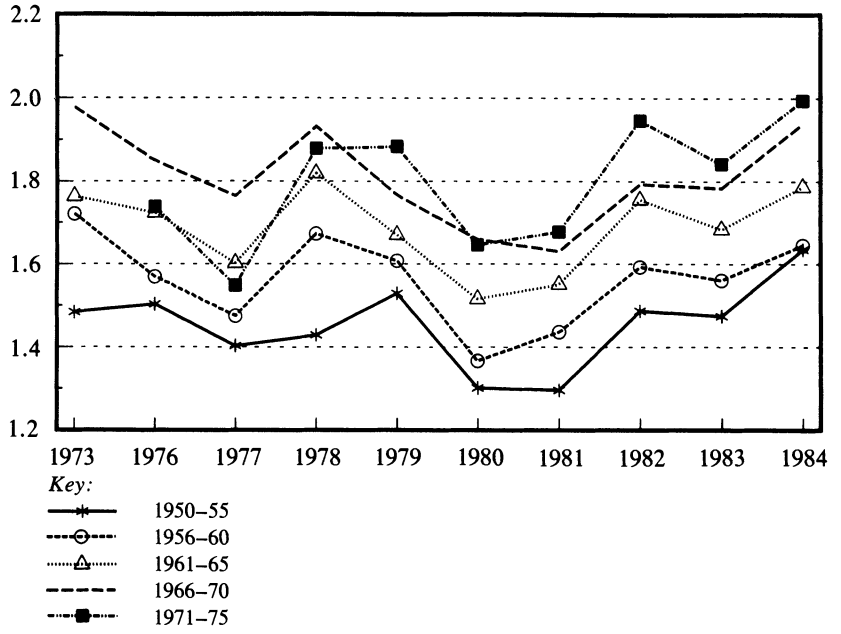
*p <.05; **p < .01.

in the materialist items, as suggested by Clarke and Dutt (1991). This, however, is the only case supporting their argument. It is interesting to note that Germany is the one country in which Inglehart and Abramson (1992) also find a consistently positive correlation between unemployment and postmaterialism; it is also the country with the greatest positive unemployment effect on postmaterialism in the Clarke and Dutt (1991) model. Our results also conform to Inglehart and Abramson (1992) with respect to Belgium; we both find the expected negative relationship between unemployment and postmaterialism, although, unlike these authors, we also find a negative relationship in the Netherlands. The unemployment results in Germany, as contrasted with Belgium and the Netherlands, are sufficiently strong and contradictory to raise, as Clarke and Dutt (1991) do, serious questions regarding measurement. Inflation is much more consistent. In five countries—France, Belgium, the Netherlands, Italy, and the United Kingdom—the coefficient is significant and negative. As we saw earlier, rising levels of inflation at the time of the survey reduce the likelihood that respondents would choose Inglehart's postmaterialist items over the materialist ones.

Results for the variables measuring economic conditions at political maturation provide little support for the Inglehart hypothesis. GNP per capita is not significant in any of the countries. Inflation is significant but only in two countries: Belgium and Denmark. The findings reported in Tables 1 through 3 clearly suggest that economic conditions at what Inglehart characterizes as the age of political maturation have no significant impact on postmaterialism. Our findings confirm that economic factors at the time the survey was conducted greatly influence how individuals rank Inglehart's postmaterialist items; of particular importance here is the rate of inflation and to a lesser extent GNP per capita. This is consistent with Clarke and Dutt (1991, 911), who find that inflation and GDP are related to the postmaterialism index. Rather interestingly, for the combined European sample we do not discover the unemployment effect that represents a central part of the Clarke and Dutt (1991) criticism of Inglehart's measurement. In the individual country equations, only Germany has the positive relationship discovered by Clarke and Dutt (1991). Finally, the better educated are more likely to rank the postmaterialist items higher than the materialist issues, which is consistent with Dalton's (1977) multivariate models of postmaterialism.

