A Reply to Abramson and Inglehart's "Education, Security, and Postmaterialism"

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Abramson and Inglehart (1994, this issue) raise a number of reasonable criticisms about our earlier paper. Our reply addresses the shortcomings they identify and points out areas where we believe they are incorrect. We begin with a general point about their critique. First, while we are not fanatics about multivariate analysis, one of the principal criticisms we make is that Inglehart does not subject his hypotheses to multivariate tests. A review of the tables and figures in Abramson and Inglehart's article indicates that they continue to eschew this multivariate strategy that we believe is critical to a proper test of the Inglehart arguments. Moreover, in virtually every section of the critique, they "refute" our case by referring to bivariate correlations, either ones they have generated or ones from other studies. With the presentation of simple bivariate findings (with no measures of association), they cannot counter our argument, which at least makes an attempt to specify a multivariate model and gives some indication of the statistical significance of the correlations. Our reply to Abramson and Inglehart follows the four-point organization of their critique.

Truncated Variance

We take strong issue with Abramson and Inglehart's suggestion that we "deliberately exclude all respondents born before World War II." In footnote 17, we explained that pre–World War II macroeconomic indicators were incomplete and were often measured much differently from the post–World War II statistics. They argue that the lack of a correlation between conditions experienced during formative socialization periods and postmaterialism is the result of this "deliberate" exclusion of prewar cohorts from the analysis. First, we interpret Inglehart's argument regarding the impact of early socialization on postmaterialist values to be general, not confined to any particular period. Hence, the hypothesized relationships should be present for cohorts socialized both before and after the war. The fact that the post–World War II cohort data do not support this theory (in fact, the sign on the GNP per capita variable is negative) suggests, at the very least, that Inglehart should consider restating the postmaterialism argument such that early socialization experiences matter only for pre–World War II cohorts. In fact, it appears that Abramson and Inglehart's criticism of our cohort sample concedes that economic conditions at early socialization do not matter for the post–World War II cohorts.

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In order to address Abramson and Inglehart's criticism of the "truncated" variation, we present in Table 1 the regression results based on data that include all cohorts that experienced their formative socialization during this century. We were able only to identify comparable macroeconomic data for Italy, the Netherlands, the United Kingdom, Denmark, and France. The GNP per capita data are expressed in constant national currencies.[1] As a result, in addition to the GNP per capita variable, we include an interaction term for all countries except Italy (country dummy × GNP per capita). We also include dummy variables for all but Italy because the mean value for the national currencies varies significantly from one country to another.

The results reported in the first column are for the same model that we estimated in our earlier paper (col. 2 of Table 2) except we now include pre–World War II cohorts.[2] With minor exceptions, the results are the same as those reported in our earlier paper. As was the case in our earlier work, education is the best predictor of how individuals rank items on the postmaterialist index. In addition, the young, urban, and more affluent people are more likely to have a high postmaterialist score. Once again, economic conditions, at the time the survey was conducted, are correlated with postmaterialist values. It is interesting to point out here that the correlations are very consistent with the findings of Clarke and Dutt (1991): unemployment is positively correlated with postmaterialist values (a finding inconsistent with the Inglehart theory but nicely explained by Clarke and Dutt), and inflation is strongly correlated in a negative direction with postmaterialism. Most important from the perspective of the early socialization hypothesis is the fact that in four of the five countries the correlation between economic conditions at the time of maturation and how respondents rank the postmaterialist items is statistically insignificant. The one exception is France, where there is a positive correlation, but it is small in size.

Table 2 reinforces this conclusion with separate equations run for each country. In each of the five countries, the sample has been extended back in time to include cohorts reaching maturation during the pre–World War II era. In no case is there a positive relationship between GNP per capita at the period of socialization and how respondents ranked the

[1]Economic data for the period of maturation are from Mitchell (1980). Economic data at the time of the survey are from the Economist (1982).

[2]We do not include the inflation variable in the results reported in Table 1 because it has large numbers of missing values for the pre–World War II period. When the analysis is restricted to those cohorts for which inflation during maturation is available, the variable has no significant impact and the coefficients for the other variable are essentially the same.

