AT THE NEXUS OF SOCIAL CAPITAL AND POSTMATERIALIST VALUES:

THE CASE FOR THEORETICAL CONVERGENCE

by

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(Under the Direction of Markus M. L. Crepaz)

ABSTRACT

The concepts of social capital and postmaterialist values both have long and respectable genealogies in the social sciences. They are often seen to covary in particular ways, but these relationships are generally considered spurious, attributable to various intervening or antecedent variables. This paper seeks to specify an independent and direct causal relationship between generalized trust ("bridging" social capital) and postmaterialism on the one hand, and particularized trust ("bonding" social capital) and materialism on the other. In order to test these claims and properly control for rival hypotheses, a hierarchical generalized linear model is employed using data from the fourth wave of the World Values Survey (released May 2004). The data provide strong support for the first posited relationship; the second does not fare as well. In light of these results, opportunities for future research are enumerated and discussed.

INDEX WORDS: Postmaterialism, Social Capital, Trust, Hierarchical Generalized Linear Modeling, Comparative Politics, Political Culture, World Values Survey

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CHAPTER 1

INTRODUCTION AND THEORY

The concepts of social capital and postmaterialist values both have long and respectable genealogies in the social sciences. The term "social capital" was first employed in 1916, but the idea it represents finds its roots in the economic theory of Smith, Ricardo, and others. Similarly, the term "postmaterialist values" was coined in 1971 by Ronald Inglehart, but can trace its lineage to the motivational psychology of Abraham Maslow and his predecessors. What makes these two ideas particularly powerful is the breadth of their perceived explanatory power and their ability to spark debate concerning causal mechanisms. What renders them interesting is that together they embody the potential for theoretical linkage. That this has not yet been explicitly attempted provides the impetus for the current inquiry.

In order to understand the potential for theoretical integration inherent in the two concepts, it will first be necessary to examine each in a bit more detail. The somewhat counterintuitive nature of the conceptual link will be highlighted through this examination. Next, the precise mechanism of the linkage will be revealed, drawing upon the theoretical foundations of each of the concepts. Finally, some possible objections to this line of reasoning will be enumerated and discussed.

Social Capital and Postmaterialism: A Brief Primer

Succinctly put, social capital refers to the social networks, norms of reciprocity, and trust that make it possible for individuals to (among other things) overcome the barriers to collective action through the reduction of transaction, monitoring, and enforcement costs.[1] At the societal level, this translates into real advantages. Crime rates are lower, the justice system is not as clogged with civil suits, citizens are more actively engaged with their governments thus increasing government accountability, economic performance is enhanced, less people cheat on their taxes—even the performance of governmental institutions has been found to be dependent on the concept (Putnam 1993). All of this has been found in more recent research, but even the first usage of the term was related to the quest for such benefits. So intuitive is the causal link between community gathering and community action that L. Judson Hanifan, the State Supervisor of Rural Schools in turn of the century West Virginia, coined the term "social capital" when attempting to identify the root cause of social improvements in a small rural community (Hanifan 1916). He used the term in an instrumental sense with the expressed goal of explaining the achievement of real progress in the provision of such public goods as school libraries and public roads.[2] Social capital, then, essentially allows individuals to come together to accomplish collective goals that are otherwise impossible to achieve without the presence of an external coercive enforcement power. Moreover, it is the explanation of the creation and sustenance of these collective phenomena that is the *raison d'être* of the concept itself.

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[1] This tripartite definition of the term is taken from Robert Putnam's *Making Democracy Work* (1993: 88-91, 163-7, 171). It should be noted that this is but a single definition and a single aspect of the term "social capital." The literature on the subject is immense; indeed, the definition of the term itself is so contentious that even Putnam was persuaded to drop "trust" from his definition in his latest work, *Democracies in Flux* (2002: 3).

[2] Even though Hanifan's is an instrumental conception, that trust has a place in it is undeniable. While it is true that he neglects to explicitly mention trust in this, the earliest application of "social capital" as such, this is likely due to the fact that a game-theoretic understanding of the problems of collective action would not be fully developed for another half century (through the work of John Nash) and would not be popularized through systematic treatment in the social sciences until the work of Mancur Olson another ten years later.

Postmaterialism, on the other hand, was devised to respond to an entirely different set of questions. In his earlier studies, Ronald Inglehart had focused on the determinants of support for European integration (Inglehart 1967, 1970a, 1970b, 1970c). Thus steeped in the politics of European identity, he became fascinated with the notion of macro-level value change over time. In 1971, he coined the term "postmaterialism" and used it to explain observed differences in the survey responses of different age and social groups in the 1970 European Values Surveys (Inglehart 1971). His theory is straightforward. Based on his reading of Abraham Maslow's needs hierarchy, Inglehart proposes that aggregate value change in postindustrial societies occurs as a result of generational replacement. He suggests that individuals form their value priorities at a young age as a result of their socioeconomic context. Furthermore, he posits that this value structure, once in place, is resistant to change. Inglehart's major contribution, though, is in applying Maslow's hierarchy of human needs to explain *how* and *why* these value priorities are formed as they are and to design a survey battery to track such changes and render them intelligible. Specifically, he suggests that those individuals who had experienced scarcity with respect to basic human needs such as food, water, shelter, and security would come to value those things more highly than those individuals who had never experienced scarcity in those areas. Maslow suggests that this would be the case because one cannot move on to the other, higher-order needs until one's basic needs are met. Following Maslow's logic, Inglehart suggests that the younger cohorts who have come of age during the prosperous postwar years know little of scarcity and so have been socialized such that they are free to pursue higher-order needs; thus, when forced to choose through a survey battery, these individuals will value less materialistic societal goals such as "protecting freedom of speech" or "giving people more say in

important government decisions" over others such as "maintaining order in the nation" or "fighting rising prices" (Inglehart 1997).

From this theory flows numerous predictions and observed correlations, and it, too, has been a catalyst for much research (Inglehart alone has produced literally scores of publications on the subject).[3] Still, the phenomenon for which it was originally created has remained constant. Regardless of what has followed, postmaterialism was originally designed to explain macro-level value shifts in the postindustrial societies.

Bearing this in mind, then, how could a concept created to explain a society's ability to overcome barriers to collective action and a concept designed to explain macro-level value shifts in the postindustrial societies be causally related? That they should be correlated on some level should be obvious, for they are both related through their common correlations to many other variables (a given state's level of economic development, for example—see Inglehart 1999), but how might a non-spurious causal relationship be specified? What is the conceptual link?

The Case for Theoretical Convergence

Because the two concepts are so dissimilar on the surface, any suggestion of an independent causal connection between them admittedly seems unlikely at first. In fact, though, the potential for the unification of these two streams of literature does exist. It stems in part from more recent research on the topic of social capital, but in another sense it was always there, buried in the theoretical foundation of postmaterialism.

Eric M. Uslaner has recently begun a new strain of research in the social capital literature, one specifically targeting trust (Uslaner 1999, 2001a, 2001b, 2002). In particular, he

argues that the type of trust required for overcoming the barriers to collective action on a societal level is a "moral" one, one that he suggests is a value-based conception that is absorbed during one's formative years and is, in fact, resistant to change. Since this type of trust is a moral value, it is not contingent; rather, it is freely given. Moral trust is set in opposition to a "strategic" conception of trust, which is the familiar rationally self-interested type found in game-theoretic models. Uslaner's primary explanation for the necessity of this distinction is that strategic trust can only explain cooperation in repeat games among relatively small groups, for one must have personal knowledge of others in order to trust them; it cannot explain why two individuals who do not already know one-another would choose to cooperate in the first instance (or in a one-shot game), particularly in the context of a larger society. Moral trust fills this gap and in so doing demonstrates its necessity to overcoming barriers to collective action on a large scale.

Next, he identifies each of these ideal types of trust with its expressive counterpart: moral trust is thus linked to "generalized" trust (virtually synonymous with Putnam's conception of "bridging" social capital) while strategic trust is linked to "particularized" trust (analogous to Putnam's "bonding"). Generalized trust is, as the term suggests, a fundamental trust in others in general. A generalized truster would not hesitate to ask a stranger in a café to watch over her valuables while she goes to get a cup of coffee, for example. A particularized truster could act in the same manner *if the stranger was perceived to belong to her in-group* (that is, if the stranger shared some key characteristics with the particularized truster), but would balk at the prospect of trusting the stranger if she was perceived to be too different from herself or to belong to an out-group. The key difference between the two types of social trust is thus that particularized trust is contingent because it is based on strategic trust, while generalized trust is more or less freely

[3] In fact, a quick search on JSTOR.org for "postmaterial" OR "postmaterialism" in full-text of articles in political science brings up a list of 155 results—and JSTOR only stocks editions through 1999 for most political science

given. This dichotomy suggests two related consequences. First, moral trust is a value and is a part of one's overarching value structure, the same structure that is related through Inglehart's materialist-postmaterialist indices to one's status with respect to the pursuit of needs satisfaction. Second, the stage is set to argue for a causal relationship between particularized trust and materialist values on the one hand, and generalized trust and postmaterialist values on the other.

