
Genes, Culture, Democracy, and Happiness

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Growing evidence that an individual's happiness level is largely shaped by genetic factors has aroused widespread interest. Neuroscientists have found close linkages between reported happiness and dopamine and serotonin levels in the brain, and they have found that genes seem to play a major role in regulating these levels (Ebstein et al. 1996; Hamer 1996). Furthermore, a recent study of over 3,000 identical and fraternal twins (some raised together and some apart) found that genetically identical twins reported similar levels of happiness even when they had different life experiences—but fraternal twins did not (Lykken and Tellegen 1996). Evidence of genetic influences on well-being is powerful.

These findings are especially significant because previous studies have found that differences in income, education, occupation, gender, marital status and other demographic characteristics explain surprisingly little of the variation in people's levels of subjective well-being. As one would expect, those with higher incomes report somewhat higher levels of happiness and life satisfaction than those with lower incomes, but the differences are small, generally explaining no more than 4 percent of the variation—and education, occupation, age, religiosity, and gender explain even less (Andrews and Withey 1976; Inglehart 1990; Myers and Diener 1995). This persistent finding has been explained in terms of “aspiration adjustment” and “set-point” models, both of which postulate as follows: (1) Recent changes, such as receiving a raise or losing one's job, can have a major impact on an individual's well-being—but that people's aspirations adjust to their level of achievement. After a year or so, they report about the same level of well-being as they did before the change, returning to the individual's normal “set-point.” (2) Different individuals have different set-points. Year after year, some people display higher levels of well-being than others (Costa, McCrae, and Zonderman 1987).

As in earlier studies, Lykken and Tellegen (1996) find only modest variation in well-being across standard social background variables, but they find strong evidence of genetic effects. They conclude that the differences in individuals' "set points" reflect genetic influences. Among the twins they studied, socioeconomic status, educational attainment, family income, marital status, or religious commitment could not explain the more than about 3 percent of the variance in well-being—but they found that from 44 to 52 percent of the variance in well-being was linked with genetic variation. "The reported well-being of one's identical twin, either now or 10 years earlier, is a far better predictor of one's self-rated happiness than is one's own educational achievement, income, or status" (Lykken and Tellegen 1996, p. 189). Press reports of these findings suggested that happiness is almost entirely determined by one's genes.¹

We find the evidence of genetic effects convincing. But this article demonstrates that cultural and historical factors also play powerful roles. These factors have received little attention in this discussion because cultural variation is—as the very concept implies—relatively constant *within* a given society but shows relatively great variation *between* different societies. Virtually all of the research on genetic influences on subjective well-being (including the research on twins) has been carried out within single societies where subjective well-being varies within a relatively narrow range. Only a small minority of Americans, for example, describe themselves as unhappy or dissatisfied with their lives. However, as we will demonstrate, this is not the case in some societies. Similarly the U.S. public's mean life satisfaction rating is 7.7, near the top of a ten-point scale, but among the 64 societies examined here, the means range from 3.7 to 8.2. Because its relatively high baseline is a constant within the United States, it plays no part in any analysis based on U.S. data alone. Within the relatively narrow range of variation inside any given country, genetic factors may, indeed, account for most of the variance. But across the much broader range of cross-national variation, cultural differences seem to explain at least as much of the variance in well-being as do genetic factors. Let us examine the evidence.

Since 1973 the European Union has surveyed representative national samples of its member-countries' publics, asking questions about subjective well-being as well as other topics. Previous research indicates that a very effective measure of one's overall subjective well-being is provided by the question, How satisfied are you with your life as a whole? Would you say that you are very satisfied, reasonably satisfied, not very satisfied, or not at all satisfied with your life as a whole? Figure 7.1 shows

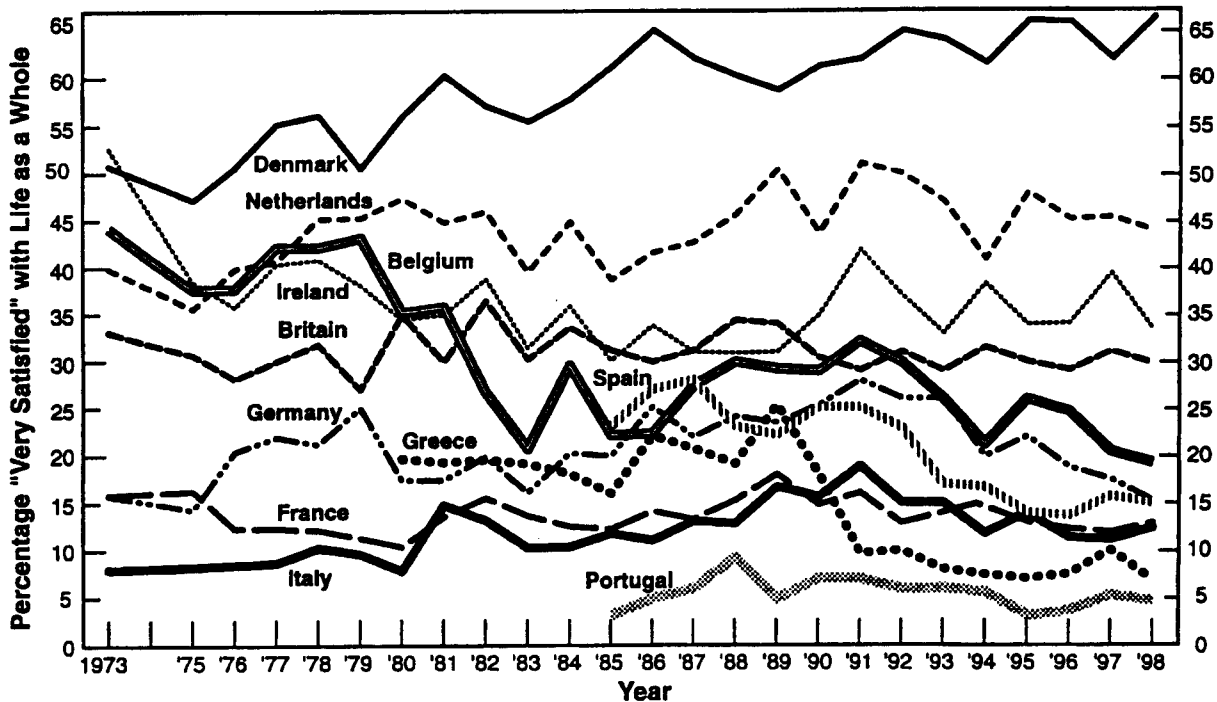


Figure 7.1

Cross-national differences in satisfaction with one's life as a whole, 1973–1998. Source: Euro-Barometer surveys carried out in each respective year.