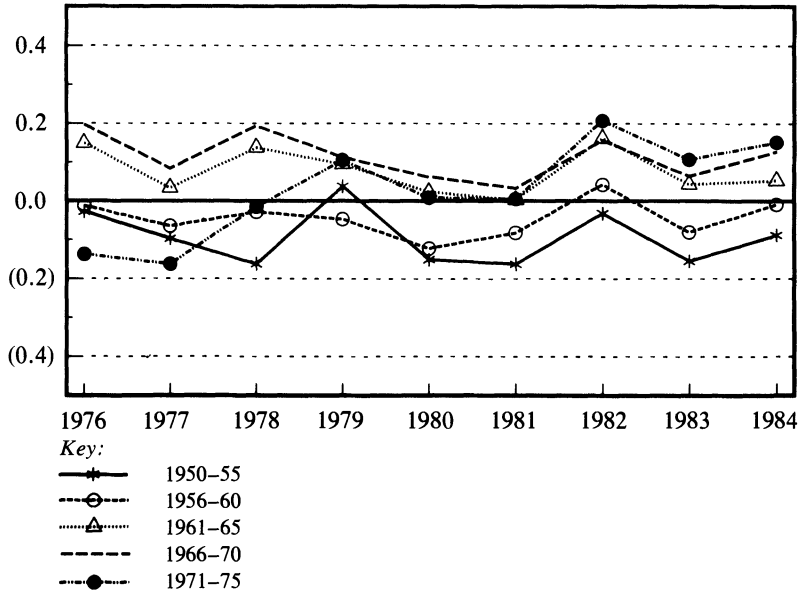
To illustrate the implications of these findings for the Inglehart argument, we have revisited the familiar cohort plot in Figure 1, which Inglehart has repeatedly presented to demonstrate that there are very persistent differences in levels of postmaterialism among the five cohorts

Figure 1. Cohort-level Postmaterialism Scores for Western Europe



in his analysis. We have argued that once we control for economic conditions at the time of the survey and the education levels of respondents, there is not much difference among the cohorts. To demonstrate that this is the case, we generate the residuals from a simple equation that regresses the postmaterialism measure on education and inflation at the time of the survey (estimated at the cohort level). In Figure 2, the residuals are then plotted over time for each of the five cohorts in a manner similar to Inglehart's plot from Figure 1. We can see that there are very small differences among the five cohorts once we take into consideration their education and their responses to economic conditions when the survey took place. In fact, there are a number of years in which even the rank-ordering hypothesized by Inglehart is reversed. For example, in 1976 and 1977 the oldest cohort has a higher residual than younger cohorts. In other words, once we take into consideration level of education and inflation at the time of the survey, there are some years when the oldest cohorts actually have higher postmaterialism scores than the younger ones.

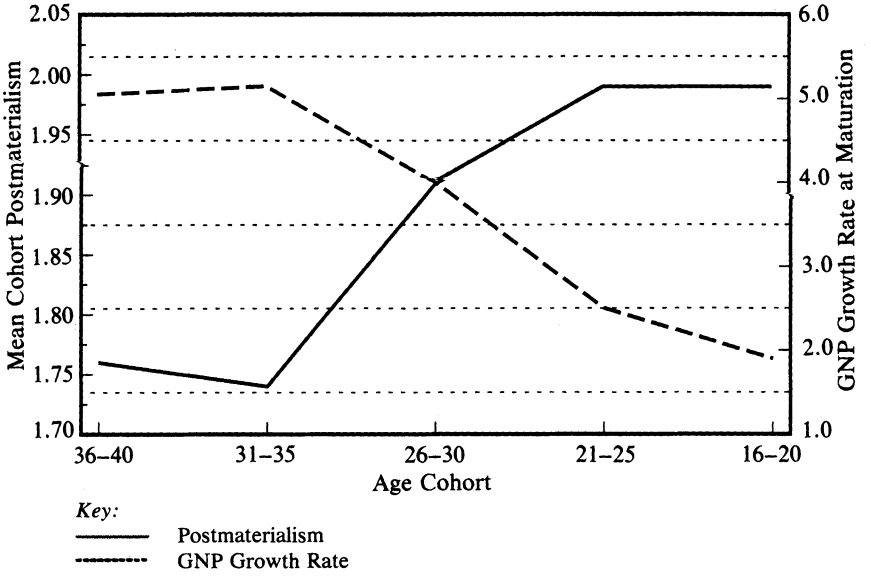
Figure 2. Residuals of Cohort-level Regression of Postmaterialism on Education and Inflation at the Time of the Survey