The basis for such an argument is that lower-level needs are competitive and exclusionary (and are thus supplied by private goods), while higher-order needs lack the same kind of zero-sum character. Higher-order need fulfillment depends on collective goods, for higher-order needs (such as the need to be loved and the need for recognition and esteem from others—see Maslow 1968) are built on the social aspect of our existence (it is difficult to achieve self-actualization alone, even though the achievement itself is a solitary act). They are thus subject to synergistic effects, provided that everyone does her part to provide the environment that is conducive to their satisfaction. Because these higher-order needs are dependent upon the provision of certain social (collective) goods, they depend also upon the type of trust required to overcome the barriers to collective action: moral trust.

But one needn't be persuaded by the logical force of this author's reasoning alone. Consider the following quotation from Maslow himself:

> The pursuit and the gratification of the higher needs have desirable civic and social consequences. To some extent, the higher the need the less selfish it must be. Hunger is highly egocentric; the only way to satisfy it is to satisfy oneself. But the search for love and respect necessarily involves other people. Moreover, it involves satisfaction for those other people. People who have just enough basic satisfaction to look for love and respect (rather than just food and safety) tend to develop such qualities as loyalty, friendliness, and civic consciousness, and to become better parents, husbands, teachers, public servants, and so on (Maslow 1987: 58).

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journals (so this excludes the five most recent years).

And lest one doubt the connection between politics and individual need satisfaction, consider the following:

> Higher needs require better outside conditions to make them possible. Better environmental conditions (familial, economic, political, educational, etc.) are all more necessary to allow people to love each other than merely to keep them from killing each other. *Very* good conditions are needed to make self-actualizing possible (Maslow 1987: 58, emphasis in original).

Viewed holistically, all of the above constitutes a powerful argument for theoretical convergence. Still, the argument thus far only explicitly addresses one of the posited causal relationships: that between moral (generalized) trust and postmaterialism. Because moral (generalized) trust and strategic (particularized) trust are not simply two opposing ends on a continuum, the other relationship must be independently reasoned through and specified.

To illuminate the relationship between strategic (particularized) trust and Inglehart's materialism, one must consider the same argument from a slightly different perspective. Moral trust is a moral value and is therefore tied to one's overall value structure. If one does not have moral trust, one is solely dependent upon strategic trust. Moral trust is premised upon faith; strategic trust is premised upon uncertainty. Faith leads one to be more positive in one's outlook in general, and hence to trust others; uncertainty leads to fear (that is, one's individual fear of being negatively impacted by the actions of others). This fear leads to defensiveness—a sort of "protectionism," if you will—and leads one to protect one's in-group from outsiders, particularly in light of the aforementioned zero-sum nature of lower-level needs satisfaction. This is the consequence of strategic trust, for one will generally trust those who are like oneself.[4] On the other hand, if one has moralistic trust, then one is more likely to support the pursuit of collective goals (such as environmental protection, with which postmaterialism is highly correlated—see

Inglehart 1997) *because moral trust leads one to have faith that others will not renege from their commitments in a collective endeavor*. In terms of the Free Rider Problem, moral trust leads one to be the "sucker." Strategic trusters, in contrast, will naturally shy away from participation in a collective endeavor because they fear that others with whom they are unfamiliar will renege. This means that trusters of this type will tend to value lower-level needs (for these are more compatible with their conception of trust).

Possible Objections

One may object to this entire line of reasoning by asserting that *self*-actualization is a process that is driven by the "need" of a single individual, and that as such it must of necessity be a selfish act. This is to some extent true, but it is a statement that can still peacefully coexist with the selflessness previously described as the concomitant of self-actualization. Indeed, not only does it coexist peacefully, but it provides for the aforementioned synergistic effects across individuals. Maslow comments on this, as well:

> The pursuit and gratification of the higher needs leads to greater, stronger, and truer individualism. This may seem to contradict the previous statement that living at higher need levels means more love identification, that is, more socialization. However it may sound logically, it is nevertheless an empirical reality. People living at the level of self-actualization are, in fact, found simultaneously to love mankind most and to be the most developed idiosyncratically. This completely supports Fromm's contention that self-love (or better, self-respect) is synergic with rather than antagonistic to love for others. His discussion of individuality, spontaneity, and robotization is also relevant (Fromm, 1941) (Maslow 1987: 58-9).

Thus, the reasoning is vindicated.

One might also object on the grounds that many of the higher-order needs may be met within a well-defined and exclusive in-group, and thus may be met without a moral conception

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[4] It should be noted here that moral trusters are not exempt from this kind of trust, but they are not wholly dependent upon it either; rather, moral trust has an additive effect and opens one up to new opportunities for cooperation. But the two are definitely not mutually exclusive (Uslaner 2002).

of trust. The key to understanding why this cannot be is that those who only exhibit particularized trust are constrained by their fear of others' betrayal of their trust (even if that fear is primarily directed towards other groups or other individuals who are unlike oneself). This focus on fear means that although these individuals might be able to achieve some semblance of higher-order needs satisfaction (e.g., the belonging need, the love need, the esteem need) within their groups, this will only be superficial in nature for it will be premised on uncertainty and its concomitant fear. Because it circumvents this problem, moral trust, premised as it is on faith in others, is a necessary (but not sufficient) precondition for higher-order needs satisfaction.

CHAPTER 2

AN EMPIRICAL TEST

Having thus ascertained the proposed causal mechanisms and conceptual relationships, one might rightly ask how such a theory could be tested. The answer is, bluntly, that it cannot be tested in all its fine detail with the available data—but its more gross predictions can be analyzed and its plausibility assessed against critical substantive evidence. Outlining the strategy for such a test is the goal of this chapter.

Data

The data for this study will be derived from two sources. The first of these is the 1999-2001 wave of the World Values Survey, from which the vast majority of the data will be mined. Originally administered in 1980, the WVS is an outgrowth of its predecessor, the European Values Survey (EVS), and is the result of the collaborative efforts of numerous universities and survey organizations from around the world. The original questionnaire is written in English and is then translated by teams of native speakers in each of the participating countries—every possible precaution is taken to ensure the preservation of comparability.[5] Representing 81 societies in some 60 nations, the fourth World Values Survey dataset is the single most

[5] In fact, the entire questionnaire is translated into the language in which it will be administered and then re-translated into English by a separate group in order to check the accuracy of the original translation. Furthermore, some variables are customized for the nation in question; one example of this would be variable F025, which describes the respondent's religious denomination. The menu for choice was changed by each nation's survey group in order to more closely parallel that country's demographics.

comprehensive of its kind, and it will serve as the source for all of the attitudinal and demographic data employed in the analyses.

The second dataset to be used is the World Development Indicators database. The WDI data are collected and published by the World Bank and are updated yearly. The dataset contains time-series data on more than five hundred variables for more than two hundred countries, and it will serve as the source for the macroeconomic variables used herein. Data from both of these sources will be combined and utilized to test the hypotheses outlined in the previous chapter at the individual level across the entire WVS dataset.

Focusing on the individual in this way is useful for three reasons. First, since processes at this level are the focus of the theory, their direct examination is imperative. Second, the wide variety of societies represented in the WVS affords a rather unique opportunity for probing the commonalities among human beings across distinct cultural and political divides. By disregarding these boundaries and comparing individuals only to other individuals, one can be reasonably certain that whatever statistical results may be achieved will be generalizable. Third, the ecological fallacy can be handily avoided. An analysis at the national level would not suffice on its own as a test of the hypotheses proffered herein because the ecological fallacy would render any of its findings questionable—one could not logically suggest that the same relationships observed at the national level function similarly at that of the individual.

Using aggregate-level data to model individual-level outcomes in this way presents formidable methodological challenges. The next section discusses these challenges and the ways in which they will be overcome.

Explaining HGLM[6]

The data employed in this analysis have a nested structure, with individuals nested within countries. This means that there are effectively two levels to the data. If one could visualize a dataset with this type of structure, one would see the level two (country-level) variables as identically repeated observations over many different level one (individual-level) cases. In the case of the current analysis, one would see thousands of individuals with the same measures on the macroeconomic variables, for these vary only by country, not by individual.

Such a data structure poses problems for conventional analytic methods. Primary among these is the violation of the assumption of observational independence. If the values of the level two variables are identical within groups, these are no longer independent observations at the individual level. Moreover, the values on the level one variables may not be wholly independent, especially when certain factors (here primarily geographic and cultural) govern the distribution of the level one units (the individuals) among the level two groups (the countries). The result is that the level one units are not randomly assigned to the level two groups—and this means that the level one observations are no longer entirely independent. If ordinary methods are employed to analyze such data, the violation of this assumption will result in standard errors that are incorrect. Even employing robust standard errors does not suffice, in most cases, to satisfactorily address this problem.