the large and stable differences that exist in the life satisfaction levels of different societies. In the 1998 survey, for example, more than 65 percent of the Danish public described themselves as “very satisfied” with their lives as a whole; at the other end of the scale, only 5 percent of the Portuguese public said they were “very satisfied.” Year after year, the Danes are about five times as likely to report high levels of life satisfaction as the French or Italians, and about twelve times as likely to do so as the Portuguese.

Can these cross-national differences be attributed to translation problems? Perhaps the word “satisfied” in English is not equivalent to “satisfait” in French, or “sodisfatto” in Italian, or “zufrieden” in German, or “tilfreds” in Danish. If so, the French and Italians might show much lower levels of subjective well-being than the Danes simply because “satisfait” and “sodisfatto” imply a higher level of well-being than does “tilfreds.” This interpretation does not hold up under closer examination. As we will see shortly (see figure 7.2), the Swiss rank substantially higher than their counterparts speaking the same languages in France, Germany, and Italy—indeed, they rank as high as the Danes. The Swiss historical experience has been

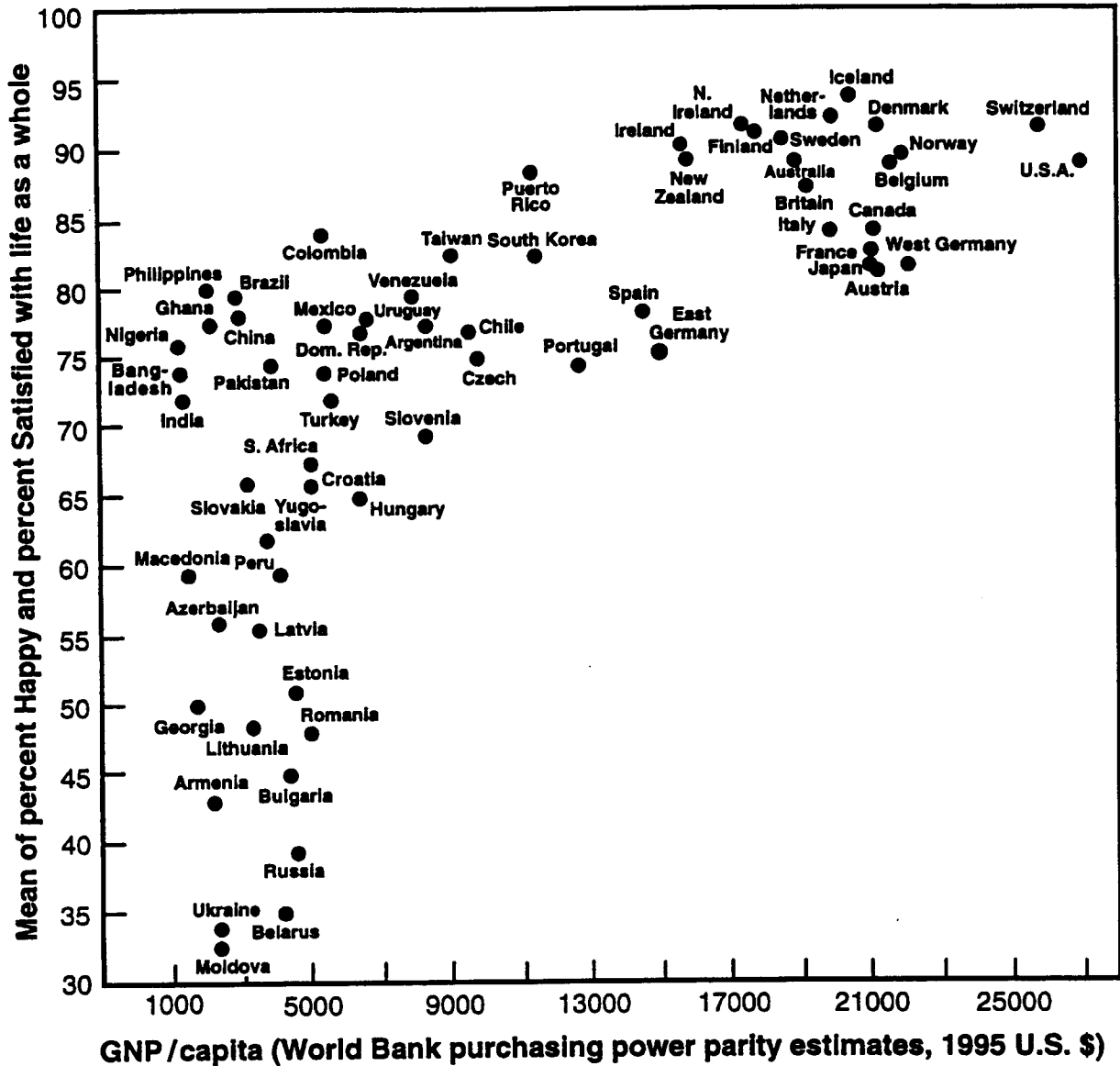


Figure 7.2
 Subjective well-being by level of economic development ($R = 0.70$, $N = 65$, $p < 0.0000$).
 Source: World Values Surveys; GNP/capita purchasing power estimates from World Bank, World Development Report, 1997.

quite different from that of their neighbors, and it seems to have shaped the Swiss culture's baseline level of well-being. Other comparisons point to similar conclusions: these cross-cultural differences are not artifacts of translation; they seem to reflect given societies' historical experiences.

