Economic Development, Inequality, and Attitudes:

Acceptance of Homosexuality in 38 Democracies

Robert Andersen and Tina Fetner*

Department of Sociology
McMaster University
Hamilton, Ontario

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Abstract

We use multilevel logit models fitted to data from the World Values Survey and national statistics for 38 countries to assess how individual-level economic position and national political and economic context interact in their affects on attitudes toward homosexuality. We find that although economic development is related to attitudes for professional and managerial occupations, it is of little importance to lower class positions. We also find that income inequality affects attitudes, and that this effect differs according to individual-social class. Finally, we find a significant difference in attitudes between those from post-Communist societies and those from societies that have never experienced Communist rule, with the latter tending to be much more liberal. These findings provide a more nuanced description of the relationship between economic factors and values than has been suggested by the postmaterialist thesis. More specifically, both economic development and relative economic position appear to affect values and attitudes. They also have political implications, suggesting that conservative economic policies that have the goal of economic growth but fail to consider economic inequality contribute to intolerant social and political values, an attribute widely considered detrimental for the health of democracy.

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Introduction

Inglehart's (1971, 1990, 1997, see also Abramson, Ellis and Inglehart 1997; Inglehart and Baker 2000) postmaterialist thesis suggests that liberal social values result from democracy, economic development, and modernization. Important to this argument is the idea that the prosperity of modern societies allows people to shift their attention from material concerns to so-called "postmaterialist" issues, such as freedom and self-expression. The present paper extends this postmaterialist thesis by considering the role of economic inequality *within* countries, as well as economic inequality across countries. We also evaluate the implication of the postmaterialist thesis that it applies to all segments of the population regardless of economic position by considering whether economic development and income inequality have different consequences for attitudes depending on individual-level social class. We are specifically concerned with attitudes toward one important social and political issue: homosexuality. At present, there is perhaps no better postmaterialist issue on which to evaluate this thesis because it is increasingly salient, policies regarding it differ widely across societies, and public opinion on it differs significantly across nations and over time.

Recent research indicates that general social tolerance (measured as the willingness to extend full citizenship rights to all others) has increased only slightly over time, at least in the United States (Mondak and Sanders 2003). With respect to homosexuality in particular, however, many studies indicate that attitudes have liberalized significantly since 1970, though many agree that most of the change occurred after 1990 (Altmeyer 2001; Dejowski 1992; Loftus

2001; Smith 1992; Yang 1997; Andersen and Fetner 2005). Other evidence suggests that attitudinal change with respect to homosexuality has been greater than for any other issue (Treas 2002). According to Inkeles (1969), a shift to postmodern economic relations underlies these changes in many countries (see also Inkeles and Smith 1974; Inkeles 1983). Still, more recent research by Loftus (2001) suggests that a general cultural shift to the left cannot account for the rapid changes in attitudes toward homosexuality since the 1970s. Unfortunately, almost all research on this topic considers a single nation, most often the United States. Although single nation studies are informative in that they show individual characteristics—such as age, gender, and marital status—are key predictors of attitudes toward homosexuality, they tell us little about the role of national context. The present paper improves on previous research by using multilevel logit models to explore the interaction between individual-level and national-level influences in their effects on attitudes towards homosexuality in 38 democracies.

Tolerance and Attitudes towards Homosexuality

There is a large body of political science research on the general topic of social tolerance. Early studies typically concentrated on differences in tolerance between political elites and the masses. A common finding was that political power and education were positively related to tolerance of various "outgroups" (Davis 1975; McClosky 1964; McCutcheon 1985; Prothro and Grigg 1960; Stouffer 1955), though it is not clear whether education liberalizes or simply leads to people having a better knowledge of social norms and values, resulting in "appropriate" liberal answers to survey questions (Jackman 1972). Intolerance also appears to be related to a perception that an outgroup poses a threat—whether real or imaginary—to the way of life of the majority. With this in mind, other research indicates that those who are psychologically insecure

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tend to feel more threatened, and thus are less tolerant, than those who are psychologically secure (Sullivan, Pierson, and Marcus 1982). It has also been found that social forces, such as financial insecurity, significantly contribute to intolerance (e.g., McClosky and Brill 1983). Other research indicates, however, that no single process or dimension can explain all social tolerance (Chong 1993; Gibson 1986).

There is also substantial research exploring the predictors of acceptance of homosexuality. There is a broad consensus, for example, that men typically have more negative attitudes than women (Britton 1990; Kite 1984; Yang 1998). There is also overwhelming evidence that tolerance of homosexuality is positively related to education, and to the size of locale in which people live (Herek and Capitanio 1996; Lottes and Kuriloff 1994; Stephan and McMullin 1982). Moreover, it is widely accepted that older people tend to be less tolerant than younger people (Inglehart, 1990: 194), though this pattern seems to be due to cohort and period effects as well as age itself (see Andersen and Fetner, 2005).

Economic position has also been found to be related to tolerances and social attitudes generally. For example, Lipset's (1959) early research on social class differences in attitudes showed that members of the working class hold authoritarian, and thus less tolerant, views. This finding inspired much research demonstrating a relationship between economic factors and general social tolerance. Specifically related to attitudes toward homosexuality, Persell and others (2001) found that those in "economic distress" are less likely than those who are financially secure to hold tolerant attitudes. Similarly, Svallfors' (2005) comparative analysis of the United States, Great Britain, Sweden and Germany, found that social class affects many social attitudes in all four countries, including attitudes toward homosexuality, even after controlling for education.

While few disagree that social background is related to attitudes, this tells us little about national differences in public opinion. An exclusive focus on individuals deflects attention from the larger social and political forces that underlie attitudes generally, and towards homosexuality specifically (Adam 1998; Kitzinger 1987; Plummer 1981). Unfortunately, there is a relative dearth of research examining the structural underpinnings of anti-gay attitudes. Moreover, most research on this topic relies on data only from the United States, which is atypical because of its legislation to prohibit same-sex marriage and otherwise deny rights to lesbians and gay men (Adam 2003). Regional differences notwithstanding, the United States is moving in the direction of restricting lesbian and gay rights at a time when Canada, Australia, New Zealand, the European Union, South Africa and some Latin American countries have been moving toward recognizing same-sex partnerships and granting marriage rights to gay men and lesbians. It may follow that Americans' attitudes toward homosexuality are similarly exceptional in relation to their counterparts in Europe, Canada and Australia.