A second problem is encountered when one's theoretical interest is in specifying cross-level interactions (interaction effects between variables at different levels of analysis). In the current analysis, for example, one of the interests is the effect of macroeconomic variables on one's probability of being postmaterialist. Since this would involve estimating the effects of level-two variables on a level-one variable, it would confound the unit of analysis. Moreover,

[6] The following is adapted and summarized from Osborne, 2000 and Raudenbush and Bryk, 2002.

conventional attempts to address this problem through data manipulation fail; aggregating the individual-level data prior to estimating the effects invokes the ecological fallacy, and assigning level two characteristics to level one cases results in the same violations of the independence assumption already outlined above.

The solution to both of these problems may be found in Hierarchical Generalized Linear Modeling (HGLM). Essentially, HGLM performs a complex procedure that is analogous to running a separate analysis within each level two group in the dataset, then taking the means of each of the resulting estimates (intercepts and slopes in a regression, log-odds coefficients in a logit analysis) across the groups. Variance and significance statistics are also reported for each of these means, allowing the researcher to determine to what extent the estimates vary across the groups and whether or not (or how much) the level two variables account for that variation through any specified cross-level interactions.

Figures 1 and 2 (below) represent the HGLM model fitted in the primary analysis performed herein:

$$\ln\left(\frac{\Pr(y=1\mid\beta)}{1-[\Pr(y=1\mid\beta)]}\right)=\beta_0+\beta_1(Age)+\beta_2(Education)+\beta_3(PartTrust)+\beta_4(GenTrust)$$

Figure 1: Level One HGLM Equation (Individual-Level Data)

$$\beta_0=\gamma_{00}+\gamma_{01}(Unemployment)+\gamma_{02}(Inflation)+u_0$$
$$\beta_1=\gamma_{10}+u_1$$
$$\beta_2=\gamma_{20}+u_2$$
$$\beta_3=\gamma_{30}+\gamma_{31}(\%pop)+u_3$$
$$\beta_4=\gamma_{40}+u_4$$

Figure 2: Level Two HGLM Equations (Country-Level Data)

The variables and their hypothesized effects will be explained later; for now, regard the structure of the equations themselves.

There are two main points to note about the model. First, each of the level one estimates is itself the outcome variable in an equation specified at level two. This allows the researcher to model the aforementioned cross-level interactions by specifying level two predictors in each of these functions. In the above example, the constant of the level one equation (β_0) is predicted by the macroeconomic variables "unemployment" and "inflation." What this means conceptually is that the variance in the mean probability of being a postmaterialist at the individual level is hypothesized to differ, on average, depending on differing levels of the macroeconomic variables.

There is also a predictor for the level one coefficient on "parttrust," and the interpretation is similar to that specified for the constant. Here, the hypothesis to be tested is the notion that the relationship between an individual's level of particularized trust and her probability of being a postmaterialist will vary depending upon the percentage of the population in that person's society that shares her religious denomination.

The second item of interest is the intercept of each level two equation (γ_{x0}, where x corresponds with the subscript of the level one coefficient modeled). These reflect the fact that in an HGLM model, the within-group level one estimates are not directly represented in the output. Recall from earlier that HGLM calculates the mean value of the level one estimates, averaged from the results of all of the within-group analyses. The intercept of the level two equation represents this quantity. This makes good conceptual sense, once one considers that the intercept at level two is, on average, the value taken by the level one coefficient when all of the level two predictors equal zero.

Having thus introduced the mechanics of the model, we now turn to an examination of its substance. The operationalization of the concepts will be discussed next, followed by a return to the model, this time with an eye toward the enumeration of the hypothesized effects.

Defining Social Capital

For the purposes of this study, social capital will be defined in terms of interpersonal trust. I choose to drop the "norms of reciprocity" and "social networks" from the commonly used definition of Robert Putnam for three reasons. First, there are innumerable definitions of the term, but what most of them hold in common is the notion that such trust forms the core of the concept. The reason for this is straightforward, for it is what enables a society to reduce transaction costs, hence facilitating the achievement of optimal collective outcomes in common collective action problems (e.g., the prisoners' dilemma, the free rider problem, and the tragedy of the commons, all of which can involve the provision and maintenance of public goods) (Olson 1965). Interpersonal trust can reduce the costs associated with everyday economic transactions, as well, for it reduces the costs of enforcement mechanisms and reduces agency loss (Coleman 1988). Thus, my conception will be more widely applicable and considerably less contentious for employing this definition, as arguments have already been firmly established for its validity. Second, the available data simply do not support an operationalization of every aspect of this complex concept. Measuring norms of reciprocity is troublesome, at best, as is any attempt to measure the extent of one's social networks. Any attempt to operationalize these concepts would prove contentious. Even if one could find a way to do so, it is extraordinarily doubtful that any existing dataset would allow the simultaneous measurement of these concepts and of postmaterialist values on an individual level across multiple countries and cultural settings.

Finally, with regard to the distinction I seek to make within the concept (between generalized and particularized forms of interpersonal trust), this definition is by far the most appropriate.

In order to make this distinction effectively, however, one must be able to accurately measure each of the two forms of trust. This will be accomplished through the construction of unique measures using the World Values Survey data.

Particularized Trust ("Bonding" Social Capital)

A measure of religiosity will be employed as a proxy for one's particularized trust (bonding social capital). Religiosity has been shown to be inimical to generalized trust in several studies in the literature, thus lending a level of face validity to the measure (Uslaner 2001a: 107, Putnam 2003). In particular, Uslaner found that church attendance was quite important in his measure, so much so that he interacted it with his measure of fundamentalism. The measure employed herein will mirror this logic, but one other component must be added to these two. Because he was only looking at a single country and that country was one in which he knew that the religious fundamentalists constituted a minority, Uslaner was secure in leaving out a measure of that group's percentage of the total population. As the present analysis concerns some 51 societies, it will be necessary to incorporate a measure of this kind. The reason such a measure is so important is straightforward—a given group could be quite insular and exclusive, but if it were to constitute a large majority of the population, the effect would likely be that the particularized trust held by a member of that group towards other members of that same group would function, in theoretical terms, as if it were generalized trust. That is, there would be little qualitative difference between the effects of trust in members of the group and trust in society in general, since most people in society would be members of the group in question. Even though

the *types* of trust remain qualitatively distinct, their *effects* on other variables should become quite similar as the bonding group's percentage of the total population approaches one hundred.

In order to compensate for this effect, a measure of the relative size of one's religious denomination must be constructed, and it must be interval data (a mere rank-ordering will not suffice), descriptive at the individual level. The proposed measure is the percentage of one's denomination of the total population in one's society. First, a weighted frequency table is created for each survey sample in the WVS dataset that provides a count of the number of members of each religious denomination coded for on the survey for that particular country-year. These numbers are then divided by the total number of individuals in the sample for that country-year. This process yields a measure of the percentage of individuals in that society at the time the survey was administered that share the religious denomination of the respondent. These percentages are then mapped to the appropriate individual cases via an automated entry process using three criteria for matching: the country, the year of the survey wave, and the chosen denomination of the respondent as shown in WVS variable F025.[7] The results of this automated matching process have been verified by selecting one hundred cases and manually verifying the data entered. The end result is a measure that is interval level and referenced to each individual case (respondent) in the dataset. This measure is to be used in conjunction with two other distinct quantities to fully gauge the extent of the respondent's particularized trust (bonding social capital).

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[7] Even when using an automated process, this is no small task. Variable F025 (the religious denomination of the respondent) itself codes for 86 different religions worldwide, and there are over 118,000 cases in the dataset. Add to this the fact that a separate list of values for the variable had to be constructed for each of the 81 societies represented in the dataset because the questionnaires were country-specific, and one may begin to get an idea of the scope of such an undertaking (in fact, it took more than 3700 lines of SPSS syntax). It should also be noted here that the coding structure was chosen by the survey team in each country and that efforts were made to avoid an overly specific measure—that is, the questionnaires were created to reflect genuine cleavages in their respective societies (the distinction between Methodists and Baptists is generally not as contentious as those between Catholics and

There are thus two other parts to the measure: a measure of church attendance and an index of beliefs and values concerning one's religion. The first of these is necessary because mere identification with a group is often not enough to conclusively evince particularized trust. The type of trust at its base (strategic trust) is cultivated through repeated interaction among those within the group. Religious service attendance is thus an essential part of the measure, for such meetings provide the primary fora for interaction.[8] In particular, the survey question that will be used for this part of the measure is variable F028. It reads:

> **F028.-** Apart from weddings, funerals and christenings, about how often do you attend religious services these days?
>
> [01] More than once a week
> [02] Once a week
> [03] Once a month
> [04] Only on special holy days/Christmas/Easter days
> [05] Other specific holidays
> [06] Once a year
> [07] Less often
> [08] Never/Practically never[9]

This question is ideal for several reasons. First, it differentiates between one's personal choice to attend and attendance that might be required due to more general social norms or out of respect for the beliefs of others (as may be the case with "weddings, funerals, and christenings"). Second, the phrase "these days" frames the question such that an answer reflective of current attendance is assured. Third, the variation captured by the menu for choice is considerable and will lend itself quite well to the analysis. Furthermore, the choices can be seen as representative of positions along a single continuum and thus as ordinal level (rank-ordered) data. Although

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Protestants or Christians and Muslims, for example, and efforts have been made to account for this in the present analysis).