The Former Soviet Union

We would like to end this review of the empirical data with a brief examination of data from the European part of the former Soviet Union. It was pointed out earlier that one of the paradoxes regarding the hypothesized economic determinants of postmaterialism was the high levels of postmaterialism recently discovered in the former Soviet Union and Eastern and Central Europe (Gibson and Duch 1993a; Inglehart and Siemienska 1990; Inglehart 1988, 1992). For example, Gibson and Duch (1993a) find that 11% of the European USSR respondents were pure postmaterialists and 53% were mixed, naming one material and one postmaterial goal. Inglehart and Siemienska (1990) have comparative figures of 10% and 60% for Poland. These are fairly high figures when compared with the pure postmaterialist results from Europe, where in 1990 the lowest figure was 14% for Italy and the highest 29% for Denmark. The mixed category is even more similar to Western Europe. It ranges from a low of 55% for France and Belgium, rising to 60% for Italy and Ireland (Abramson and Inglehart 1992). Thus, levels of postmaterialism in the former Soviet Union are relatively high, particularly in light of the serious economic problems it has recently faced.

Figure 3. Postmaterialism and Economic Growth Rates at Maturation in the Soviet Union



For many, these high levels of postmaterialism contradict the notion that these values emerge out of rising economic security and the end of scarcity. Inglehart and Siemienska (1990) explain away the anomaly by arguing that economic development might not have been high in the former Soviet Union, but levels of social and economic security were high because of government activism. But an examination of the data from the former Soviet Union raises a number of important questions about Inglehart's claims.

First, it is not simply that postmaterialism is high in the Soviet Union. The problem is that there appears to be a very strong negative correlation between postmaterialism and the level of economic performance at the age of maturation. Figure 3 provides a very simple illustration of the problem. The figure plots postmaterialism scores across five age cohorts and also plots the economic growth rate[20] experienced by

[20]Accurate measurement of Soviet economic performance is difficult to obtain. However, measures from these different sources are highly correlated. The average growth rate presented by the two sources (the CIA, as reported in Gregory and Stuart 1990; Khanin 1988) has been used for the period from 1960 to 1985. These data are unavailable after 1985. For the period 1986 to 1990, data were taken from *The Economy of the USSR, Summary and Recommendations: A Study Undertaken in Response to a Request by the Houston Summit* (1990).

Table 4. Postmaterialism Multivariate Results from the Former Soviet Union

Variable	
Religion	−.08**
	(−.10)
Age	−.01**
	(−.21)
Sex	−.16**
	(−.13)
Education	.11**
	(.18)
Affluence	−.01
	(−.02)
Constant	2.35**
Adjusted R^2	.09
Number of cases	1,397

Note: Beta in parentheses.

*$p < .05$; **$p < .01$.

each of those cohorts at their age of political maturation.[21] Clearly the relationship is negative: the correlation coefficient is −0.96. Postmaterialism is at its peak (an average of almost 2) for individuals who reached political maturity in a period of poor economic performance (the average GNP growth rate here is less than 2%). Conversely, those reaching political maturity when the USSR had high economic growth rates exhibit low levels of postmaterialism.

This leaves little doubt that the economic security explanation for rising levels of postmaterialism simply does not comport with the data.

[21]Five cohorts were defined in a manner similar to that used in the Euro-Barometers. Age cohorts were arbitrarily defined in five-year increments (i.e., years 16–20, 21–25, 26–30, 31–35, and 36–40 at the time of the survey). System-level economic conditions at the time of each cohort's maturation were then estimated for each cohort member. For example, the first age cohort (ages 16–20), which reached the age of 11 years between 1970 and 1974, was assigned the system-level mean GNP growth rate experienced during the 1970–74 period. Unfortunately, reliable estimates of Soviet economic growth prior to the 1960s is not available. Because of this limitation, age cohorts over the age of 40 have not been included. These older cohorts would have reached political maturation prior to the 1960s.