There is some empirical evidence that social and political context affects social tolerance, both generally, and with respect to homosexuality specifically. Quillian (1995), for example, shows a strong relationship between community characteristics and racial prejudice. Moore and Vanneman (2003) indicate that the proportion of those practicing fundamentalist Christian religions in U.S. states is positively related to conservative attitudes toward gender equality at the individual level. With respect to homosexuality specifically, people who do not know a homosexual person are more likely to have negative attitudes than those with lesbian or gay acquaintances (Cullen, Wright and Alessandri 2002; Herek and Glunt 1993). Moreover, Bernstein (2004) argues that one's group position in an institution is an intermediate influence that connects social background to anti-gay attitudes. Similarly, Persell, Green and Gurevich

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(2001) explain attitudes toward homosexuality as partly reflecting citizens' associations in "civil society" institutions and their economic position. They argue that increased social ties and the trust that develops out of those ties, combined with greater economic security, produce more tolerant attitudes.

National Context and Values and Attitudes

Much influential cross-national research on attitude difference has been spurred by Inglehart's (1987; 1990; 1997) postmaterialist thesis, which argues that economic security resulting from sustained economic growth in modern societies has decreased the importance of economic issues, thus freeing citizens to give greater consideration to other social issues than they did in previous decades. His findings are explicit that citizens from modern industrialized nations tend to have more "postmaterialist" attitudes than citizens from developing nations. Postmaterialist attitudes include pluralistic tolerance, a preference for gender equality, and tolerance of homosexuality. Applying the postmaterialist thesis to gender ideology (in which a measure for attitudes toward homosexuality is embedded), Wernet, et al. (2005) support this argument through a comparative analysis of 40 nations. They find that economic development is likely to lead to a "pro-woman state" that, for example, protects women's reproductive rights and supports parental leave and childcare for working mothers. These structural factors, they argue, lead to meso-level socializing institutions such as school and work that then transmit postmaterialist values throughout the population.

Inglehart and Baker (2000) further argue that factors such as cultural heritage, religion, and Communist rule encourage the maintenance of traditional values in some modern economic settings. They conclude that economic development is "associated" with changes in values in a probabilistic, rather than deterministic way (Inglehart and Baker 2000:50). More specifically,

they demonstrate that a history of Communist rule is related to economic development, such that people in ex-Communist countries show a different pattern of values. People in ex-Communist societies that experienced economic collapse after the dissolution of the Soviet Union tend to hold traditional "survival" values, which are less tolerant, and people in ex-Communist countries with expanding economies show movement toward post-modern tolerant values.

Still, questions about the relationship between national economies and social attitudes remain. For example, the postmaterialist thesis cannot adequately explain variation in social attitudes among rich nations—or for that matter, among poor nations—regardless of whether or not they experienced Communist rule in the past. In this respect, not sufficiently addressed is the link between the distribution of resources within nations and the distribution of postmaterialist values. Since the benefits of economic prosperity are not equally distributed throughout the population of a single nation, not all experience the freedom from material concerns that is so important to the postmaterialist thesis. Moreover, there is much variation in the level of income inequality across countries, regardless of level of economic development and democratic tradition. Some nations, like Great Britain and the United States, have relatively high levels of income inequality compared to other nations with high per capita GDP such as the Scandinavian countries and the Netherlands. Given that attitudes about matters such as gender equality, the environment, and homosexuality, are related to individual economic position within these countries (Evans 1993; Persell, Green and Gurevich 2001; Svallfors 2005), it is sensible to expect that national levels of prosperity may also affect social attitudes in a similar differential manner.

We extend the postmaterialist thesis by considering the relationship between economic position at the individual level and national economic prosperity. We expect that economic

development will have greater impact on the attitudes of those in higher social classes because they gain more from the nation's prosperity. In other words, the relationship between GDP and postmaterialist values should be most noticeable among those in the managerial and professional classes. We also consider the role of national levels of inequality in producing more or less tolerant attitudes toward homosexuality, and similarly explore the relationship between economic position and inequality. Consistent with previous research, we also explore the relationship between former Communist rule and attitudes.

Research Questions

The present paper examines three sets of research questions derived from the literature reviewed above:

1. Are people more likely to be tolerant of homosexuality if they live in a country that has relatively high economic development? Does this relationship hold after controlling for important individual-level social background predictors?

2. Does income inequality and democratic tradition better explain differences in attitudes than does economic development? More specifically, does the effect of economic development diminish when the level of national income inequality and democratic tradition are added to our statistical models?

3. Do the effects of the economic development, income inequality, and democratic tradition differ according to individual-level economic position? In other words, does social class have a statistically significant interaction with these national variables in their effects on attitudes?

In the next section we describe the data and methods we employ to answers these questions.

Data and Methods

We combine individual-level survey data collected during the period from 1990-2000 from 38 countries with country-level data obtained from official sources. The individual-level data are from the World Values Survey (Inglehart, et al. 2001). We restrict our analysis to all available European countries, Australia, Canada, and the United States. Although the WVS also contains some surveys from 1981, we use only data from the 1990, 1995 and 2000 surveys. All of these surveys were collected from samples of adults (18 years and older) representative of the national populations. After removing missing cases, the analytical sample contains 81,348 individual respondents. Country-specific details (such as the years for which we use the data and the corresponding sample sizes) can be seen in Table 1.

[Table 1 about here]

Dependent Variable

The dependent variable for the present study relies on a single questionnaire item used to tap attitudes toward homosexuality. The wording of the question is as follows:

"Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between, using this card."

Homosexuality

Never   Always

Justifiable   Justifiable

1   2   3   4   5   6   7   8   9   10

Figure 1 displays the distributions of responses to this question for all 38 countries. Along the

horizontal axis is the response category, ranging as above. Each row indicates the proportion of

responses for each category for a particular country. Countries are ranked in descending order in

terms of the proportion of respondents responding that homosexuality is "*never justifiable.*" The

darker the shading, the larger the proportion of cases that fall in the category it represents. Three

noteworthy observations about this figure affected our decision on how to treat the dependent

variable: (1) except for a handful of countries, the largest proportions are in the "*never

justifiable*" category, and the proportion of cases tends to get smaller as the scale goes up; (2) in

the countries that do not follow this pattern, there tends to be much greater polarization, with a

large group at each end of the two extremes of the scale; and (3) for most countries there is a

significantly large proportion of responses that falls in the middle categories (5 or 6), suggesting

that many people did not have a strong opinion on the issue. Given that the full range of the scale

was not well utilized in any of the countries, we chose to recode the variable into two groups:

those who felt that homosexuality is "*never justifiable"* (response category 1) were recoded 0,

and all those who felt it could be *"justifiable"* (categories 2-10) were recoded 1. This decision

also has a sound theoretical basis in that responding *"never justifiable"* constitutes a strong

conviction.