Table 1. Postmaterialism, Results of Individual-Level Multivariate Model

Variable		
Demographics:		
Age	−.01**	(−.11)
Education	.09**	(.28)
Urbanization	.05**	(.05)
Income	.01*	(.02)
Economics at maturation, GNP/capita:[a]	−.36	(−.13)
Denmark	1.78	(.13)
France	1.19**	(.04)
Netherlands	1.34	(.06)
United Kingdom	−1.87	(−.04)
Economics at survey:		
GNP/capita[b]	.01**	(.05)
Inflation	−.02**	(−.13)
Unemployment	.01**	(.04)
Country dummies:		
Denmark	−.09*	(−.04)
France	−.14**	(−.07)
Netherlands	.05	(.02)
United Kingdom	.18**	(.08)
Constant	1.33**	
Adjusted R^2	.17	

Note: Beta weights are in parentheses.

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

[a]Expressed in thousands of constant national currencies.

[b]Expressed in thousands of constant U.S. dollars.

postmaterialist items. In fact, in Denmark and the Netherlands, the relationship is negative (i.e., exactly the opposite of what Inglehart predicts). Once again, economic conditions at the time of the survey and educational levels of the respondents are highly correlated with postmaterialism.

Hence, Abramson and Inglehart are simply incorrect in asserting our results are a function of the truncated data set that we employ (note that although they are quite critical of our data shortcomings they make no effort to collect the appropriate data and conduct a similar analysis). The results we obtain when we include all cohorts in the analysis are exactly the same as those arrived at in our earlier article.

Table 2. Postmaterialism, Individual-Level Results of the Multivariate Model within Systems

Variable	Denmark		France		Italy		Netherlands		United Kingdom	
Demographics:										
Age	−.01**	(−.21)	−.01**	(−.10)	−.004**	(−.09)	−.01**	(−.18)	−.004*	(−.10)
Education	.12**	(.36)	.10**	(.31)	.06**	(.25)	.12**	(.34)	.05**	(.12)
Urbanization	.10**	(.10)	.05**	(.05)	.05**	(.07)	.01	(.01)	.01	(.01)
Income	−.01	(−.02)	.02	(.03)	−.01	(−.01)	.05**	(.06)	.02	(.03)
Economics at maturation:										
GNP/capita[a]	−3.59**	(−.12)	5.83	(.03)	2.31	(.09)	−7.66**	(−.11)	1.90	(.03)
Economics at survey:										
GNP/capita[b]	.002	(.01)	.04**	(.17)	−.01**	(−.06)	−.04**	(−.08)	.03**	(.07)
Inflation	−.01	(−.03)	−.07**	(−.14)	−.01**	(−.08)	−.09**	(−.17)	−.02**	(−.12)
Unemployment	.04	(.10)	.06**	(.11)	−.07**	(−.12)	−.02**	(−.08)	.03**	(.10)
Constant	1.36**		.76**		2.11**		2.87**		1.03**	
R^2	.19		.18		.15		.18		.08	
Number of cases	3,812		4,228		5,611		3,658		3,665	

Misinterpreting Education

Abramson and Inglehart argue that we reject the assumption that educational level is related to parental background. We do not entirely reject this assumption. We argue that education also reflects other things, such as the receptivity to certain items in the postmaterialism index, and it is this aspect of education that *primarily* explains why individuals select the postmaterialism items rather than the materialist item. We argue that education and economic security must be separated in any analysis that tests the Inglehart theory. Our earlier article makes an attempt at disentangling the two effects by using multivariate analyses that incorporate both education and aggregate levels of economic security. This may not be the ideal approach to differentiating the two effects, but one cannot reject it outright without alternative, and presumably better, *multivariate* analyses that challenge the findings. Abramson and Inglehart cite evidence of a strong correlation between education and parental background, but this does not at all resolve the issue—education is correlated with a plethora of other factors that may or may not be relevant to the postmaterialist theory. Demonstrating that education and parental background are correlated is not the same thing as demonstrating that postmaterialist values measured at the time of the survey are related to parental affluence at the time of early political socialization. In short, we reject the notion that education is simply a proxy for the prosperity of one's family when one is growing up—most people would recognize that it represents many other things.

Period Effects and Intergenerational Change

We do not, as Abramson and Inglehart suggest, assume that period and cohort effects are incompatible. We read the Inglehart theory of postmaterialism as arguing that because of the importance of economic conditions during the period of early socialization, cohort effects (i.e., early economic impressions) will have a much more pronounced impact on how respondents rank postmaterialist items than is the case with short-term period effects. The problem for Inglehart's argument is that the evidence suggests that short-term impacts are of overwhelming importance for postmaterialism scores, but there is no evidence that economic conditions at the time of maturation have any impact. In fact, once you control for education and inflation at the time of the survey, the cohort differences become trivial.