[8] While it is true that there may be other forms of voluntary organizations attached to the center of religious worship (e.g., charitable organizations, youth groups, etc.), these are typically Western, especially Protestant, inventions and may be more indicative of an active civil society and hence more dependent upon levels of economic and political development. Again, were this an analysis of a particular country, generalizations with regard to such organizations could more readily be made; but as it is not, it is suggested that to include such groups in the analysis would sacrifice comparability.

[9] The numbers in [brackets] reflect the coded numerical values in the dataset.

regression assumes interval level data, these responses can be used without issue because the interval between each choice is marked by a single gradation in time—the measure proceeds from a week to a month to a few times a year to once per year and so on. This means that the intervals are approximately equivalent from one choice to the next in the list, certainly enough so to allow their inclusion in a regression analysis.[10] The only problem for such a conception stems from responses [04] and [05], for they are not different enough from one-another in terms of the frequency of attendance to justify their separation. These have thus been collapsed to form a single group for the purposes of this analysis.[11] In this way, the validity of the measure is preserved while assuring that a key assumption of regression analysis is not violated.

For the third and final part of the measure, responses to the following questions will be indexed to yield a composite score:[12]

> **F034.-** Independently of whether you go to church or not, would you say you are...(READ OUT)
>
> [01] A religious person
> [02] Not a religious person
> [03] A convinced atheist

> **F063.-** How important is God in your life? Please use this scale to indicate- 10 means very important and 1 means not at all important.
>
> [01] Not at all
> [02] 2
> [03] 3
> [04] 4
> [05] 5
> [06] 6
> [07] 7
> [08] 8
> [09] 9

[10] I realize that this is not necessarily the case mathematically (regardless of how much sense it makes conceptually). Still, it is often the case that ordinal measures are employed as interval, and it is upon such precedents that I choose to rest.

[11] One might suggest that choices [07] and [08] would inspire similar concerns, but this author contends that the qualitative difference between the two choices is enough to justify their individual inclusion in the measure (and this in spite of the subjectivity introduced by the phrase “practically never”).

[12] These questions are admittedly far from ideal (and there are others in the WVS that would be better in terms of the theory), but they were the most widely available of their kind. In the end, it was deemed most appropriate to use these variables in order to avoid losing literally tens of thousands of cases due to listwise exclusion.

[10] Very important

F064.- Do you find that you get comfort and strength from religion?

[00] No
[01] Yes

Each of these has been recoded to reflect a positive polarity with regard to its relationship to the concept of particularized trust (and thus a negative polarity with regard to its posited effect on postmaterialism, the dependent variable) prior to its standardization. In general terms, the recode has reflected the supposition that the more religious the respondent, the more bonding social capital will be evinced. The resulting standardized scores will then be summed and standardized again, thus eliminating any differences in the scales and distributions of the individual measures that might confound the index. The attendance question (F028) has been included in this overall index, as well, and will be standardized in the same manner just described.

Finally, the resulting composite score has been cross-level interacted with the relative size of the respondent's religious denomination in her society in order to compensate for the aforementioned confounding effects.

Generalized Trust ("Bridging" Social Capital)

For this concept, a simple index of one's involvement in specific types of organizations suffices.[13] Voluntary organizational membership serves as a reliable proxy for one's level of generalized trust for two reasons. First, a certain level of trust is a prerequisite for involvement

[13] Although this measure will be open to the criticism that it serves as a proxy for an active Western-style civil society (similar to the logic employed in footnote 8 with regard to the measure of particularized trust), these data are simply the best available in the WVS (and the methodology employed, along with the control variables, will test for such problems). Other datasets could be mined, but this would restrict any analysis to the aggregate level and would thus invoke the ecological fallacy.

in organizations that will necessarily require sustained high levels of interaction with others from outside one's identity group (Uslaner 2002). Second, such organizations serve to reinforce and even expand the sphere of one's generalized trust through the same experiential mechanisms by which bonding social capital is formed (i.e., through repeated interaction—see Putnam 1993).

In order to provide a more comprehensive measure of the concept, several variables derived from two questions in the WVS are used together. Each of the two questions asks about one's involvement in 15 different types of voluntary organizations, although not all of these are of interest in the current inquiry.[14] The questions and the variables of interest follow:

> **A064-A080.-** Please look carefully at the following list of voluntary organizations and activities and say...which, if any, do you belong to?
>
> (A064) Belong: Social welfare services for elderly, handicapped or deprived people
>
> (A066) Belong: Education, arts, music or cultural activities
>
> (A069) Belong: Local community action on issues like poverty, employment, housing, racial equality
>
> (A070) Belong: Third world development or human rights
>
> (A073) Belong: Youth work (e.g. scouts, guides, youth clubs etc.)
>
> (A076) Belong: Peace movement
>
> [00] Not mentioned
> [01] Belong

This first question establishes membership in an organization. However, this is insufficient by itself because many groups (particularly in the postindustrial democracies) have evolved to be groups composed of "checkbook participators," those who are members of an

[14] Particularized trusters may join certain types of organizations, as well—but those used in this measure were specifically chosen because they have been shown in the literature to proxy for generalized trust. In fact, in every case where a clear relationship to generalized trust could not be divined, that organization was dropped from the index. More specifically, labor unions, political parties, religious groups, women's groups, and animal rights groups were all excluded from the measure. Sports groups were dropped because there is some contention in the literature regarding whether the competition trumps the fellowship aspect or the other way around, and environmental groups were dropped because there is a qualitative distinction to be made between groups that are more competitive and exclusionary (even militant—e.g., Greenpeace) and those that are more inclusive, such as the National Wildlife Federation or the National Park Foundation.

organization in that they donate to its cause but do not necessarily work for it directly. Although such participation is undoubtedly an expression of one's values and may even be expressive of the prerequisite moralistic trust mentioned earlier (and as such is important to include), such a measure must be supplemented by one that can differentiate between this and other, somewhat more meaningful forms of participation. The next survey question does just that:

> **A081-A097.-** WVS2000: And for which, if any, are you currently doing unpaid voluntary work?
>
> EVS1999: which, if any, are you currently doing unpaid voluntary work for?.
>
> (A081) Unpaid work: Social welfare services for elderly, handicapped or deprived people
>
> (A083) Unpaid work: Education, arts, music or cultural activities
>
> (A086) Unpaid work: Local community action on issues like poverty, employment, housing, racial equality
>
> (A087) Unpaid work: Third world development or human rights
>
> (A090) Unpaid work: Youth work (scouts, guides, youth clubs, etc.)
>
> (A093) Unpaid work: Peace movement
>
> [00] Not mentioned
> [01] Belong

By noting which groups one is currently working with, this question complements the first by adding a deeper dimension to the concept. The reason one cannot employ this measure alone, though, is relatively obvious. By asking which group one is "currently" working for, this question discards much useful information—after all, it is quite conceivable that one who is a member of an organization works on seasonal projects or that one has done much work in the past (perhaps even the recent past), but is not currently actively engaged. The two measures must thus be used in tandem. Still, the second is a stronger indication than the first of one's level of generalized interpersonal trust and should be treated as such. It is thus be weighted two-to-one over the first measure when summed in the index. This index is not standardized; rather, it simply reflects the sum of all the individual variables. Since there are six variables under each

question, the index measure yields a score with a theoretical range of zero (no membership or active voluntarism) to 18 (full membership and full voluntarism in all groups in the index).

Materialist and Postmaterialist Values

These are measured in much the same way that Inglehart measures them for his aggregate analyses, but are operationalized at the individual level. In order to understand the coding scheme, though, one must first understand the construction of the survey battery itself.