[Figure 1 about here]

Individual-level predictors

In order to assess the impact of economic inequality at the individual-level, our models include a measure of social class. A measure of relative income would be more appropriate, but there is no suitable measure in the WVS. Although there is a measure of income, it contains a large amount of missing data, and because it is self-reported, is not reliably measured. Social class, on the other hand is typically more reliably measured and had far fewer missing cases. We follow Hout, Manza and Brooks (1999) by dividing social class into four categories: (1) managers, (2) professionals, (3) routine non-manual labour, and (4) working class.[1] Previous research suggests that this measure works well for predicting attitudes in comparative perspective (see Andersen and Heath 2003).

The individual-level control variables used in the study are gender, birth cohort, religiosity, marital status, size of town in which the respondent resided, and education. Birth cohort is divided into four categories of roughly 10-year spans: (1) born before 1920, (2) 1920-39, (3) 1949-59 and (4) 1960 or later. Due to limitations in the data, education is divided into three categories according to the age that the respondent finished formal education: (1) high (left school after 21 years of age), medium (left between 18 and 21 years old) and low (left before 18 years of age). Religiosity is a dummy variable representing attendance at religious establishments at least once a month. Marital status is measured with a simple dichotomy of married versus not. Finally, the size of municipality in which the respondent resided is divided into two categories: (1) less than 10,000 versus (2) 10,000 or more.

Country-level Independent Variables

Income Inequality: Gini Coefficient

To measure income inequality we use the Gini coefficient, which has a theoretical range

from 0 (perfect equality) to 1 (perfect inequality, where one person has all of the income). For

those surveys for which it is available, we use data from the Luxembourg Income Study (LIS),

which is widely regarded as providing the most reliable information (Luxembourg Income Study

2005). For countries not covered by the LIS, we rely on data that were compiled by the World

Bank (2005) from information obtained from national statistical agencies. The surveys from

which the Gini was calculated were collected at irregular intervals, and thus we could not

directly match all surveys from the WVS to a Gini coefficient measured in the same year. In all

cases we use the available Gini coefficient that corresponds to the most recent WVS.[2]

Economic Development: Per-Capita GDP

Following Inglehart's postmaterialist argument, we include a measure of economic

development as a predictor. Research in economics also indicates a possible relationship between

economic development and income inequality (see, for example, Kuznets 1955), suggesting that,

at the very least, it is advisable to include both variables when trying to determine their effects in

order to prevent biased estimates. Following convention, we use per capita GDP. In order to

make the coefficient more easily interpretable, we enter per capita GDP/1000 into the models.

Information on the GDP was gathered from the World Bank (2005) and the *CIA World Factbook*

(Central Intelligence Agency 2005).

Democratic Tradition: Former Communist Rule

Democratic tradition is tapped by a dummy variable that takes into account whether the country was formerly under Communist rule. Aside from the possibility that past-Communist rule could affect attitudes on its own right, it is also important to include it as a control when exploring for the effects of income inequality on attitudes. Previous research indicates that the two variables are related, with post-Communist societies typically—but certainly not always—having lower levels of income inequality that countries that have never experienced Communist rule (see, e.g., Nielsen and Alderson 1995, Freeman and Oostendorp, 2000).[3]

Statistical Models

Our main analysis employs a series of multilevel logit models to predict the probability of having the attitude that *homosexuality is justifiable*. Although the models are built in a sequential order, all of them take into account the clustering of respondents within countries by specifying a random intercept. Given that we had surveys from more than one year for many countries—but not all—the models also take temporal variation into account. Model 1 assumes that the individual-level predictors have the same effect on attitudes in all countries but allows for country differences and year differences in attitudes. In other words, the model allows the intercept and year effects to vary across countries but holds the effects associated with all other variables constant across countries. This model does not include any contextual variables and thus is used as a baseline to test contextual models against.[4] Model 2 extends the model to include GDP per capita as a contextual effect. This model provides a standard test of the postmaterialist proposition that economic development affects attitudes—in other words, it does not control for other national context factors. Model 3 extends the model by including all three country-level predictors: per capita GDP, post-Communist, and the Gini coefficient. The final

model, Model 4, adds terms to capture possible cross-level interactions between social class and the three national-level variables in their effects on attitudes. Model 4 initially takes the following form:

$$Logit(\pi_{ij}) = \beta_{0j} + \beta_1\text{gender}_{ij} + \sum_{h=1}^{3}\alpha_h\text{cohort}_{hij} + \beta_2\text{Religiosity}_{ij} + \sum_{l=1}^{2}\eta_l\text{Education}_{lij}$$

$$+ \beta_3\text{married}_{ij} + \beta_4\text{small town}_{ij} + \sum_{m=1}^{4}\kappa_m\text{social class}_{ij}$$

$$+ \beta_5\text{Gini}_j + \beta_6\text{Per capita GDP}_j + \beta_7\text{Post - Communist}_j$$

$$+ \sum_{d=1}^{4}\varphi_d(\text{social class}_{ij} \times \text{Gini}_j)$$

$$+ \sum_{g=1}^{4}\omega_g(\text{social class}_{ij} \times \text{Per capita GDP}_j)$$

$$+ \sum_{t=1}^{4}\lambda_t(\text{social class}_{ij} \times \text{Post - Communist}_j)$$

$$\beta_{0j} = \beta_0 + u_{0j} + u_{1j} + u_{2j} \quad \pi_{ij} = \text{E}(p_{ij}), \quad p_{ij} = \begin{cases} 0 \\ 1 \end{cases}$$

$$p_{ij} = 1 \text{ if homosexuality is justifiable; 0 if not}$$

Here the subscript i indicates individuals (*i.e.*, level one observations) and j indicates countries (*i.e.*, level two observations). The p_{ij} are distributed binomially with mean β_{ij}, and variance $\beta_{ij}(1-\beta_{ij})$. The intercept is β_{0j}, u_{0j} represents the country-level variance around the intercept, and u_{1j} and u_{2j} represent the variation in intercept within countries that is due to survey years 1995 and 2000 (1990 is the reference category). Only statistically significant interactions are included in the reported models.