Moreover these differences are relatively stable characteristics of given cultures: they don't simply reflect transient influences that have temporarily inflated or depressed the life-satisfaction levels of given societies. Throughout the twenty-five-year period covered by these surveys, the Danes have virtually always ranked highest in life satisfaction (and in happiness and other measures of subjective well-being): for the past twenty-five years from 50 to 65 percent of the Danish public has always described themselves as "very satisfied" with their lives as a whole. We find similar stability at the opposite end of the scale. Portugal was not included in these surveys until it joined the European Union. From that point on, her public has always manifested the lowest level of subjective well-being of any European Union society, with the percentage describing themselves as "very satisfied" never rising above 9 percent. Similarly throughout this twenty-five-year period the French and the Italians have always ranked relatively low: in both countries the percentage describing themselves as "very satisfied" virtually never rose above 15 percent but never fell to the Portuguese level. At the other end of the scale, the Dutch almost always rank as the second most satisfied public, immediately after the Danes, with 40 to 50 percent describing themselves as "very satisfied" with their lives throughout this twenty-five-year period. The Irish and the British generally come next, followed by the Germans and Spaniards who show lower levels of well-being, though never quite as low as the French or Italians. One of the eleven countries in figure 7.1 shows a significant and enduring decline: the Belgians consistently fell in the 35 to 45 point range in the 1970s, but in the early 1980s they dropped to the 20 to 30 point range and have remained there ever since. Nevertheless, the overall stability is impressive. Most publics show about the same level of well-being at the end of this twenty-five-year period as they did at the start: the correlation between each country's satisfaction level in the earliest available survey, and in the latest (1998) survey is 0.80. Even with only eleven cases, this is significant at the 0.003 level. The happiness levels of these societies show a similar pattern (among the 64 societies included in the World Values Survey, the correlation between happiness and life satisfaction is 0.81).

It seems that cultures, as well as individuals, have a normal baseline level of well-being that varies only moderately in response to current events. Do these cross-national differences reflect genetic differences? It seems unlikely. For one thing, we

observe a substantial and enduring decline in the set point of the Belgians, which is difficult to reconcile with a genetic interpretation: it implies that a sudden change in the Belgian gene pool must have taken place between 1979 and 1983. We find it far more plausible to attribute this decline to historic factors such as the pervasive malaise linked with interethnic conflicts that have afflicted Belgian society, leading to Belgium being divided into a federation organized along ethnic lines in 1993.

It is even more difficult to reconcile a genetic interpretation with the evidence shown in table 7.1, which shows the cross-national variation in subjective well-being levels among a much broader range of societies than the eleven West European countries just examined.² Table 7.1 shows the mean levels of happiness and life satisfaction in 64 societies on all six inhabited continents, as measured in the World Values Surveys (Inglehart, 1997). These 64 societies contain over 75 percent of the world's population, and they have nominal per capita incomes ranging from \$300 to about \$30,000. As this table shows, their happiness and life satisfaction levels differ tremendously. Even Portugal, which ranked lowest among the 11 societies in figure 7.1, ranks relatively high in this broader context. Although only about 5 percent of the Portuguese consider themselves "very satisfied" with their lives as a whole, about 75 percent of the Portuguese are at least fairly satisfied with their lives. This holds true of the publics of virtually all advanced industrial societies: at least three-quarters of their people consider themselves either "very happy" or "fairly happy," and at least three-quarters place themselves on the upper half of a ten-point scale, indicating that they are reasonably satisfied with their lives as a whole. In Denmark, Iceland, Finland, the Netherlands, and Switzerland, more than 90 percent of the public describe themselves as happy and satisfied with their lives as a whole.

But this does *not* hold true of the entire world. Previous research, mainly limited to advanced industrial societies, led to the conclusion that happiness is the norm throughout the world. It is not. In several of these societies, over half of the public described themselves as either unhappy or very unhappy, and over half described themselves as dissatisfied with their lives as a whole.

Cross-national variation in subjective well-being is strongly linked with the society's level of economic development, as figure 7.2 demonstrates. The global correlation between well-being and GNP in figure 7.2 is 0.70, which is significant at the 0.0000 level. This suggests that economic development has an important impact on human happiness. A genetic interpretation would require us to assume that the peoples of rich countries differ genetically from those of poor countries—and that the peoples of recently rich societies such as Japan, South Korea, and Taiwan have

experienced sudden genetic changes. Another view would be to assume that happiness causes a society to become rich. Few people would accept these assumptions. It is more plausible to conclude that the move from extreme poverty to prosperity has an effect on human happiness. This process is not linear, however. The correlation weakens as one moves up the economic scale. Above \$13,000 in 1995 purchasing power parity, there is no significant linkage between wealth and subjective well-being. The transition from a subsistence economy to moderate economic security has a large impact on happiness and life satisfaction, but above the level of Portugal or Spain, economic growth no longer makes a difference. Inglehart (1990) has argued that this reflects the change of values connected with economic growth.

Economic development is not the only factor shaping a society's baseline level of subjective well-being. This baseline or "set point" may reflect a society's historical past. Figure 7.3 singles out two historical factors that may be significant for a society's economic development. Virtually all societies that experienced communist rule show relatively low levels of subjective well-being, even when compared with societies at a much lower economic level, such as India, Bangladesh, and Nigeria. Those societies that experienced communist rule for a relatively long time show lower levels than those that experienced it only since World War II. Note in the figure that seven of the eight lowest-ranking societies are former members of the USSR.