Inglehart uses an "index" of four items to test his predictions. Two of the four items presented are "materialist" items and two are "postmaterialist" items, according to his theory. The respondent, while viewing a card with the four items printed on it (see below), is asked the following question:[15]

> People sometimes talk about what the aims of this country should be for the next ten years. On this card are listed some of the goals which different people would give top priority. Would you please say which one of these you, yourself, consider most important? [First choice is coded.] And which would be the next most important? [Second choice is coded.]
>
> (M) Maintaining order in the nation
> (PM) Giving people more say in important government decisions
> (M) Fighting rising prices
> (PM) Protecting freedom of speech

The responses are listed above, designated as either materialist (M) or postmaterialist (PM). These are used to classify an individual as either "materialist," "postmaterialist," or "mixed." "Materialist" individuals are those who have chosen both of the "materialist" items; "postmaterialists" have chosen both of the postmaterialist items, and "mixed" individuals are those who have chosen one of each (Inglehart 1997).

[15] Inglehart has also proposed a twelve-item "index" that consists of three questions (the original listed here and two others), each with two choices from four possible alternatives. The original four-item measure is employed here for reasons of simplicity and parsimony—and because Inglehart found that his newer twelve-item battery was unnecessary, as it was so highly correlated with the original measure (Inglehart 1997).

In order to aggregate this measure for use in his analyses, Inglehart then takes the percentage of materialists in a given country and subtracts it from the percentage of postmaterialists in that country, thus yielding a score that is positive for postmaterialist countries and negative for those that are more materialist (Inglehart 1997: 136). Interestingly, though, this operationalization does not directly involve the "mixed" respondents. This is because in Inglehart's estimation, these individuals only confound the analysis and represent unnecessary information—his theoretical interest is in the extreme categories and their relationship to one-another. This logic is mirrored in the operationalization of the dependent variable employed herein on the individual level—it is a dichotomous variable, coded one if the respondent is a postmaterialist and zero if she is a materialist. Discarding the "mixed" category in this way is found to yield a truer, more accurate analysis than do efforts that include these respondents.

Control Variables

Thankfully, these are considerably simpler and require far less theoretical justification and elaboration. At both level one and level two, the only controls involved are economic and demographic variables drawn from the numerous analyses performed by Inglehart himself.

The controls to be specified at the individual level, then, are the age of the respondent in years (variable X003 in the WVS) and the respondent's highest level of education attained (X025). The first of these is based on the respondent's recall of her year of birth, and is confirmed by the respondent's affirmation of the interviewer's statement, "This means that you are X years old." Such double-checking increases the reliability of the measure because it minimizes error, both on the part of the respondent and the interviewer.

The respondent's education is assessed through the following question:

X025.- What is the highest educational level that you have attained?

[01] Inadequately completed elementary education
[02] Completed (compulsory) elementary education
[03] Incomplete secondary school: technical/vocational type/(Compulsory) elementary education and basic vocational qualification
[04] Complete secondary school: technical/vocational type/Secondary, intermediate vocational qualification
[05] Incomplete secondary: university-preparatory type/Secondary, intermediate general qualification
[06] Complete secondary: university-preparatory type/Full secondary, maturity level certificate
[07] Some university without degree/Higher education - lower-level tertiary certificate
[08] University with degree/Higher education - upper-level tertiary certificate

Functional equivalents of the options listed above were used in each society to maintain comparability, and the highest level of expected completion was coded if the respondent was a student at the time of the interview. The resulting measure is one that allows for maximum comparability across societies with different educational systems.

In this analysis, though, one must consider many other cross-national differences as well. Countries as disparate as the United States and Bangladesh differ widely in many attributes; this is necessary when one seeks to attain the level of cross-national generalization sought in this paper. Still, such differences pose problems for the analysis, for they limit the degree to which the societies are directly comparable. Fortunately, the methodology employed herein minimizes such concerns by controlling for any and all differences across countries. Because all such differences are controlled for in this manner, the only controls necessary at level two are those whose effects are of direct interest to the theory, those whose results can serve as indications of the integrity of the research design by validating it in terms of its congruence with previous research.[16]

[16] I have recently been led to rethink this specification. It might indeed be useful to more explicitly control for some of these differences, such that their effects could be more directly and precisely gauged. Moreover, to the extent that the inclusion of more controls can account for the cross-national variance in the level of postmaterialism, this would be an additional contribution. With all of this in mind, it would be wise to incorporate a measure of the level of a society's development (GDP per capita, for example), along with other social indicators (e.g., the average levels of education, literacy, and/or social expenditure more generally), to the extent to which these are available.

The country-level controls to be assessed, then, are inflation and unemployment. The inflation measure has been garnered from the World Development Indicators database updated annually by the World Bank. Known as the "GDP implicit deflator," it is calculated using the ratio of GDP in current local currency to GDP in constant local currency and expressed as an annual percentage increase or decrease. This is a comprehensive measure in that it shows the rate of price change in the economy as a whole. Moreover, since GDP is a very commonly reported statistic, this measure of inflation was found be the most widely available of its kind.

Aggregate unemployment is also of interest, and this measure has been constructed by aggregating an individual-level variable in the WVS dataset (X028). Individuals' answers to the question, "Are you employed now or not?" were used to derive the proportion of those unemployed within each country. It should be noted that constructing a country-level variable in this manner assumes that the sampling scheme employed in the WVS is accurate (for any sampling error would be reflected in the measure). Such a measure is admittedly far from ideal and was pursued as a last resort, as unemployment statistics from both the World Bank World Development Indicators (WDI) database and the CIA World Factbook were consulted first and found wanting.[17] Still, when the aggregated measure is correlated with the measure from the WDI database, the result is a highly significant Pearson's R of 0.557 (N = 44), which lends some support as a check of validity.

[17] The WDI version was defined as "the share of the labor force that is without work but is available for and seeking employment, expressed as a percentage." This operationalization proves problematic in that in areas of chronically high unemployment, individuals may have given up on finding work, thus artificially deflating the statistic. Worse, the measure was not available for many of the country-years for which it was needed. An attempt was made to gather more inclusive statistics from the CIA World Factbook (which defines unemployment as the percentage of the total labor force that is out of work, regardless of whether or not these individuals are actively seeking employment), but most of these were found to be estimates and although the Factbook is updated annually, many of the unemployment statistics were found to be very old indeed (this was determined by cross-referencing them with older versions of the Factbook and noting whether or not they had changed over time).

Hypothesized Effects

One may recall from the earlier discussion the following HGLM model (please note that the posited direction of relationship is now noted in parentheses adjacent to each of the variables):

$$\ln\left(\frac{\Pr(y=1\mid\beta)}{1-[\Pr(y=1\mid\beta)]}\right)(+) = \beta_0 + \beta_1[Age(?)] + \beta_2[Education(+)] + \beta_3[PartTrust(-)] + \beta_4[GenTrust(+)]$$

Figure 3: Level One HGLM Equation with Posited Relationships[18]

$$\beta_0 = \gamma_{00} + \gamma_{01}[Unemployment(-)] + \gamma_{02}[Inflation(-)] + u_0$$
$$\beta_1 = \gamma_{10} + u_1$$
$$\beta_2 = \gamma_{20} + u_2$$
$$\beta_3 = \gamma_{30} + \gamma_{31}[\%pop(+)] + u_3$$
$$\beta_4 = \gamma_{40} + u_4$$

Figure 4: Level Two HGLM Equations with Posited Relationships[19]

The posited directions for the social capital (particularized and generalized trust) variables have already been discussed at length; the rest will no doubt require explanation. Each will be considered in turn. First, one will no doubt note that the "Age" variable lacks a posited direction. This is due to the fact that Inglehart theorizes that one's value structure is determined during one's formative years and remains virtually unchanged thereafter (on average). Moreover, it is the economic conditions in one's childhood that shape these attributes. Therefore, there is no way to predict how the values of the respondent may have been shaped, as this will vary with the individual.[20] The key purpose for this analysis, though, is simply to

[18] All level one predictors were centered at their within-group means prior to the analysis in order to facilitate the interpretation of results.
[19] The two macroeconomic indicators were centered on their grand means (their means calculated across the entire sample) prior to the analysis. The "%pop" variable was not centered.
[20] Were this to be an aggregate level analysis, one could reasonably make conjectures as to the average values expressed by particular cohorts through a thorough examination of the macroeconomic conditions in the country-

control for these effects—and this is accomplished through the inclusion of the variable and the specification of an error term (u_1) in its level two equation. Whether the relationship is, on balance, positive or negative is of little consequence.

The effect of education should be positive, as it has been shown to increase one's level of postmaterialism in two ways. First, it may act as a proxy for the socioeconomic status of one's parents (Inglehart 1997: 23) and thus as a proxy for one's economic situation during one's formative years. Second, it may contribute to one's own socioeconomic well-being (educated persons are far less likely to be faced with starvation or homelessness, for example). Other causal processes have been proposed, as well, and each of these proposes a positive relationship between education and postmaterialism (Habermas 1979, Jaeggi 1979).