Once again, the explanation for rising postmaterialism is much more likely the fact that education levels have risen so dramatically in the Soviet Union in the postwar period.[22] Table 4 presents the results for a simple model with postmaterialism as the dependent variable (employing an operationalization identical to that used in the Euro-Barometer analysis above) and religiosity (whether one is a believer or not), age, wealth (defined as the number of consumer goods in the household), gender, and education (measured by four categories: unfinished secondary, finished secondary, unfinished tertiary, and finished tertiary). These data have been analyzed extensively elsewhere (e.g., see Gibson and Duch 1993b), and a detailed discussion of the sampling for this study is provided in Appendix C.

The importance of two variables in the model—age and education—we believe raises serious questions about Inglehart's interpretation of why postmaterialist values are high in the former Soviet Union. It is curious that age, with a negative coefficient, is such a powerful predictor in the model. Even if we accept Inglehart's argument that postmaterialism is high in former communist regimes because the government has provided citizens with a certain degree of economic security, the dramatic deterioration in the economy of the Soviet Union during the past two decades should have registered some effect on the younger cohorts.[23] But the results in Table 4 clearly indicate that the young are much *more* likely to rank Inglehart's postmaterialist items higher than the materialist ones.

The significance of education in the model also raises a question about Inglehart's argument. We argue that education is a significant determinant of postmaterialism because the items in his construct largely measure an appreciation for democratic norms. But Inglehart argues that education is a proxy for economic security at the time of political maturation. Why, in a regime that has provided an extensive social welfare safety net, should education continue to have such an important predictive effect? If education is one of the social benefits that tends to be made available on a highly equitable basis, it should have no importance in the model as a proxy measure for economic security. Hence, the importance of age and education in the model of postmaterialism in the European part of the former Soviet Union seriously challenges the economic explanation for this phenomenon proposed by Inglehart.

[22]For an excellent account of this dramatic improvement in education, see Ryan and Prentice (1987).

[23]In fact, Inglehart (1992, 18) comments on such a pattern in the case of his findings for Poland and Czechoslovakia.

Conclusions and Implications

In general, we are skeptical about sweeping claims that either economic (Bell 1960; Inglehart 1990) or even political (Fukuyama 1989) conditions permanently change the preferences of citizens. Inglehart's thesis is particularly suspect because it assumes that economic conditions at a very early age mold the value preferences of individuals for life. In the era of dramatic political change that we are witnessing today with such unlikely countries as Albania and Argentina embracing democratic values (which we have argued are very similar to the postmaterialist construct), it seems rather unlikely that individuals participating in these revolutions had their value preferences shaped at a very early age.

The evidence we present here strongly supports our contention that this assumption is simply wrong. Economic conditions at the period of maturity do not affect how individuals rank the items that Inglehart proposes for measuring postmaterialism. Neither at the cohort nor at the individual level is there support for this argument. Moreover, there are not even any individual countries where this proposition holds true.

Economic factors affect how individuals rank the four Inglehart items but hardly in a fashion that lends any credence to the postmaterialist theory. Our findings support the contentions of Clarke and Dutt (1991) and to some degree Flanagan (1982a, 1982b), that economic fluctuations during the period in which the survey was administered represent the primary economic impact on how individuals rank these items. In particular, levels of inflation, contemporaneous with the administration of the survey, are important predictors of how the items are ranked. As others (Flanagan 1982a, 1982b; Clarke and Dutt 1991) have pointed out, this is a measurement artifact resulting from the inclusion among the four items of a statement directly concerning inflation. But even Inglehart (Inglehart and Abramson 1992) concedes that inflation at the time of the survey affects levels of postmaterialism. What Inglehart does not predict, and what clearly contradicts his theory, is that contemporaneous levels of inflation affect how individuals rank these items, while the economic variables measured at the time of political maturation have no discernable impact. It is this combination of outcomes that particularly places in question Inglehart's argument regarding the impact of economic security at maturation.