Results

As a preliminary measure, we start by exploring the effects of social class for each country separately. Figure 2 displays 95% confidence intervals for the coefficients representing the dummy variables contrasting both managers and professionals with the working class (reference category) from separate binary logit models fitted for each country. These models control for all other individual-level predictors that are also included in the multilevel models. Countries are listed in Figure 2 in descending order according to fewest proportions of respondents stating that homosexuality is "never justified."

<div align="center">

[Figure 2 about here]

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Three tentative conclusions can be made from Figure 2: (1) the most tolerant countries tend to be those with high levels of economic development and that have not experienced Communist rule, (2) class differences tend to get larger as the level of tolerance in the country becomes higher, and (3) countries that experienced Communist rule tend to have smaller class differences than those countries that did not experience Communist rule. So, for example, in the Netherlands and Sweden, respondents tend to be more tolerant, regardless of social class, than those in Eastern Europe, but class differences are more pronounced in these countries than in most Eastern European countries where classes tend to have similar average opinions. It is clear, however, that economic development and democratic tradition do not tell the whole story. Notable exceptions such as the Czech Republic, which has a high level of general tolerance and large class differences despite low per capita GDP and a Communist past, and the U.S., which has relatively low tolerance and small class differences despite immense wealth and not having experienced Communist rule, suggest that income inequality may negatively influence attitudes toward homosexuality.

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We now turn to the multilevel logit models, the coefficients for which are displayed in Table 2. We begin by assessing Model 1, which includes only the individual-level predictors but allows for a random country-level intercept and random effects for variation within countries across survey years. As we see from the *random effects* panel of the table, the variance around the intercept is statistically significant, indicating that it is important to include it in the model. In other words, there is country-level variation in terms of the probability that individual respondents considered homosexuality justifiable. We can also see that all of the individual-level predictors affect attitudes in the expected manner. Consistent with previous research, most likely to find homosexuality justifiable are women, the young, those who are less religious, the highly educated, the unmarried, and those from larger communities. The most important finding from Model 1 for the present study, however, is the statistically significant social class effect. All other classes tend to be more liberal than the working class, but professionals tend to be the most liberal. The odds that professionals will hold that attitude that homosexuality is justifiable are 1.43 times ($e^{.36}=1.43$) as high as the odds for the working class. Of course, we have yet to consider the impact of country-level variables, which could potentially change these effects.

[Table 2 about here]

Theories about modernization and economic growth, especially as put forward by Inglehart (1997), suggest that economic development has a positive effect on liberal attitudes generally, and thus on attitudes that homosexuality is justifiable. Model 2 provides preliminary support for this theory, as indicated by the positive and statistically significant coefficient for per capita GDP. It is also clear that including per capita GDP significantly improves the model fit, as both the AIC and BIC measures of fit decline from Model 1, and both the country and year

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variance components are sharply reduced. Like most tests of the postmaterialist thesis, however, this model is limited in that it fails to consider both whether the per capita GDP effect reflects the omission of another important lurking contextual variable, and whether the effects of per capita GDP differ according to social class. We see these results as tentative, then, and use them only as a benchmark to which we will compare competing models that consider other factors usually ignored by the postmaterialist thesis.

Recall that Model 3 improves on Model 2 by including measures of post-Communist regime and income inequality. This model gives quite radical findings compared to Model 2 with respect to per capita GDP. The coefficient for GDP is one fifth the size (.015 versus .075) what it was for Model 2, and no longer statistically significant. We explored the possibility of nonlinear effects by fitting a quadratic trend for GDP per capita and transforming GDP by taking the logarithm. Neither of these methods suggested that GDP was an important predictor. From this model that does not include cross-level interactions, we would conclude that GDP does not affect attitudes. As we shall see later, however, the explanation changes once again when the cross-level interactions are included.

Turning to the effects of post-Communist and the Gini coefficient, we see that they do affect attitudes in the ways that we expected. People from former Communist countries tend to be less likely to find homosexuality justifiable than do those from countries that have never experienced Communist rule. This finding lends further support to Inglehart and Baker's (2000) claim that ex-Communist countries are on a different path than other nations. Our analysis contributes an additional finding, however, in that those living in societies characterized by a high degree of income inequality tend to be less liberal on the homosexuality issue than those living in societies with a lesser degree of income inequality. It is important to remember that

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these relationships exist despite that we control for per capita GDP. We will discuss these effects in further detail later, with respect to Model 4.

Recall that Model 4 builds on Model 3 by including the cross-level interaction between social class and each of the national context variables. Preliminary tests indicated that the interaction between Post-Communist and social class was not statistically significant, so it is excluded from the final model. On the other hand, social class did have a statistically significant interaction with both the Gini coefficient and GDP per capita in their effects on attitudes. Social classes tend to converge in attitudes toward homosexuality as income inequality increases and diverge in attitudes as GDP per capita increases.[5] Given the complexity of the model, it is difficult to see from the coefficients alone exactly how the interaction works. As a result, we now explore fitted values from Model 4.

Figure 3 shows the fitted probabilities of having the attitude that homosexuality is justifiable for each of the social classes through the range of the Gini coefficient for both former Communist societies and those societies that have never experienced Communist rule. Aside from these variables—which are allowed to vary through their ranges—all other predictors are set to their means for quantitative variables or proportions for categorical variables. In other words, the figures show the fitted probabilities for a "typical" respondent. It is clear that for all social classes, the probability of feeling that homosexuality is justifiable declines sharply as the level of income inequality increases but class differences disappear as the level of income inequality in the society increases. In relatively equal societies, professionals tend to be much more likely to be liberal than the working class, with other classes falling in between. In very unequal societies, however, there are no discernable class differences. Although the general

patterns are the same for post-Communist and never Communist societies, on average, those

living in the former are far less likely to feel that homosexuality is justifiable.

[Figure 3 about here]

The findings are most remarkable with respect to the interaction between social class and

GDP per capita shown in Figure 4. The differences in slopes for the lines for the various social

classes clearly indicates that there are large differences according to social class in terms of how

economic development affects attitudes. Contrary to what was found in Models 2 and 3, we now

find that Inglehart's theory that per capita GDP is an important predictor of post-materialist

values holds, *but not equally for all*. Confirming our theoretical proposition, per capita GDP

matters most for the middle and upper classes (i.e., professionals and managers), where there is a

strong positive effect. On the other hand, there is virtually no indication that GDP matters for the

manual working class. This finding pertains to both post-Communist societies and countries that

have never experienced Communist rule (in both cases the effect is not statistically significant).