The two macroeconomic controls are modeled on the level one constant at level two in order to compensate for what Inglehart describes as "period effects" (Inglehart 1997: 137, 321-23). These are effects that temporarily perturb (and perhaps mask) one's underlying value preferences because they inhibit their expression. If the level of inflation or unemployment in a given individual's country is high, for example, priorities may shift rather quickly from protecting freedom of speech to an avowed preference for lower prices. Once the crisis has receded, however, one's true value preferences will once again be revealed. These macroeconomic variables are included for two reasons. First (and not least important), they are the variables Inglehart uses to control for period effects. Second, the way the materialist/postmaterialist question is worded commands their inclusion. The question itself asks not what the respondent values in her own life situation, but rather about her opinion concerning "what the aims of [her] country should be for the next ten years." Certainly macroeconomic

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years during which one experienced one's formative years; however, this point is moot for such detail is neither necessary nor desirable here—it is best left for another study.

factors must play a role in such an evaluation, even if the respondent is only aware of them vaguely and experientially (as opposed to statistically or theoretically).

The third and final level two control is the third component of the particularized trust measure, the percentage of the population in the respondent's society that shares her religious denomination. This is modeled on the level one coefficient of the particularized trust index measure, and the relationship should be positive because as the size of the respondent's in-group relative to her society increases, the posited negative relationship between an individual's level of particularized trust and her probability of being a postmaterialist should be weakened (that is, it should become less negative). As recounted earlier, this is to be expected because as the percentage approaches one hundred, the character of the observed effect should change—the effect of particularized trust should become more like that of generalized trust.

It is worth reiterating that all of these hypothesized effects will be estimated in the context of a model that controls for variations in the relationships across countries (the level two units). This will yield more accurate estimations than have heretofore been attempted, and should allow some very interesting interpretations. In the next chapter, these will be enumerated and discussed.

CHAPTER 3

RESULTS AND CONCLUSIONS

Table 1: Results of HGLM Analysis of Postmaterialism

	Coefficient (Standard Error)	*Odds Ratio*
Individual-level Predictors:		
Modeled on Postmaterialism, β_0		
Age, γ_{10}	-.017*** (.002)	.983
Education, γ_{20}	.231*** (.024)	1.260
Particularized Trust, γ_{30}	-.014 (.092)	.986
Generalized Trust, γ_{40}	.080*** (.012)	1.083
Country-level Predictors:		
Modeled on Postmaterialism, β_0		
Unemployment, γ_{01}	-.067** (.025)	.035
Inflation, γ_{02}	-.011* (.005)	.989
Modeled on Particularized Trust, β_3		
In-group as % of Population, γ_{31}	-.003 (.001)	.997

Note: Dependent variable is binary, coded one for postmaterialist and zero for materialist. N = 19,853 individuals in 51 countries. *** $p < .001$, ** $p < .01$, * $p < .05$ (two-tailed test).

Table 1 displays the results from the two-level Bernoulli HGLM analysis employing the logit link function (unit-specific model).[21] First, all of the control variables perform as expected.

[21] There are other sets of estimates reported for a Bernoulli estimation, as well (those for the identity link function or the population-average model, for example), but this is the one most pertinent to the current analysis.

From the odds ratios, one can see that for every percentage point increase in unemployment, the odds of a respondent in that country being a postmaterialist decrease by a factor of 0.935, or 6.5%. Inflation, too, exhibits a negative relationship: For every percentage point increase in inflation, the odds of being postmaterialist decrease by an average of 1.2%. The relationship between postmaterialism and education is quite strong, as each additional category of education increases one's odds of being postmaterialist by 25.9%. All of these results are important for establishing the validity of the research design and the model specification, for they indicate that that the current study is compatible with the vast majority of the existing literature.

The hypothesis that generalized trust is positively related to postmaterialist value structure is borne out in the results. For each additional voluntary organization joined, one is 8.3% more likely to exhibit postmaterialist values. For every additional organization for which one volunteers to work, the effect doubles to a 16.6% increase.[22] Most importantly, though, this relationship has been shown to *exist at the individual level and while holding other factors (including any and all country-specific factors) constant*. This represents the first time that a non-spurious relationship has been shown to exist between trust and postmaterialism, and it is thus quite significant substantively. Indeed, it provides profound support for the argument for theoretical convergence.

The index measure of particularized trust does not perform as well, however. Even though the coefficient is negative as expected, its uncertainty is too great; consequently, the null hypothesis that there is no relationship between particularized trust and materialist/postmaterialist value structure cannot be rejected. That is, it is statistically possible that there is no relationship (or even that the true relationship is a positive one). This could be due to the fact that the relationship between one's level of religious belief and one's value

structure varies in patterns that cross or cluster national boundaries (recall that a key assumption of this analysis is that the variation does not occur dominantly regionally, geographically, or historically, for example). Immigration could be a tainting factor in this regard, as it would tend to confound the common cultural influences exerted within a nation. Furthermore, one's identity as an immigrant may trump differences in religious affiliation (to the extent that these are separable). The observed negative relationship may also be reflective of measurement error inherent in the operationalization.[23] Regardless of the reason, however, the upshot is that fully half of the proposed relationship between the concepts of social capital and postmaterialism finds little support in this analysis.

It is interesting, though, that the percentage of the respondent's society that shares her religious affiliation is very nearly significant at the 0.05 level ($p = 0.053$), but is negatively signed.[24] This indicates that, contrary to expectation, as the size of the respondent's religious group increases relative to the population of her society, the effect of particularized trust on one's propensity to be postmaterialist becomes more strongly negative. This finding must be cautiously interpreted due to its lack of statistical significance, but it is useful to consider possible explanations for it. One plausible explanation is that the present analysis neglects to look at the dominant religious affiliations of neighboring nations. That is, it could be that as the size of one's in-group increases relative to one's society, the nature of the trust does not change, but the definition of one's out-group does—rather than focusing on other groups within one's

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[22] This is due to the way the variable is coded—see Chapter 2 for information concerning operationalization.

[23] The key concept to be measured is the strength of one's religious beliefs, the assumption being that the stronger one's beliefs, the more likely they are to trump other facets of one's identity. In fact, there are variables that are better and more consistent with this notion that could have been chosen to operationalize the concept of particularized trust in the WVS dataset. The problem with these is that their inclusion would have cut the number of viable cases and biased the sample such that the types of cross-cultural and cross-national inferences sought in this study could not have been drawn.

[24] This lack of statistical significance no doubt reflects the fact that particularized trust, the variable upon which it is modeled, is not at all significant.

society (as these are too small to pose any real threat, political or otherwise), one concentrates on the populations in the nations that border one's own and the extent to which these differ from one's in-group. Or, more broadly, it may be that the general rule is that the less one comes into contact with members of out-groups, the more insular one's in-group becomes and the more one's particularized trust is strengthened as a result. These proposed explanations are beyond the scope of this analysis, but could be fruitfully examined in further research (perhaps concerning the development and maintenance of nationalist attitudes, for example).

Finally, the general strength of the relationships is notable. The magnitudes of the various coefficients are actually quite impressive, given that they are estimated using survey data at the individual level. When working with data of this kind, researchers usually expect smaller coefficients, focusing instead on whether or not they are properly signed and statistically significant.[25] That the estimated effects are large enough to be theoretically impactful suggests a level of substantive significance to the model, as well, a contribution that is often lacking in other individual-level analyses.[26]

Implications

This project has sought to unify two broad concepts in the political science literature by illuminating their common foundation with regard to trust. The posited relationship between generalized trust and postmaterialism was found to be strong, positive, and statistically significant. The relationship between particularized trust and materialism did not fare as well,

[25] Data such as these are notoriously "dirty" due to the prevalence of individual variation in survey responses. There are numerous possible sources of such variation, including framing effects, primacy/recency effects, interviewer effects, the "halo" effect, and differences in question interpretation (to list but a few). In fact, it is by referencing this property of individual-level data that Inglehart justifies his use of aggregate-level data in his reply to Seligson, for he suggests that aggregation cancels out much of this seemingly random variation (Inglehart 2003b: 64).
[26] This is presumably due to their structural inability to control for differences across higher-level units.

likely for the reasons expounded in the previous chapter. Even if this second relationship does not exist, however, the demonstration that the first exists at the individual level and is not spurious is a substantial contribution.

Still, one may rightly demand to know what such a relationship actually means. To be perfectly honest, it is difficult to disentangle the causality involved with the data that are currently available. The operable question is whether trust is at the root of postmaterialism or whether postmaterialism is at the core of trust. Although this paper has made a case for the former, the truth is that without more targeted survey batteries and more detailed analyses, there is simply no way to confirm or deny either possibility conclusively. Such questions fall under the purview of future research.