Education is an important predictor of how Inglehart's items are ranked. We would argue that this has little to do with economic security at the time of maturation (the absence of a macroeconomic effect attests to this) but is rather a reflection of the nature of the items included in the

measure. The items tap certain fundamental democratic values—liberty and rights consciousness, for example—and the better educated simply have had more of an opportunity to learn to appreciate such principles. This is consistent with much of the literature on democratic values and with the work of Flanagan (1982b).

These results signal that great care should be exercised in interpreting the measure of postmaterialism that is very widely employed in comparative research. A number of recent studies, for example, have documented the rising levels of postmaterialism in developed democracies (Abramson and Inglehart 1992) and a broader diffusion of postmaterialism throughout the developing democracies (Inglehart and Siemienska 1990). The fact that respondents in the developed democracies are more likely to give priority to postmaterialist as opposed to materialist items reflects a more-educated citizenry that has gained an appreciation for certain fundamental democratic principles. Education, not the end of scarcity and emergence of economic security, has produced this set of preferences. Similarly, in many of the former communist regimes, postmaterialist items are ranked highly (Inglehart and Siemienska 1990; Inglehart 1988; Gibson and Duch 1993a) in large part because education levels in these countries are surprisingly high. This is the explanation for the apparent paradox of high levels of postmaterialism among cohorts maturing during periods of declining economic performance.

Finally, our goal was to simply evaluate—in as rigorous an empirical manner as possible—Inglehart's argument that economic security at the time of maturation affects how individuals rank these postmaterialist items throughout their subsequent life cycle. The fact that the empirical results are at odds with his theoretical predictions raises questions about the overall soundness of the theory. Obviously, one can conclude from our findings that the problem is measurement, and that only if the concept were properly measured would empirical tests confirm the theory. We do not think the results are a measurement artifact and therefore interpret the negative results theoretically. We reject the underlying theoretical notion that individuals' values are somehow irrevocably shaped at an early period of socialization by prevailing economic conditions. Our results confirm that this is an unreasonable argument. We suspect that regardless of what items are employed to measure postmaterialism, the argument concerning the importance of early economic conditions would be rejected.

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APPENDIX A
Economic Conditions Operationalization

Three economic statistics (GNP per capita, unemployment, and inflation rate) are employed to measure the economic conditions at the time of respondents' political maturation and also when the survey was administered.

Economics at Political Maturation

GNP per capita during political maturation is expressed in constant 1975 U.S. dollars to control for exchange and inflation rates. The data are from the *Economist* (1982). Each respondent is coded with the mean national GNP per capita associated with the time period in which his or her cohort reaches political maturation.

Unemployment statistics are measured in terms of the rate of growth of the number of unemployed. The average rate of growth is calculated as the fifth root of the total amount of growth over the five-year period in which each cohort reaches maturation. Unemployment rates (i.e., total unemployed expressed as a percentage of the active population) were not used for two reasons. First, unemployment rates are unavailable for all of the nations of interest over the time periods dating back to the point of political maturation of the earliest cohort. Second, differences in the methodology used to calculate the unemployment rate across time and nations complicated its use. In turn, using the growth in the number of unemployed as an indicator could be complicated by differing population growth rates among nations, but the effects of these differences are not expected to be significant and therefore are not likely to bias the results of this analysis.

Inflation rates were based on consumer prices and were calculated using the same methodology (fifth root of the total increase during the five-year period). These data are from the *Economist* (1982).

Economics at the Time Surveys Were Administered

The same set of economic statistics was used to measure economic conditions (GNP per capita, inflation, and unemployment) at the time the surveys were administered. With two exceptions, these data were calculated using the same methodology described above for the economic statistics at political maturation. The first exception is that GNP per capita is expressed in 1980 U.S. dollars. The second exception is that in the later time period, when unemployment rates were widely available, these rates were used (instead of using calculations of growth in unemployment).

The economic statistics associated with the surveys are point estimates of economic conditions at the particular time at which the survey is administered and therefore do not require any averaging. These data were obtained from the International Monetary Fund (1979, 1986) and the International Labour Office (1985).