In contrast, virtually all historically Protestant societies show relatively high levels of subjective well-being. A similar effect persists today in countries (the United States being an exception) where only small minority of the public regularly attends church. As Max Weber pointed out, Protestant societies were the first to industrialize, and although economic development now has spread throughout the world, Protestant societies still are relatively wealthy in large part because of this early lead. Interestingly societies that were shaped by *both* Protestantism and communism tend to show higher levels of subjective well-being than other formerly communist countries. Latvia and Estonia rank above other Soviet successor states, as does the former East Germany above the other formerly communist societies of Central and Eastern Europe.

Are the very low levels of well-being found in former USSR countries a permanent, possibly genetic feature of their societies, or are they a relatively recent characteristic linked with economic instability after the collapse of communism? Data from two recent World Values Surveys indicate that the peoples of these societies maintained low levels of well-being throughout the 1990s. Although it was extremely difficult to carry out cross-national surveys in most state socialist societies before the

Table 7.1

Happiness, life satisfaction, and subjective well-being in 65 countries (percentages "Happy," "Satisfied," and mean of the two)

	Latest survey	Happiness	Life satisfaction	Subjective well-being
Iceland	1990	97	91	94.0
Netherlands	1990	93	92	92.5
Denmark	1990	94	90	92.0
Northern Ireland	1990	93	91	92.0
Switzerland	1996	95	89	92.0
Finland	1996	92	91	91.5
Sweden	1996	95	87	91.0
Ireland	1990	93	88	90.5
Norway	1996	94	86	90.0
Belgium	1990	93	86	89.5
United States	1995	94	85	89.5
Australia	1995	94	85	89.5
New Zealand	1998	95	84	89.5
Puerto Rico	1995	91	86	88.5
Britain	1998	90	85	87.5
Italy	1990	86	83	84.5
Canada	1990	79	90	84.5
Colombia	1997	90	77*	83.5
West Germany	1997	84	82	83.0
Taiwan	1995	89	76	82.5
South Korea	1996	89	76*	82.5
France	1990	92	72	82.0
Japan	1995	90	74	82.0
Austria	1990	91	72	81.5
Ghana	1995	72	88	80.0
Venezuela	1995	93	66	79.5
Philippines	1996	93	66	79.5
Spain	1996	87	70	78.5
China	1995	84	72	78.0
Uruguay	1996	81	75	78.0
Argentina	1995	83	72	77.5
Brazil	1996	83	72	77.5
Pakistan	1997	83	72*	77.5
Mexico	1996	71	83	77.0
Chile	1996	80	74	77.0
Nigeria	1995	81	71	76.0
East Germany	1997	79	72	75.5

Table 7.1 (continued)

	Latest survey	Happiness	Life satisfaction	Subjective well-being
Hungary	1981	78	71	74.5
Portugal	1990	73	76	74.5
Dominican Republic	1996	74	75	74.5
Poland	1996	86	62	74.0
Bangladesh	1997	85	63	74.0
India	1996	77	67	72.0
Turkey	1996	90	54	72.0
Tambov (Russia)	1981	64	76	70.0
Czech Republic	1990	73	66	69.5
Slovenia	1995	74	65	69.5
South Africa	1996	79	56	67.5
Croatia	1995	70	62	66.0
Hungary	1998	78	52	65.0
Hungary	1990	68	56	62.0
Peru	1996	63	61	62.0
Bosnia	1997	76	47	61.5
Yugoslavia	1996	71	51	61.0
Romania	1990	62	57	59.5
Azerbaijan	1995	78	41	59.5
Macedonia	1996	63	49	56.0
Slovakia	1990	52	59	55.5
Latvia	1996	71	36	53.5
Estonia	1996	65	37	51.0
Georgia	1996	65	35	50.0
Lithuania	1996	57	40	48.5
Russia	1990	52	44	48.0
Bulgaria	1998	57	33	45.0
Armenia	1995	57	29	43.0
Russia	1995	51	28	39.5
Tambov (Russia)	1995	47	25	36.0
Belarus	1996	46	24	35.0
Ukraine	1996	48	20	34.0
Moldova	1996	44	21	32.5

Source: World Values Surveys.

Notes: SWB obtained as the mean of happiness and life satisfaction. An * indicates that the score is estimated from the ranking of the other variable. Hungary and Russia in bold type show the effect of the collapse of communism in data from 1981, 1990–91, and 1995–98. (Tambov oblast in 1981) Clearly there was much more change there than in the noncommunist countries.