And future research must address this issue, for there is much to gain in terms of theoretical parsimony. If one of these concepts can be shown to be the antecedent of the other, then the entire breadth and depth of the social capital and postmaterialism literatures may be attributed to a single parsimonious theory. This study has taken the first step in this noble direction, but much remains to be done.

For now, then, postmaterialism and social capital may continue to coexist, but they must be acknowledged as mutually dependent, and this independent of any external conditions. One consequence of this is that key aspects of the two concepts may be seen as mutually reinforcing. For example, the fact that both Uslaner and Inglehart have independently asserted that their respective concepts are formed early on in one's life and are later resistant to change lends a measure of face validity to both claims, now that the link has been demonstrated. This means that rather than being the *consequence* of an active civil life, trust and postmaterialism are its *cause*. Programs that seek to generate trust through increasing participation in civil society are

thus destined to fail—they may generate a *form* of trust, but the form that trust takes will be wholly dependent upon the individual. Since strategic trust is the type fostered by repeated interaction and moral trust is held to be resistant to change, whatever trust is fostered is unlikely to be projected beyond the group in which it was generated; hence, the desirable benefits of a more generalized trust will remain out of reach. The consequences of such programs, on balance, thus may or may not be beneficial for the society as a whole.

Similarly, Inglehart's claim that postmaterialists are less xenophobic than materialists is buttressed when trust is considered, for it is intuitive that a generalized truster is more likely to trust those unlike herself.

The literature is rife with such commonalities, and all of them benefit from the successful demonstration of the linkage proposed in this paper. That this is so illuminates more puzzles for future research, for from now on, if there be disparities in the way social capital and postmaterialism relate to a particular phenomenon, these will need to be explained. Insofar as such puzzles can be found and explained, this may also contribute to "unpacking" the two concepts (something that is of dire need with respect to social capital, for example).

Finally, this paper may serve to help bring the focus of studies of value change back to the individual level. It has illustrated that a methodology exists to do so, and that it can be done with no loss of parsimony or precision. It has also shown that studies of this type must be performed with an eye towards unraveling the mechanics at work at the level of the individual, for this is the level at which aggregate processes commence. Insofar as individual-level psychology affects political outcomes, it is germane to political science research.

In all of these ways, then, this analysis has been a success.

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APPENDIX A

COUNTRIES INCLUDED IN THE ANALYSIS

Table 2: Frequency Counts by Country for Primary (Bernoulli) Analysis

Country/Region	Frequency	Percent	Valid Percent	Cumulative Percent
Albania	415	2.1	2.1	2.1
Argentina	506	2.5	2.5	4.6
Austria	381	1.9	1.9	6.6
Bangladesh	568	2.9	2.9	9.4
Belgium	420	2.1	2.1	11.5
Bosnia and Herzegovina	372	1.9	1.9	13.4
Bulgaria	254	1.3	1.3	14.7
Belarus	221	1.1	1.1	15.8
Chile	468	2.4	2.4	18.2
Croatia	242	1.2	1.2	19.4
Czech Republic	224	1.1	1.1	20.5
Denmark	151	.8	.8	21.3
Estonia	92	.5	.5	21.7
Finland	236	1.2	1.2	22.9
France	355	1.8	1.8	24.7
Germany	465	2.3	2.3	27.0
Greece	311	1.6	1.6	28.6
Hungary	286	1.4	1.4	30.1
Iceland	254	1.3	1.3	31.3
India	690	3.5	3.5	34.8
Italy	603	3.0	3.0	37.8
Japan	205	1.0	1.0	38.9
Republic of Korea	439	2.2	2.2	41.1
Latvia	189	1.0	1.0	42.0
Lithuania	183	.9	.9	43.0
Luxembourg	226	1.1	1.1	44.1
Malta	410	2.1	2.1	46.2
Mexico	537	2.7	2.7	48.9
Republic of Moldova	392	2.0	2.0	50.8
Netherlands	135	.7	.7	51.5
Peru	496	2.5	2.5	54.0
Poland	418	2.1	2.1	56.1
Portugal	369	1.9	1.9	58.0
Puerto Rico	226	1.1	1.1	59.1
Romania	470	2.4	2.4	61.5
Russian Federation	597	3.0	3.0	64.5
Slovakia	396	2.0	2.0	66.5
Viet Nam	244	1.2	1.2	67.7
Slovenia	194	1.0	1.0	68.7
South Africa	1224	6.2	6.2	74.9
Zimbabwe	419	2.1	2.1	77.0
Spain	765	3.9	3.9	80.8
Sweden	174	.9	.9	81.7
Turkey	435	2.2	2.2	83.9

Uganda	401	2.0	2.0	85.9
Ukraine	258	1.3	1.3	87.2
Republic of Macedonia	378	1.9	1.9	89.1
United Republic of Tanzania	340	1.7	1.7	90.8
United States Of America	376	1.9	1.9	92.7
Ireland/Northern Ireland	543	2.7	2.7	95.5
Serbia and Montenegro	900	4.5	4.5	100.0
Total	19853	100.0	100.0	

The frequency counts in Table 2 reflect the primary analysis presented in the body text. Countries dropped from the analysis for reasons other than data availability are the following:

Israel was dropped because the religious cleavages there are so strong that they might pose a problem for the analysis.

China was dropped because it is a Communist nation and is officially Atheist.

Taiwan was dropped because it did not report macroeconomic statistics separate from mainland China.

Canada and the **Philippines** were dropped because they allowed coding for all eighty-six religions in variable F025 (the religious denomination of the respondent). The resulting fractionalized measure was deemed unrepresentative of the actual salient cleavages in those societies. The only alternative was to artificially collapse the categories into coherent subgroups post hoc, and this was judged too contentious an approach.

Also of note, **Ireland** and **Northern Ireland** on the one hand and **Serbia** and **Montenegro** on the other were combined due to the lack of independent macroeconomic variables.

APPENDIX B

GENERALIZED AND PARTICULARIZED TRUST IN 51 SOCIETIES

Figures 5 through 9 depict the varying levels of generalized and particularized trust in the 51 societies analyzed, as operationalized in chapter two. The societies have been sorted in ascending order of particularized trust and are presented in sets of ten for ease of interpretation. The variables have been standardized—this means that the zero point is the sample mean, while the bars represent the number of standard deviations a given society is away from the mean.