Economic Security and Aggregate-Level Values

Contrary to what Abramson and Inglehart indicate, we do not argue that "people in relatively prosperous regions are not relatively

postmaterialist." This completely misses the point of our article. We are not particularly interested in marginal distributions of the dependent variable. We are concerned with evaluating Inglehart's explanation for why individuals rank postmaterialist items higher than materialist items on his postmaterialist index. In fact, our results would suggest that people in prosperous regions would probably have higher levels of postmaterialism but *not* for the reasons articulated in Inglehart's theory. Our multivariate results suggest that economic conditions at the time of the survey (i.e., the prosperity of the region) are correlated with how respondents rank the postmaterialist items. Inglehart argues that economic conditions, *at the time of early socialization,* should affect the postmaterialist measure, which in our multivariate analysis simply is not the case. The empirical results are exactly the reverse of what Inglehart argues: economic conditions today, rather than those when respondents were 12 years old, shape how people rank these items.

We cite Trump (1991) simply because he actually tests the postmaterialist hypothesis with respondents who fall into the early age category specified by the Inglehart early socialization argument. This is one of the few efforts to test the Inglehart hypothesis with the relevant age cohort. The fact that the findings do not support Inglehart is further evidence that this early socialization hypothesis is wrong. Granted the study's research design has limitations. The more relevant question is whether anyone else has actually administered postmaterialism questions to respondents in this age cohort and had results that confirm the Inglehart socialization hypothesis. Dalton (1977) does not do this nor, from the details provided by Abramson and Inglehart, does the study by Diez-Nicholas (1994). The .88 correlation between per capita income and the proportion of postmaterialists in the region that Abramson and Inglehart cite from the Diez-Nicholas study is entirely beside the point. We find a strong positive correlation between per capita income and postmaterialism *at the time of the survey*. A test of the early socialization hypothesis requires correlating per capita income *at the time of maturation* and how respondents rank the postmaterialist items today.

Confusing Per Capita GNP with Economic Growth

What does it mean to say that relatively high rates of economic growth should reveal relatively large differences between the values of younger and older cohorts? How does this translate to the individual level? It indicates that a cohort that experiences higher levels of economic growth (at maturation) will be more different than its previous cohort than is the case with a cohort that experienced lower levels of economic growth at maturation. Does it matter whether we examine levels versus

change as the dependent variable? Table 3 reports the results when the dependent variable is defined as changing levels of postmaterialism from one cohort to the other. Economic conditions are defined as the rate of change in per capita GNP from one cohort's maturation period to the next cohort's maturation period. Similarly, education, urbanization, and income are coded as the change from one cohort to the next. Thus, the level of analysis reported in Table 3 is the cohort, and the variables are defined as change from one cohort to the next (hence, we lose the youngest cohort). The results in Table 3 are for the extended data series (i.e., including all cohorts for this century). Again, the results in this analysis suggest that changing economic conditions at the time of maturation have no impact on changing levels of postmaterialism. In fact, the only variable significant at the .01 level in this equation is education.

The criticism of our analysis of the Soviet results is not convincing. Once again, we are criticized for not collecting enough macroeconomic data on the Soviet Union. Let us assure the authors that the collection of even minimally reliable macroeconomic data for the Soviet Union is extremely difficult. Frankly, if the authors believe that by extending the series back to earlier periods they could challenge our findings, then we believe it is incumbent upon them to undertake the task. As we

Table 3. Postmaterialism, Cohort-Level Results of Multivariate Change Model Variable

Variable		
Demographics:		
Education	.07**	(.42)
Urbanization	.06	(.08)
Income	.12*	(.34)
Economics at maturation:		
GNP growth rate	.00	(.10)
Economics at survey:		
GNP growth rate	.00*	(.26)
Inflation	−.00	(−.05)
Unemployment	−.01	(−.08)
Constant	.09	
Adjusted R^2	.15	
Number of cases	65	

Note: Beta weights are in parentheses.