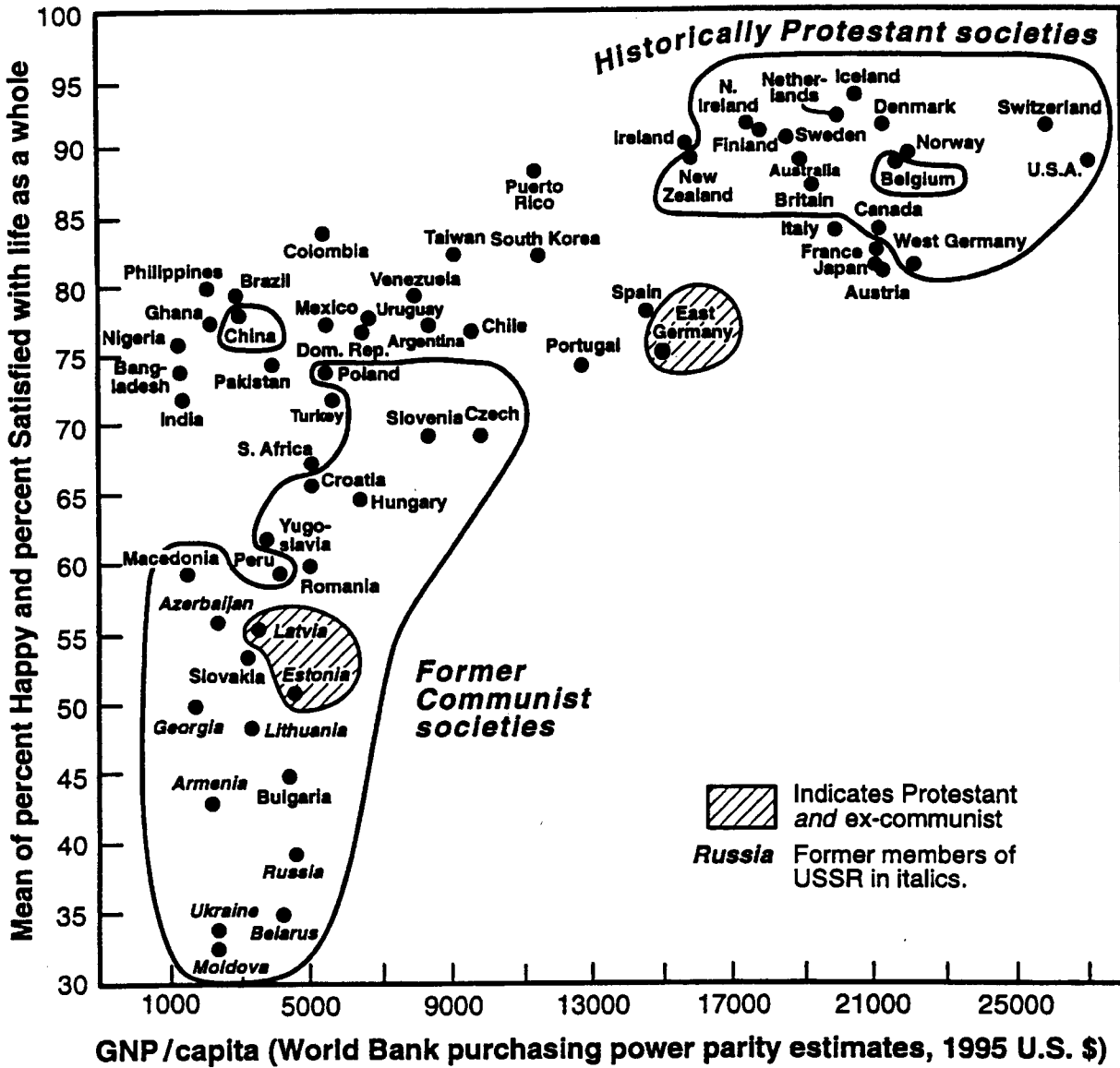


Figure 7.3
 Subjective well-being by level of economic development and historical heritage of given societies.

collapse of communism between 1989 and 1991, the World Values Survey group was able to carry out two such surveys in the 1980s: one in Hungary, and one in Tambov oblast, which our Soviet colleagues selected as a region that was reasonably representative of the Russian republic as a whole. The Hungarian data place that country's public at 74.5 on our well-being axis in 1981—a level comparable to that of Bangladesh or Turkey (see table 7.1). In the 1990 survey the Hungarian level of well-being dropped to 62.5, which is below the level of any noncommunist society except Peru (table 7.1). In short, the Hungarians already ranked lower than other industrial societies in 1981, seven years before the end of communist rule. By 1990 subjective well-being in Hungary had fallen even lower, but a low level was present well before the collapse of communism.

The only other formerly communist society for which our time series reaches back before the collapse of communism is Russia, and that series depends on our willingness to accept the 1981 survey in Tambov oblast as representative of Russia. It was not possible to perform the 1981 World Values Survey throughout Russia, but our Soviet colleagues did carry it out in Tambov oblast, a region that they considered representative of Russia as a whole. In order to verify this assumption, we surveyed Tambov oblast again in 1995, along with a separate survey of the Russian republic. The results from Tambov and Russia in 1995 are similar: Russia ranks 61st and Tambov ranks 62nd among the societies surveyed, with only Belarus, Ukraine, and Moldova ranking lower in well-being. Our Russian colleagues' belief that Tambov was reasonably representative of Russia as a whole seems justified.

Figure 7.4 plots the trajectory of subjective well-being in Russia from 1981 to 1995, using Tambov oblast as a stand-in for Russia in 1981. The results indicate that the subjective well-being of the Russian people was even lower than that of the Hungarians in 1981, and below that of Nigeria, Bangladesh, Turkey, and India. We suspect that twenty years earlier Russia's level of well-being probably was higher, but by 1981 she was experiencing rising alcoholism, absenteeism, and other symptoms of demoralization. The subjective well-being of its people was lower than that of countries with a fraction of the income. From this already low level, Russian subjective well-being fell sharply, so that by 1990 the Russians manifested extreme malaise. Over half the population said they were dissatisfied with their lives as a whole. Within a year the communist system had collapsed, and the Soviet Union had broken up into fifteen successor states. Well-being continued to fall after the collapse, and in 1995 the overwhelming majority of the population said they were dissatisfied with their lives. As we have seen, life satisfaction is normally very stable