[Figure 4 about here]

Discussion and Conclusions

Using survey data and national-level measures for 38 democracies, we considered how

economic conditions are related to attitudes towards homosexuality. We were initially guided by

the postmaterialist thesis, which claims economic development is a major contributor of the shift

to more liberal values in modern industrial societies. Consistent with this thesis, we found that

per capita GDP had a strong positive influence on tolerance to homosexuality when no other contextual variables were included in our statistical models. When income inequality and democratic tradition were controlled for, however, the effects of per capita GDP disappear. Still, further analysis that allowed per capita GDP to interact with social class indicates that economic development does matter for professionals and managers—even after controlling for the other national context variables—but not for the working class. We also found that greater levels of income inequality are strongly associated with less tolerant attitudes toward homosexuality, regardless of social class, though class differences in attitudes decrease as inequality increases. These relationships hold for both post-Communist and non-Communist nations, although overall levels of tolerance of homosexuality tend to be higher in the latter. Taken together these findings suggest that common interpretations of the causes of postmaterialist values require further qualification. More specifically, they suggest that both *absolute* and *relative* economic security affect individual attitudes: overall economic prosperity promotes tolerance among those with good economic standing; high levels of inequality suppress tolerance among all economic groups.

Perhaps the most important general implication of these findings is that cross-national studies of attitudes and values are misguided to automatically proceed as if national populations are homogenous in terms of how they react to structural conditions. How national economic factors influence an individual will depend, at least in part, on the individual's position in the economy. As discussed earlier, the post-materialist thesis argues that economic development (usually measured by per capita GDP) and a concomitant decline in social class identities are important contributors for the growth of postmaterialist values. While economic development is certainly important, it alone does not provide a satisfactory explanation for why social class

differences in attitudes exist in many societies even when per capita GDP is very high. Our results indicate that the postmaterialist thesis does not apply equally to all groups—economic development is important, but mostly to those who gain most from it.

Like Inglehart and Baker (2000), we also find that former Communist rule has a strong negative effect on attitudes toward homosexuality. Unlike Inglehart and Baker, however, our findings indicate that the influence of past Communist rule on attitudes is independent of the effects of economic development. This suggests that there are cultural differences in attitudes according to democratic transition that have nothing to do with economic development. Consistent with previous research on social trust in Eastern Europe (see, for example, Putnam, 1993; Inglehart, 1999; Rose, 1994), we speculate that experience of oppressive governments in former Communist countries has led to cultures that have less tolerance for people who differ from themselves.

We consider two explanations for the relationship we find between inequality and attitudes toward homosexuality. The first is that this is a direct relationship; that is, inequality in itself has a negative impact on tolerance. The greater social distance between the "haves" and the "have nots" may undermine social trust and produce more negative attitudes towards minority groups of all kinds, including lesbian and gay people. The second possibility is that both inequality and intolerance are the products of public policy. In other words, social policies that produce low levels of inequality, such as the progressive taxation and universal benefits of social democratic states, may also encourage tolerant attitudes. In contrast, policies that produce greater inequality, such as limited welfare benefits and private health care systems, may also produce social anxiety and distrust that is expressed in negative attitudes toward minority groups. The relationship between individual-level social class and national-level income inequality adds

another dimension to this latter possible explanation. We find that inequality has a stronger impact on professionals and managers than working class and routine non-manual workers, such that as inequality increases, attitudes are more negative but even more so for those who are better off financially. If policy is the driving force behind these negative attitudes, this suggests that the very policies that improve the financial positions of the better off are the ones that limit their capacity to be tolerant. Still, further research and new data are needed to test this hypothesis. In any event, given that tolerance is generally considered as important to the health of democracy (see Gibson 1989), these findings have important implications for policy makers.

It is likely that other postmaterialist issues would give similar results to those presented in this paper. In fact, Inglehart and Abramson (1999) show attitudes towards homosexuality to be highly related to the commonly used postmaterialist index that is constructed from several other issues. Still, it is also possible that less salient political issues are less affected by economic conditions. This implies, then, that it is important to treat the individual items in the postmaterialist index separately. Most research on postmaterialist values does not distinguish between attitudes regarding racial tolerance, gender equality, environmentalism, or homosexuality, and thus the possibility that there are differential effects according to particular issues is seldom tested. While correlated, these attitudes are not identical to each other, nor do they change at the same rate over time (Persell, Green and Gurevich 2001; Treas 2002), suggesting an opening for future research to examine possible differential effects of economic development and income inequality on other postmaterialist issues.

In conclusion, our findings do not discount the postmaterialist thesis, but rather suggest that it needs further qualification. That is, our findings are consistent with the postmaterialist idea that wealth frees individuals from material concerns, allowing them to give attention to other

issues. Our major contribution to the theory is the consideration of inequality within nations. Our results indicate that both national and individual economic position must be considered. More specifically, income inequality within nations is as important as economic inequality across nations. As countries develop economically, those who benefit the most (i.e., the professional and managerial classes), tend to express greater tolerance towards homosexuality than their lower class compatriots. Although further research is required before we can generalize to other social and political attitudes, we expect that they will be similarly affected.

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Table 1

Descriptive information regarding the country-level variables for each country by survey year. Countries are ranked in descending order according to fewest "never justified" responses.

	Homosexuality Justifiable (percent)	Survey Year	Number of cases	GDP/ Capita	Gini	Post-comm.
Netherlands	90.5	1990	614	25,000	.266	No
		2000	969	30,500	.248	
Sweden	85.1	1990	371	28,100	.229	No
		1995	818	28,100	.221	
		2000	612	31,500	.252	
Switzerland	80.7	1995	1004	43,600	.280	No
Czech Republic	74.9	1990	764	5,270	.207	Yes
Denmark	71.8	1990	659	31,800	.236	No
		2000	946	37,600	.247	
Finland	70.6	1995	651	25,400	.217	No
		2000	915	30,100	.247	
Spain	69.8	1990	2237	14,000	.303	No
		1995	938	14,900	.353	
		2000	2117	16,800	.340	
Australia	69.2	1995	1799	20,600	.310	No
Canada	69.2	1990	1171	19,200	.281	No
		2000	1782	22,200	.304	
Norway	68.8	1990	631	28,900	.231	No
		1995	1068	33,900	.238	
Austria	67.9	1990	489	27,500	.227	No
		2000	1455	32,600	.260	
Germany	67.0	1990	2168	28,000	.257	No
		1995	1803	30,100	.272	
Belgium	63.1	1990	1738	25,700	.228	No
		2000	1752	29,900	.277	
Italy	62.9	1990	1145	18,200	.297	No
		2000	1867	20,300	.340	
USA	54.8	1990	1162	26,100	.338	No
		1995	1077	27,700	.355	
		2000	1112	31,000	.368	
Ireland	54.0	1990	630	15,100	.328	No
		2000	824	25,600	.323	
France	53.9	1990	599	26,000	.287	No
Slovakia	49.4	1990	344	4,220	.189	Yes
Britain	49.1	1990	1221	18,100	.336	No
Slovenia	48.6	1990	700	11,200	.249*	Yes
		1995	928	9,420	.249*	
		2000	950	11,200	.249	

Table 1 continued

Descriptive information regarding the country-level variables for each country by survey year. Countries are ranked in descending order according to fewest "never justified" responses.