APPENDIX B
Survey Question Wording

Postmaterialism

The postmaterialism index is derived from the answers to the following two questions.

> 1. There is a lot of talk these days about what this country's goals should be for the next 10 or 15 years. On this card are listed some of the goals that different people say should be given top priority. Please say which one of them you, yourself, consider most important in the long run?

(1) Maintaining order in the nation;
(2) Giving the people more say in important government decisions;
(3) Fighting rising prices;
(4) Protecting freedom of speech.

2. Second choice of what country's goals should be (same list).

Education

How old were you when you finished your full-time education?
(1) Up to 14 years; (2) 15 years; (3) 16 years; (4) 17 years; (5) 18 years; (6) 19 years; (7) 20 years; (8) 21 years; (9) 22 years; (10) Still studying.

Response code (10) was coded as missing for the purposes of this analysis. This response defies the monotonic nature of the coding system and becomes hard to interpret among young respondents.

Cosmopolitanism

Objective size of community
(1) Smallest third; (2) Medium third; (3) Largest third.

Respondent Income

Family Income
(1) Lowest quartile; (2) Second; (3) Third; (4) Highest quartile.

APPENDIX C
The European USSR Sample

This analysis is based on a sample of residents of that portion of the USSR that is in Europe.[24] The details of the sample are as follows:

1. *The Universe.* Our original goal was to include residents from all territories within the European USSR. Except for two areas, the goal was achieved. In the original sample, 54 respondents were targeted from Azerbaijan. Due to political unrest in that republic (spring 1990), including the situation with the Soviet military, we deemed it difficult and perhaps dangerous for interviewers to attempt any interviews. Consequently, we cannot generalize our findings to include Azerbaijan.

In addition, there were approximately five subjects targeted from the European portion of Kazakhstan. Due to the expense of interviewing these subjects, and because Kazakhstan is only partially and nominally in Europe, these interviews were not attempted.

Thus, the specific geographical universe from which the sample was drawn includes residents of the Republics of Estonia, Latvia, Lithuania, Byelorussia, Ukraine, Moldavia, Georgia, Armenia, and the portion of Russia west of the Ural Mountains.

2. *The Sample.* A primary sample of 1,590 respondents was selected. In anticipation of the nonresponse rate, a supplementary sample of 410 respondents was also drawn. Respondents from each of the republics identified above were included in the sample.

This sample is a four-stage stratified sample. At the initial stage of the sampling, geographical units were classified according to four statistical indices: (1) the level of industrial development (e.g., the number of plants and factories); (2) the level of well-being of the population (e.g., income per family); (3) ethnocultural peculiarities (e.g., the degree of homogeneity of the distribution of nationalities); and (4) accessibility of cultural amenities

[24]The European USSR Sample description was developed by James L. Gibson. A more detailed description of the study can be found in Gibson and Duch (1993b).

(e.g., the numbers of libraries, cinemas, theaters, etc.). These criteria were selected because of their assumed importance in structuring the beliefs of ordinary respondents. The geographical units classified were the oblasts in Russia and the Ukraine, and the republics elsewhere. A total of 85 units was classified within these 18 homogeneous strata.

At the second stage of the sampling, eight strata were identified, including: (1) capitals of the union republics with a population more than one million; (2) capitals of the union republics with a population less than one million; (3) regional centers with a population more than one million; (4) regional centers with a population less than one million; (5) centers of the autonomous republics, regions, districts; (6) peripheral towns of the autonomous republics, regions, districts; (7) Moscow and Leningrad; and (8) villages.

At the third stage of the sampling, each geographical unit fitting within the 18 × 8 matrix was enumerated, and units were sampled. Sampling points were drawn from each cell in the matrix. Where there was discretion on which of several units to select, experts on the area were consulted in an effort to select the most representative unit. The strategy resulted in 62 sampling points.

3. *Respondent Selection.* Within each of these sampling points, respondents were selected through random procedures. Using the records of the address bureaus and farm records, specifically named respondents were identified. Thus, unlike many Western samples, there was no need to select individual respondents within households using household enumeration methods.