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

demonstrated above, extending the series back in time did not invalidate our argument in the Western European context, and we doubt it would change the conclusions in the Soviet context. Also, the theory as we understand it should apply to those reaching early maturation both before and after 1960.

Abramson and Inglehart suggest that in our Soviet analysis we confuse the notion of per capita GNP and economic growth. We are not confused about the two different concepts. Nevertheless, regardless of whether we are talking about economic levels or economic growth, the data contradict the Inglehart argument. At the macrolevel, they argue that "countries with high rates of economic growth tend to display strong relationships between values and age, and those with very low levels of growth display weak relationships." This results, at the individual level, from the fact that cohorts that experience higher than normal rates of economic growth embrace postmaterialism, and those that experience lower than normal rates of economic growth reject it. Hence, when we survey these cohorts, regardless of the economic situation at the time of the survey, these early socialization differences should be manifest. Now regardless of whether we are talking about differences (between younger and older cohorts) or levels of postmaterialism, the relationship presented in Figure 3 of our original article (1993, 769) indicates a strong relationship in exactly the opposite direction from the one predicted from the above Inglehart argument. We conclude this because the youngest cohorts in our survey experienced declining economic performance compared with the cohorts that preceded them, and therefore, according to Inglehart, we should see at the very least no change in the levels of postmaterialism from the older to the younger cohort.[3] In fact, we see a very sharp jump in levels of postmaterialism (i.e., the difference between the younger and older cohorts increases in the *positive* direction). Hence, the correlation in change levels between economic growth and postmaterialism is strongly negative, which directly contradicts the Inglehart argument.

In contrast to our efforts to test the socialization hypothesis using multivariate relationships at the individual level, Abramson and Inglehart present three bivariate plots that either do not directly test the hypothesis or ignore our admonishments about the absence of multivariate controls. But before turning to these two issues, it is important to note another sleight of hand in their measurement.

The refutation presented in Figures 1 through 3 is based on the 12-

[3]This is a generous interpretation of the Inglehart theory. In fact, we should probably see a decline in postmaterialism because the real economic situation for these cohorts has declined in this period.

item measure of postmaterialism. Our article specifically addresses the shortcomings of the four-item measure of postmaterialism, and much of our argument is built on the specific items in that four-item construct (e.g., their similarity to measures of democratic values and their sensitivity to current economic fluctuations). We devote considerable discussion in our article explaining why education, as a measure of cognitive capabilities and exposure to official norms, should be correlated with certain items in the four-item construct. We do not make any claims about the 12-item measure employed by Abramson and Inglehart in Figures 1 through 3. And while we would be the first to applaud the adoption of a 12-item measure of postmaterialism, using this item to refute our earlier argument about the four-item measure is simply inappropriate. Is Inglehart accepting our critical assessment of the four-item measure by now shifting to the 12-item measure?

Figure 1 in Abramson and Inglehart's article demonstrates a strong correlation between GNP per capita and mean national postmaterialism scores. This is perfectly consistent with our findings that economic conditions at the time of the survey are correlated with how individuals rank the postmaterialist items. And while it is not inconsistent with the socialization hypothesis, it offers no support for this argument (which raises the question: Why is it presented here?).

Figures 2 and 3 indicate that younger cohorts are more postmaterialist than older cohorts. Demonstrating that there are intergenerational differences in postmaterialist scores is not the same thing as explaining why they occur. In the case of the Soviet cohorts, we present the relationship between the economic circumstances associated with the early socialization and their postmaterialist scores. We find that, in fact, the relationship is in the opposite direction of that predicted by Inglehart's argument. In addition, we present multivariate analysis that confirms this finding. Abramson and Inglehart should not expect to counter our efforts at explanation (that include the gathering of extensive system-level data and the specification of multivariate models) with a simple bivariate plot that is perfectly compatible with a large number of explanations.

As we pointed out earlier, Inglehart has proposed an extremely important argument about how individual values are shaped by economic conditions very early in the life-cycle. This is only one element of a very persuasive theory of values and political behavior. Nevertheless, it is an important element of the theory because it implies that individual preferences throughout the life-cycle are significantly constrained by contextual factors early in life. We find this aspect of the Inglehart theory to be implausible and propose alternative explanations for the manner in which individuals rank the four items in Inglehart's postmaterialism

index. For the reasons developed above, we believe that the basic findings from our early argument are sound and are not undermined by the criticisms leveled by Abramson and Inglehart.

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