	Homosexuality Justifiable (percent)	Survey Year	Number of cases	GDP/ Capita	Gini	Post-comm.
Portugal	46.5	1990	701	9,960	.385*	No
		2000	857	12,400	.385	
Croatia	45.1	1995	559	4,060	.290*	Yes
		2000	973	4,890	.290	
Poland	39.7	1995	1087	2,870	.318	Yes
		2000	1012	3,540	.293	
Estonia	38.8	1995	929	2,840	.361*	Yes
		2000	874	3,520	.361	
Bulgaria	37.2	1990	757	1,450	.319*	Yes
		1995	810	1,560	.319*	
		2000	876	1,720	.319	
Belarus	35.3	1995	1688	1,370	.304*	Yes
		2000	882	1,790	.304	
Latvia	32.1	1990	296	1,900	.324*	Yes
		1995	1113	2,420	.324*	
		2000	889	3,610	.324	
Moldova	31.2	1995	858	353	.362*	Yes
		2000	876	404	.362	
Bosnia Hercegovia	29.7	1995	1086	546	.262*	Yes
		2000	1184	1,550	.262	
Ukraine	29.2	1995	2243	825	.290*	Yes
		2000	1066	936	.290	
Armenia	26.6	1995	1659	442	.379	Yes
Lithuania	23.7	1990	898	2,020	.319*	Yes
		1995	907	2,450	.319	
Macedonia	22.0	1995	831	2,260	.282*	Yes
		2000	1020	2,440	.282	
Russia	20.7	1990	1377	2,660	.395	Yes
		1995	1743	2,670	.447	
		2000	2154	4,290	.434	
Georgia	20.0	1995	2170	503	.369	Yes
Hungary	16.9	1990	533	4,860	.283	Yes
		2000	926	5,140	.295	
Romania	15.5	1990	765	1,450	.303*	Yes
		2000	986	1,700	.303	
Azerbaijan	11.1	1995	1733	397	.365	Yes

*Information were unavailable for the relevant year; information for the following year were substituted

Table 2

Estimates for mixed models predicting attitude that "*homosexuality is justifiable*" at least sometimes in 38 democracies

|	Model 1	Model 2	Model 3	Model 4
Constant	-1.06 (0.12)***	0.04 (0.16)	1.35 (0.78)	1.28 (0.78)
Individual-level variables				
Gender (men)	-0.30 (0.02)***	-0.30 (0.02)***	-0.30 (0.02)***	-0.32 (0.02)***
Birth cohort				
Before 1920	0	0	0	0
1920-1939	0.60 (0.05)***	0.60 (0.05)***	0.60 (0.05)***	0.60 (0.05)***
1940-1959	1.16 (0.05)***	1.16 (0.05)***	1.16 (0.05)***	1.15 (.05)***
After 1960	1.60 (0.05)***	1.60 (0.05)***	1.60 (0.05)***	1.59 (.05)***
Religiosity	-0.45 (0.02)***	-0.45 (0.02)***	-0.45 (0.02)***	-0.46 (0.02)***
Education level				
Low	0	0	0	0
Medium	0.35 (0.02)***	0.35 (0.02)***	0.35 (0.02)***	0.34 (0.02)***
High	0.47 (0.03)***	0.47 (0.03)***	0.47 (0.03)***	0.50 (0.03)***
Social Class				
Managers	0.20 (0.02)***	0.20 (0.02)***	0.20 (0.02)***	0.26 (0.17)
Professionals	0.36 (0.03)***	0.38 (0.03)***	0.38 (0.03)***	0.74 (0.20)***
Routine nonmanual	0.31 (0.03)***	0.31 (0.03)***	0.31 (0.03)***	0.23 (0.19)
Working class	0	0	0	0
Married	-0.23 (0.02)***	-0.23 (0.02)***	-0.23 (0.02)***	-0.23 (0.02)***
Small town	-0.29 (0.02)***	-0.29 (0.02)***	-0.29 (0.02)***	-0.29 (0.02)***
Country-level variables				
GDP/capita ($1000s)	--	0.075 (0.007)***	0.015 (0.015)	0.010 (0.015)
Post-communist	--	--	-1.39 (0.37)***	-1.37 (0.37)***
Gini coefficient	--	--	-6.16 (1.73)***	-5.69 (1.75)**
Class*GDP interaction				
Managers	--	--	--	0.010 (0.002)***
Professionals	--	--	--	0.019 (0.002)***
Routine nonmanual	--	--	--	0.012 (0.002)***
Class*Gini interaction				
Managers	--	--	--	-0.69 (0.50)
Professionals	--	--	--	-1.86 (0.59)**
Routine nonmanual	--	--	--	-0.27 (0.56)
Random Effects (variance components)				
Country	1.18***	0.68***	0.52***	0.51***
1995	0.83***	0.97***	1.21***	1.20***
2000	0.65***	0.58***	0.78***	0.78***
AIC	89,162	89,121	89,114	88,995
BIC	89,358	89,325	89,337	89,293
Number of individuals	81,348	81,348	81,348	81,348
Number of countries	38	38	38	38