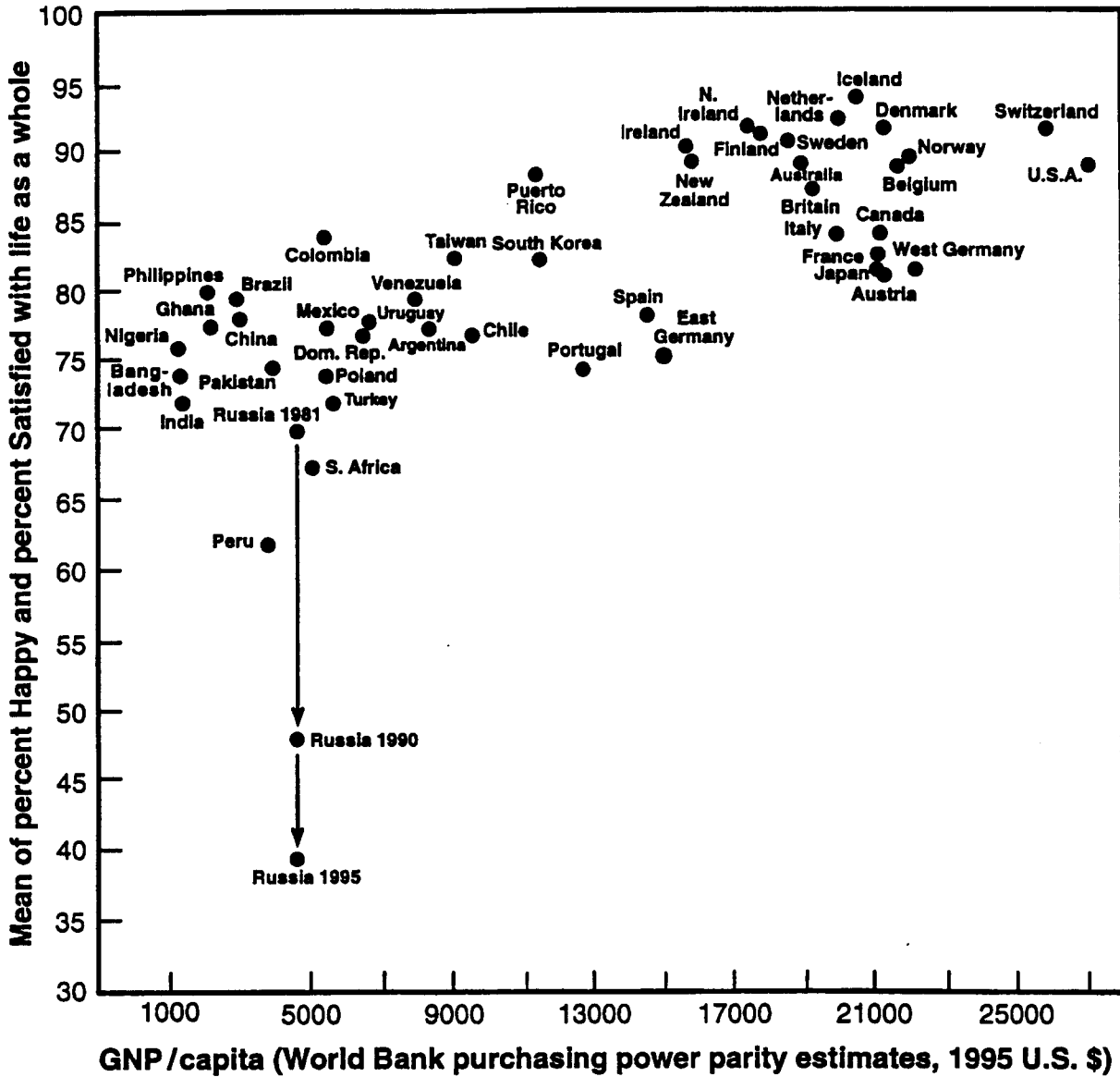


Figure 7.4
 Collapse of communism and the decline of subjective well-being in Russia. The correlation between GDP/capita and subjective well-being, omitting the former communist societies, is $r = 0.74$. Source: World Values Surveys. Data for Russia in 1981 from Tambov oblast, 1981.

in advanced industrial societies. But it can and does show sharp declines—and it seems significant that in the Belgian case, a comparatively mild decline was followed by splitting the state into a federation. In the case of the formerly communist societies, a much sharper decline was followed by the collapse of the political and economic systems, and the breakup of the Soviet Union, Czechoslovakia, and Yugoslavia into separate countries. The sharp decline in subjective well-being experienced by the Russian people since 1981 is impossible to reconcile with a genetic interpretation of the cross-national differences: it must reflect historical events. Diener, Suh, Lucas, and Smith (1999) also mention the existence of cross-national differences as indicating the presence of environmental effects that cannot be genetic.

Subjective Well-being and Democracy

It is significant that in both the Belgian and the Soviet cases, sharp declines in subjective well-being *preceded* major constitutional changes, rather than following them. Changes in a society's level of well-being are not merely the result of institutional factors: they can lead to institutional changes. A society's level of subjective well-being is of more than merely academic interest: it is intimately related to the legitimacy of the socioeconomic and political system, as we have argued elsewhere (Inglehart 1997, pp. 160–215). In the long run, if people feel that their lives have gone well under a given regime, it helps endow those institutions with legitimacy. But conversely, if the subjective well-being of an entire society falls sharply below its normal baseline, it can destabilize the entire sociopolitical order. Major changes like this are rare. Apart from the Belgian and Soviet cases, all the evidence points to continuity over time. But it seems that a sharp change in subjective well-being can have important societal-level consequences.

Historical evidence suggests that a sharp decline in subjective well-being can undermine a society's most basic institutions. But conversely, high levels of subjective well-being are conducive to the survival of democratic institutions. Thus deep malaise in Weimar Germany led to the collapse of democracy, but a rising sense of well-being linked with West Germany's postwar economic miracle helped legitimize her newly established democratic institutions.

New evidence from the World Values Surveys supports the hypothesis that a society's prevailing level of subjective well-being is closely linked with the flourishing of democratic institutions. Figure 7.5 shows the relationship between our index