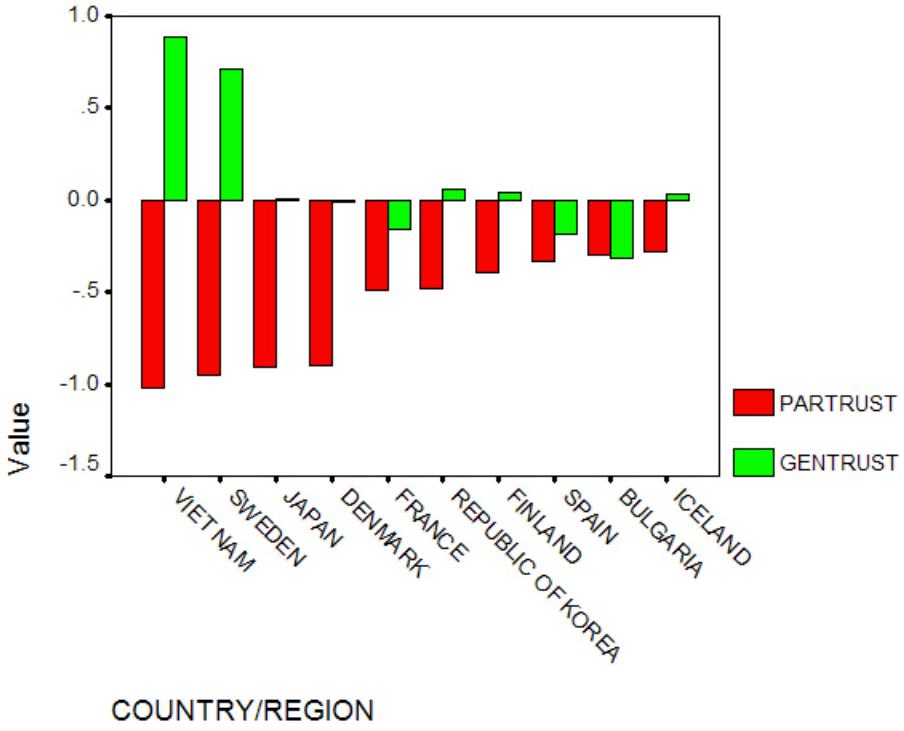

Figure 5: Generalized and Particularized Trust in Ten Societies

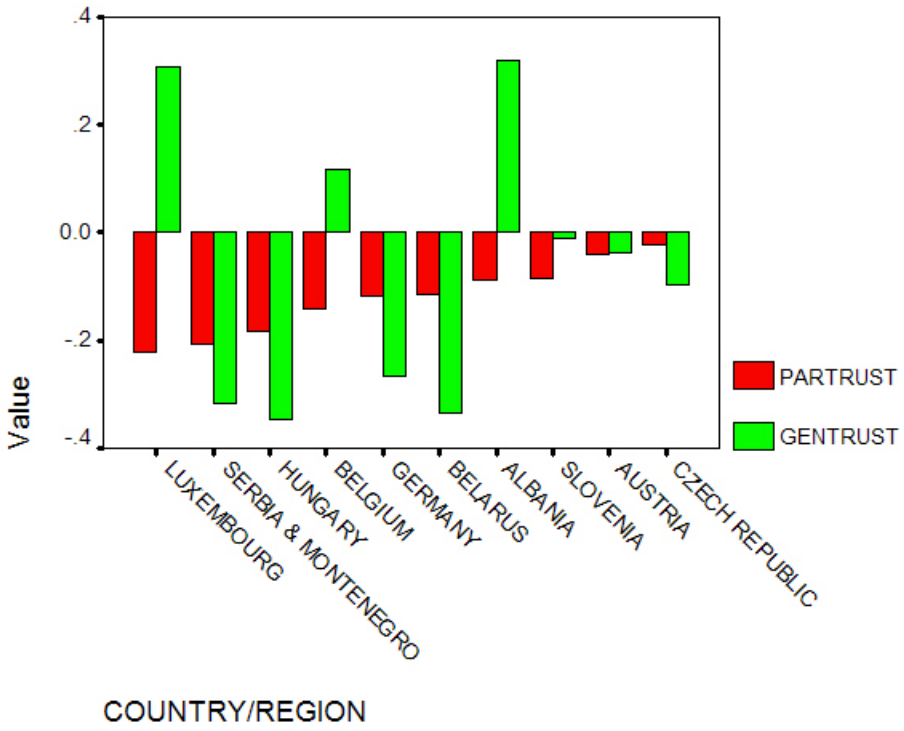

Figure 6: Generalized and Particularized Trust in Ten Societies

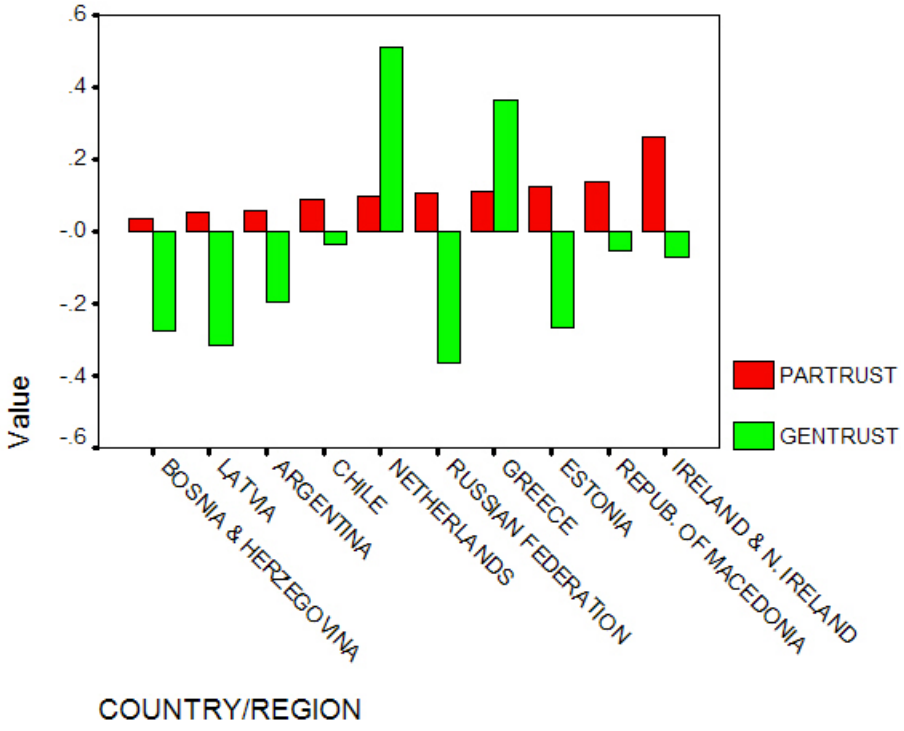

Figure 7: Generalized and Particularized Trust in Ten Societies

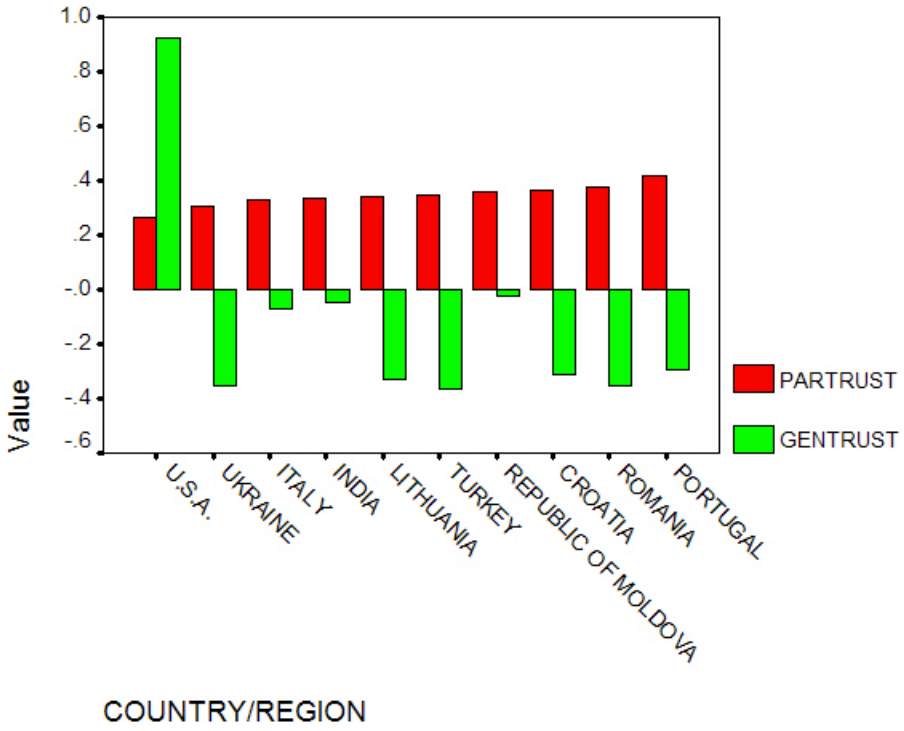

Figure 8: Generalized and Particularized Trust in Ten Societies

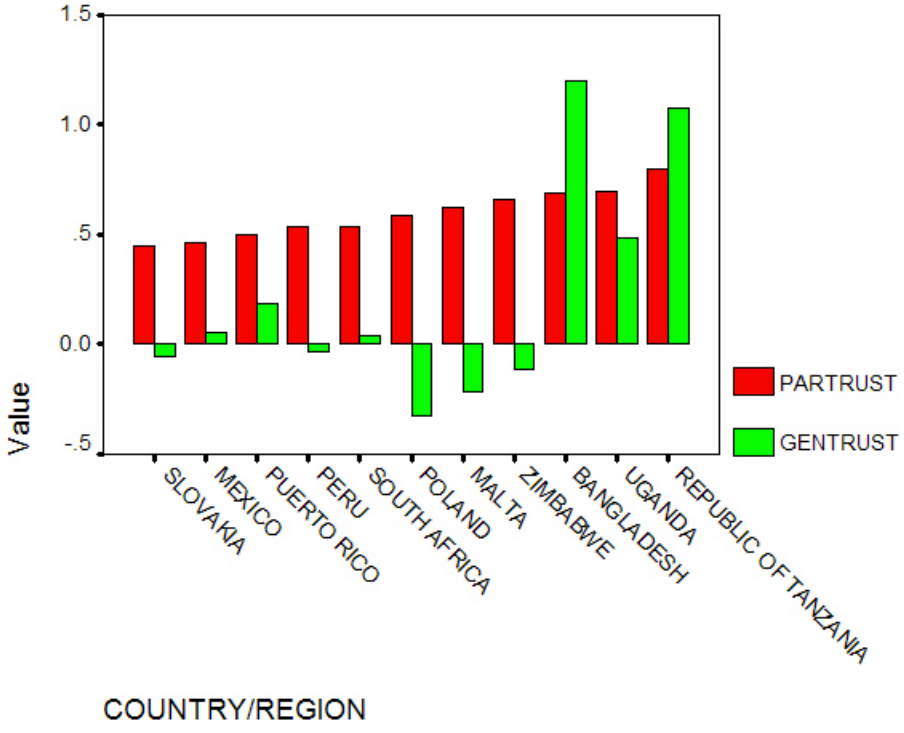

Figure 9: Generalized and Particularized Trust in Eleven Societies