*P-value<0.05; **P-value<0.01; *P-value<0.001

Figure 1

Distribution of attitudes toward homosexuality (1=never justifiable; 10=always justifiable) in 38 countries. Countries are ranked in descending order according to fewest "never justified" responses. Each row displays the proportion of cases in each response category for a particular country. The darker the shading, the greater the proportion of respondents falling into the category.
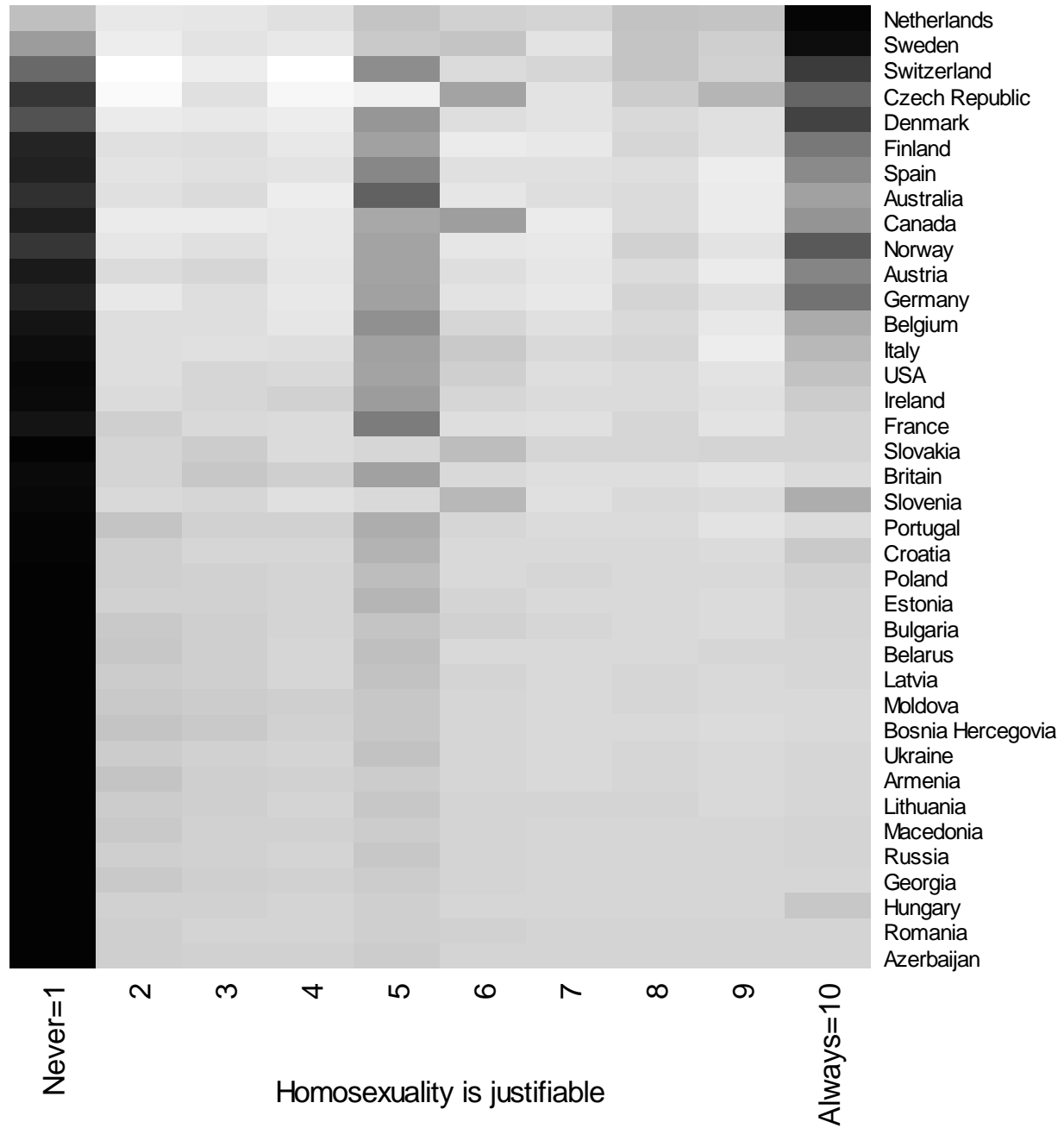
Figure 2
Class differences in acceptance of homosexuality determined from models fitted to each country separately (Model 1). Effects are controlling for gender, birth cohort, religiosity, education, marital status and community size.
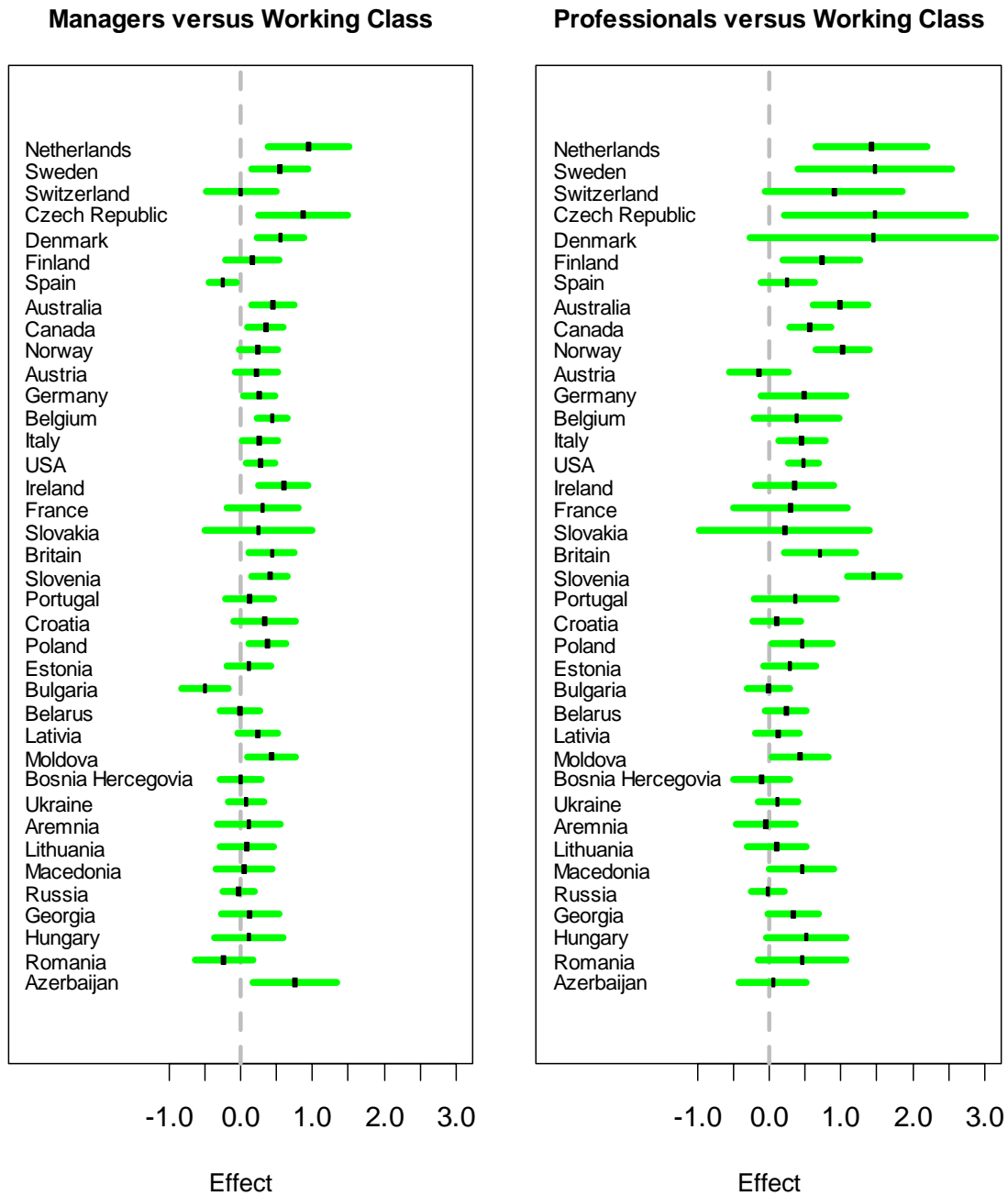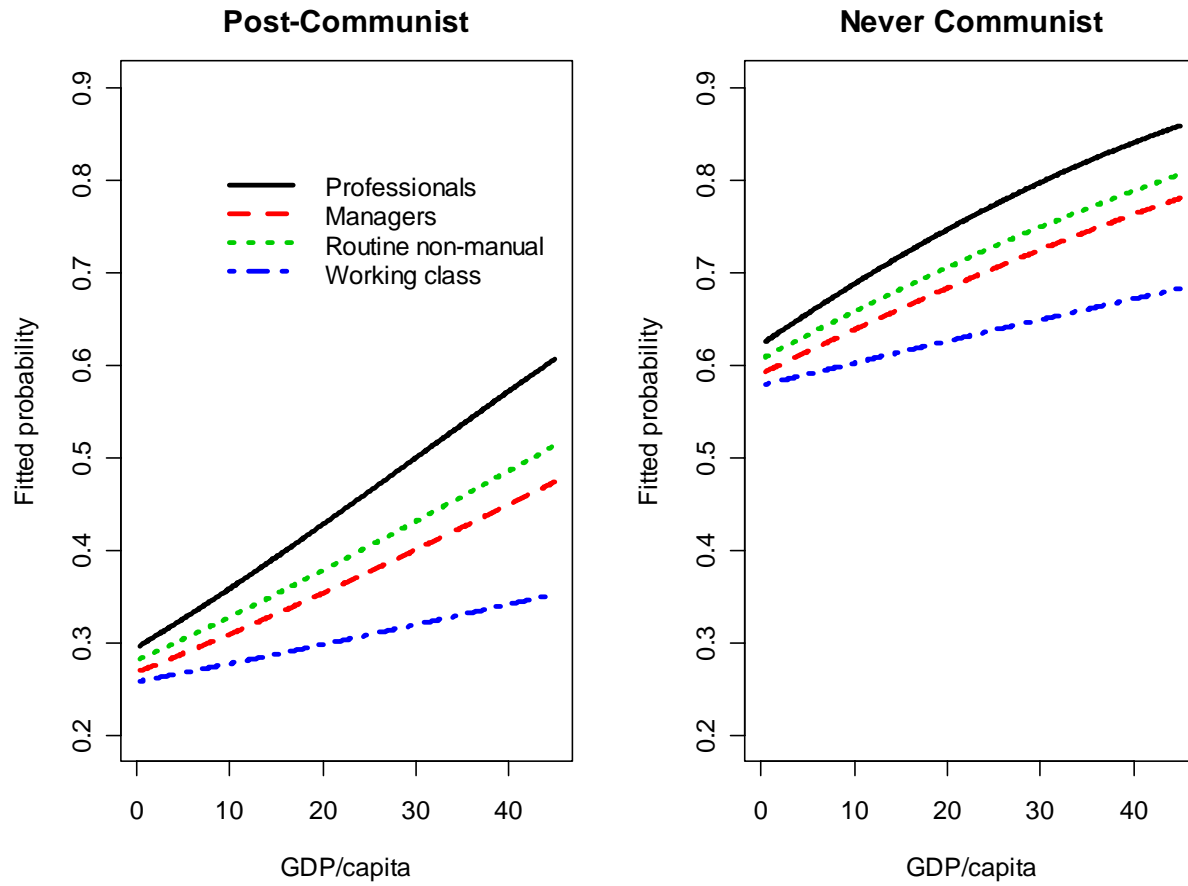
Figure 3
Fitted probability of responding that homosexuality is at least sometimes "justifiable" according to the level of income inequality (measured by the Gini coefficient), by social class and post-communist versus never communist societies.