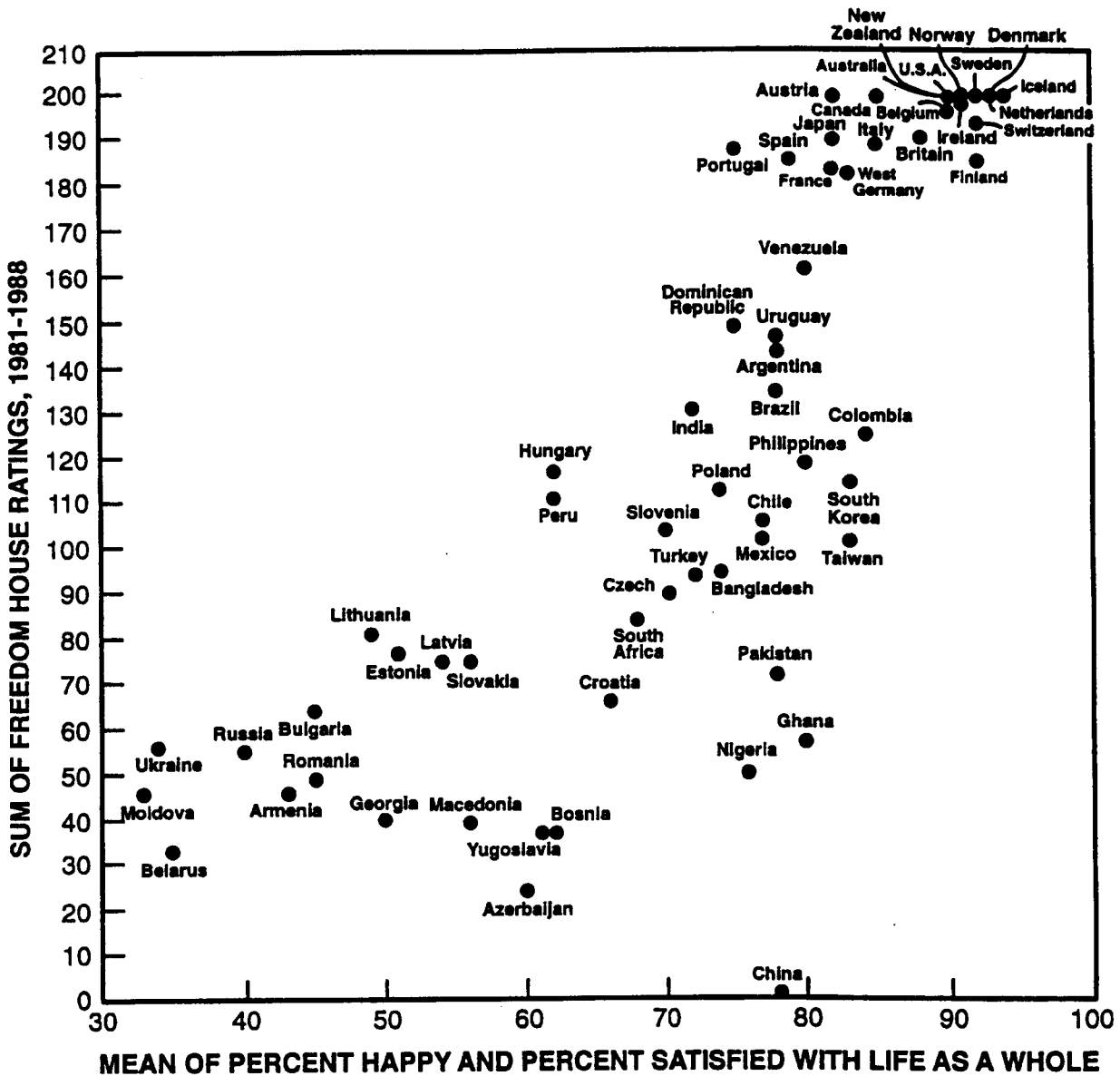


Figure 7.5
 Subjective well-being and democratic institutions ($r = 0.78, N = 62, p = 0.0000$). The vertical axis shows the sum of the Freedom House ratings for civil liberties and political rights. Since these ratings give high scores for low levels of democracy, we reversed polarity by subtracting these sums from 236 (China, which had the maximum score of 235, has a score of 1 after this transformation). The horizontal axis reflects each public's mean factor score on happiness and overall life satisfaction and subjective well-being. Source: Freedom House surveys reported in successive editions of *Freedom in the World*; survey data from the 1990 and 1995 World Values Surveys.

of subjective well-being and the extent to which that society has democratic institutions, as indicated by the Freedom House annual ratings of political rights and civil liberties (Freedom House 1982–1999). The vertical axis reflects the sum of each society's scores from 1981 to 1998, transformed so that high scores reflect high levels of political rights and civil liberties.

A society's level of subjective well-being is closely linked with the flourishing of democratic institutions. The correlation is 0.78, which is a remarkably powerful relationship considering that the two variables are measured at different levels and come from completely different sources. But what is the causal direction? It is implausible that certain nationalities are genetically predisposed to be happy and democratic; it seems more likely that these differences reflect the fact that the nation is a key unit of shared historical, political, and economic experiences. But what specific factors shape these cross-cultural differences?

One interpretation of figure 7.5 may be that democratic institutions cause a society to have high levels of subjective well-being. This interpretation is attractive because it provides a strong advertisement for democracy: "Adopt democratic institutions and live happily ever after."

Unfortunately, reality does not seem to be quite that simple. Democratic institutions do not necessarily make a people happy: history furnishes compelling examples. Democratic institutions did not make the people of Weimar Germany happy—quite the contrary, there is ample evidence that they experienced desperation. Similarly subjective well-being has not risen since Russia adopted free elections in 1991, but has fallen sharply: economic decline, ideological disillusionment, and high crime rates seem to have had more impact on the well-being of the Russian people than the move toward democracy. The same holds true of most other postcommunist societies: they have experienced *declining* subjective well-being during the 1990s, despite democratization. Conversely, Freedom House ranks China as the most authoritarian society among the 64 countries included in the World Values Surveys, but the Chinese public shows a higher level of subjective well-being than any other society that has experienced communist rule. China, unlike other formerly communist states, has moved toward a market economy without liberalizing her political system. If democratic institutions determined happiness, China should have the unhappiest public of all. But in fact, the Chinese show higher levels of well-being than less authoritarian societies, and they rank above some democracies. Although the lack of democracy has given rise to frustration and resistance, China's remarkably high levels of economic growth since 1978 seem to have more than offset the lack

Table 7.2
Regression analysis: Subjective well-being

Independent variables	Model 1	Model 2	Model 3	Model 4
1995 GNP/capita, PPP estimates (1,000s)	.459* (.223)	.429* (.214)	.738**** (.135)	.921**** (.120)
Number of years under communist rule	-.200**** (.048)	-.224**** (.046)	-.269**** (.040)	-.253**** (.040)
Percentage of workforce in industrial sector	-.373*** (.110)	-.358*** (.105)	-.356** (.107)	-.380*** (.109)
Historically Protestant dummy variable (1 = Protestant)	4.48* (1.80)	4.23* (1.77)	4.60** (1.77)	—
Freedom House democracy scores (1972–1998)	-.053* (.026)	-.046 (.025)	—	—
Educational enrollment, percentage in 1st, 2nd, and 3rd levels	-.041 (.091)	—	—	—
Adjusted R ²	.801	.807	.792	.780
N	102	105	105	105

Sources: World Values Survey; GNP/capita and percentage of workforce in industry from World Bank, *World Development Report*, 1997; educational enrollment from United Nations, *Human Development Report*.