It is important to consider whether the records of the address and farm bureaus constitute a useful sampling frame. Certainly these records are superior to using voting lists, which are derived mainly from the address and farm records themselves. But using these records clearly has some disadvantages, in addition to their many important advantages. There is a strong incentive for all Soviet people to register with the bureaus. It is the records from these bureaus that are used to issue the internal passports. Not only is it a criminal offense not to register, but this is also the required point of registration for military service. These records have also become quite important recently for purposes of rationing. These records also have the advantage of being updated continuously.

At the same time, however, it is clear that some Soviets do not live where they are thought to live according to the official records. The proportion of people in this category is impossible to judge with any precision, but is probably on the order of 10% to 15% in large cities, much less in small cities, and practically nil in villages and rural areas. Thus, it was impossible to locate some of the respondents selected to be interviewed.

4. *The Questionnaire.* The survey instrument was constructed primarily in the United States, but was pretested in Moscow, and was significantly revised by both the U.S. and Soviet research teams working closely together. (The European USSR questionnaire represented the joint efforts of the U.S. and Soviet research teams, and the *Los Angeles Times,* which paid for a portion of the research. I. A. ("Bud") Lewis, director of the *Los Angeles Times* Poll, contributed substantially to the design and execution of the survey.) The survey asked a broad array of questions on many topics. The survey instrument was back-translated twice and every effort was made to ensure that the questions, though mainly Western in origin, were tailored to the Soviet cultural context. Special attention was given to training the interviewers in techniques more common in Western survey research. Of course, the respondents had no idea that the survey was in any way connected with a U.S. research project.

5. *Response Rate.* Of the 1,590 respondents originally selected in the sample, 268 could not be interviewed. As in U.S. studies, the overwhelming explanation of not completing an interview with a respondent was not the subject's refusal but the inability to locate the specific respondent. In one sense, then, the response rate is 83%: 1,322 completed interviews/1,590 selected respondents.

Anticipating that some proportion of the respondents could not be interviewed, a supplementary sample of respondents was randomly selected using precisely the same methods as used for the primary sample. Since the gender, age, and sampling point were known from the address bureau records, those who could not be interviewed were replaced by subjects in this randomly selected supplementary sample who matched the (non)respondent on these three criteria. The objective of this strategy was to generate a specific number of completed interviews. Interviews were completed using 239 respondents from the supplementary sample to replace those respondents from the primary sample who could not be interviewed.

Thus, the most reasonable way to calculate the response rate is to divide the 1,561 completed interviews by 1,858 (1,590 respondents from the primary sample and 268 from the supplementary sample). This results in a response rate of 84%.

6. *The Interviewers*. Interviewers were recruited and trained by staff from the Institute of Sociology (USSR Academy of Sciences). The interviewers were instructed in standard interview techniques. Of the 266 interviewers used in the project, 236 completed the questionnaire and returned to Moscow. Like interviewers in the West, these interviewers were overwhelmingly female (71%). The average age was 35 years. Reflecting their associations with various institutes, the interviewers are quite well educated, even though two-thirds report an average monthly income of less than 150 rubles per family member. One-fourth of the interviewers are members of the Communist Party, while two-thirds are members of a trade union. Thus, the Soviet interviewers are better educated than Western interviewers, but in most other respects are similar to their Western colleagues.

Several steps were taken to discourage cheating on the interviews. First, a fairly elaborate system of supervision was put in place. Second, each questionnaire was carefully checked by a supervisor. Third, with just a few exceptions, interviewers were not allowed to conduct a great number of interviews. The average number of interviews conducted per interviewer is 5.9 (in three cases interviewers conducted a total of one interview; the maximum number of interviews for an interviewer was 22, which was the case for only one interviewer). Finally, verification of interviews was successful in a small percentage of the cases. No instances of falsification were discovered.

7. *Data Reliability*. As with all surveys, there can be no absolute guarantee of the reliability of all the data collected. All that we can guarantee is that every reasonable step to insure the quality of the data was in fact taken.

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