Figure 4
Fitted probability of responding that homosexuality is at least sometimes "justifiable" according to GDP per capita (measured in $1000s), by social class and post-communist versus never communist societies.

Post-Communist

Professionals
Managers
Routine non-manual
Working class

Fitted probability

GDP/capita

Never Communist

Fitted probability

GDP/capita

ENDNOTES

[1] Although we do not report the coefficients in the models we present later, we include an "other" category for those from whom data are missing, students, and people not working outside of the home (including those who are unemployed and homemakers).

[2] We were able to obtain a Gini measure that was close to the 2000 survey for all countries. For some of the previous years, however, we used the 2000 value because reliable data were unavailable for the year in question. This practice is acceptable given that most variation in income inequality is cross-national rather than temporal (see Li, Squire, and Zou 1978).

3 For the German data, only respondents from West Germany are included in the 1990 data but the 2000 data includes respondents from both West Germany and East Germany. Since we could not distinguish respondents from the two regions, we classify all of them as having never experienced Communist rule. In order to ensure this coding did not unduly influence the results, we also fit the statistical models excluding the German data. The results were nearly identical and thus the choice of coding had no substantive impact on the conclusions.

[4] We attempted to specify random slopes for important predictors and for the control variables but the complexity of the model prevented the estimation process from converging on stable estimates. As a result, the social background control variables are entered as fixed effects.

[5] We also explored for the possibility that income inequality and economic development had different effects according to democratic transition. These interactions were not statistically significant, however, and thus were not included in the final models.