Notes: The dependent variable is the mean obtained for the SWB in table 7.2. Levels of significance are **** at 0.000 level, *** at 0.001, ** at 0.01, * at 0.05.

of democracy. These findings undermine any simplistic assumption that democratic institutions are the main determinant of human happiness (or, more broadly, that institutions determine culture). Democracy is a good thing, and it probably makes some contribution to human happiness, but it does not seem to have nearly as much impact as other aspects of people's experience.

In order to measure the relative importance of these causal factors, we performed an OLS multiple regression analysis, using each society's subjective well-being level as the dependent variable. Table 7.2 shows the results.

Model 1 includes three indicators of economic development: GNP per capita, the percentage of the work force employed in the industrial sector, and the society's educational enrollment at primary, secondary, and tertiary levels. It also includes the number of years of communist rule experienced by the society (ranging from 0 to 74) and a dummy variable that taps whether or not the society was historically

dominated by Protestant elites. Finally, it includes the sum of each country's Freedom House democracy scores from 1981 through 1998 in order to measure the extent to which democratic institutions contribute to subjective well-being. For the sake of readability, this chapter's graphs show only the results from the latest survey available for each country, but our regression analyses utilize the broadest possible database, employing all available surveys from 1981 through 1997.

The variables included in model 1 explain fully 80 percent of the cross-national variance in subjective well-being, and all but one of these variables shows a significant effect. Somewhat surprisingly, a society's level of education does not seem to have a significant impact on well-being. When we drop education from the analysis in model 2, the amount of explained variance actually rises slightly, to 81 percent. The society's level of democracy (as indicated by the Freedom House scores) was only marginally significant in model 1 and now drops below significance. Although democracy and well-being are strongly linked, the interpretation that democracy determines well-being does not stand up: other factors—particularly the number of years of communist rule and the society's level of economic development—seem to play much more powerful roles. When we drop the Freedom House indicator from the equation (model 3) the percentage of explained variance falls slightly, suggesting that although democracy is not the decisive factor, it does contribute to well-being. Its powerful zero-order correlation with well-being reflects the fact that both democracy and well-being are closely linked with economic development. Thus, when the Freedom House indicator is dropped from the regression, the impact of per capita GNP jumps to a 0.001 level of significance. Our other indicator of development, the percentage of the work force in the industrial sector, is also important, and its impact is negative: having a large proportion employed in the service sector has a positive impact on well-being, but countries with large industrial sectors tend to rank low on well-being. The number of years of communist rule experienced by a society shows a major negative impact on well-being in all of our models: even controlling for the fact that the formerly communist societies tend to be poorer and have larger industrial sectors than other industrial societies, the historical experience of communist rule seems to have depressed the happiness and life satisfaction levels of the peoples who experienced it. This legacy was still clearly visible in surveys carried out several years after the collapse of communism in Europe.

A Protestant heritage consistently shows a significantly positive linkage with well-being, but its effect is modest. When we drop that variable from the equation, in model 4, the percentage of explained variance falls by about 1 percent: the striking

linkage between Protestantism and well-being shown in figure 7.3 is mainly (but not entirely) due to the fact that historically Protestant societies tend to be relatively wealthy. The key influences shaping cross-cultural differences in baseline levels of subjective well-being seem to be the society's level of economic development and whether or not it experienced communist rule.

These findings in no way refute the evidence that genetic factors play an important role in subjective well-being; we find that evidence compelling. But these findings do indicate that genetic factors are only part of the story. Happiness levels vary cross-culturally. Since cultures are constructed by human beings, this suggests that the pursuit of happiness is not completely futile. Genes may play a crucial role, but beliefs and values also are important.

Our findings also indicate that varying levels of well-being are closely linked with a society's political institutions: sharp declines in a society's level of well-being can lead to the collapse of the social and political system; while high levels of well-being contribute to the survival and flourishing of democratic institutions.

Notes

1. This is clearly an overstatement. Both Lykken and Tellegen (1996) and Diener, Suh, Lucas, and Smith (1999) point out that only 40 percent of the variance in subjective well-being is stable over 10 years, and it is this variance that is 80 percent heritable.
2. The data for the 51 following societies are from the 1995–1997 World Values Survey: United States, Australia, New Zealand, China, Japan, Taiwan, South Korea, Turkey, Pakistan, Bangladesh, India, the Philippines, Armenia, Azerbaijan, Georgia, Great Britain, East Germany, West Germany, Switzerland, Norway, Sweden, Finland, Spain, Russia, Ukraine, Belarus, Estonia, Latvia, Lithuania, Moldova, Poland, Hungary, Bulgaria, Slovenia, Croatia, Yugoslavia, Bosnia, Macedonia, Nigeria, South Africa, Ghana, Argentina, Brazil, Chile, Colombia, Dominican Republic, Mexico, Peru, Puerto Rico, Uruguay, Venezuela. Data for Canada, France, Italy, Portugal, Netherlands, Belgium, Denmark, Iceland, Ireland, Northern Ireland, Austria, Czech Republic, Slovakia, and Romania and are from the 1990 World Values Survey. The data from the European Values Survey, the 1990 World Values Surveys, and the Eurobarometer surveys are available from the ICPSR survey data archive.

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