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IS IT CULTURE OR DEMOCRACY? THE IMPACT OF DEMOCRACY AND CULTURE ON HAPPINESS

ABSTRACT. We analyze the relation between democracy and perceived subjective well-being while controlling for other relevant determinants such as culture measured by languages. We conduct a cross-national analysis covering 28 countries using data from the 1998 International Social Survey Programme. Contrasting existing empirical evidence, we observe a significant positive relationship between democracy and happiness even when controlling for income and culture measured by language and religion. The effect of democracy on happiness is stronger in countries with an established democratic tradition.

1. INTRODUCTION

A more democratic system is likely to produce political outcomes that are closer to the preferences of the citizens than a system with less democratic elements.[1] Consequently, *ceteris paribus*, a greater exposure to democracy can be expected to raise individuals' well-being. Not only does such exposure lead to political results that are acceptable to a large part of a population, but citizens' well-being may also arise from their participation in the political decision-making process and from the perceived extent of

procedural fairness of this process. In fact, such procedural utility might be even larger than the utility gained from a (democratic) political outcome.[2]

Therefore, we expect empirical research to show that a higher level of democratization of a country leads to a higher level of self-reported happiness. However, the limited empirical evidence from international cross-sectional studies only partly supports this proposition. Based on a sample of about 40 nations drawn from the World Values Survey, Schyns (1998) and Veenhoven (2000a) find a positive and significant correlation between the Freedom House Democracy Index and self-reported happiness. However, this correlation becomes insignificant once the different national income levels are controlled for.[3] In another study based on the World Values Survey, Inglehart and Klingemann (2000) note that "[our] findings undermine any simplistic assumption that democratic institutions are the main determinant of human happiness" (p. 180).

The only scholars who find a positive and robust influence of democracy on subjective life satisfaction are Frey and Stutzer who conducted a series of analyses focused on the particular case of Switzerland.[4] They exploit the fact that the Swiss federal structure allows for considerable variation in political institutions across the 26 cantons, especially with regard to direct popular rights. One drawback of the Swiss case is, however, that the political rights of Swiss citizens vary only with respect to the cantonal and local levels. At the federal level, citizens from all cantons have the same political rights with regard to such important policy fields as foreign policy, trade, defence, or the social security system.[5] Hence, measured on an international scale, the extent of democratic rights is very high for all Swiss cantons, but the variation in the degree of democracy (and in other political institutions) between cantons is relatively small. An international sample that includes, for example, established democracies like Great Britain or the United States, as well as relatively weak democracies such as Russia, will clearly yield a much higher variation of democracy levels. It is conceivable that this higher variation in democracy levels in an international setting should also have a more notable impact on self-reported overall happiness.

It can be argued that a cross-national analysis of subjective well-being is difficult because countries vary not only in terms of democracy, but also with regard to other determinants that might influence individual happiness, such as income and culture. Any cross-national empirical analysis must take such factors into account. A particularly important determinant is culture: people in different cultures may value certain aspects of life differently and could, therefore, have different perceptions of their own individual well-being under the same objective circumstances.[6] This possibility is also noted

by Easterlin (1974, p. 108), and several more recent papers examine this relationship.[7]

The case study of Switzerland highlights the importance of such cultural differences. The country is divided into three major language regions with rather different cultures, with the borderline being mainly between the German-speaking region on the one hand and the French- and Italian-speaking regions on the other hand. In fact, voting patterns in recent public elections reveal substantial differences among the different language regions within Switzerland.[8] In their happiness analysis, Stutzer and Frey (2003) use the state language as a proxy for the regionally dominating culture, and the coefficients of the language variables are typically highly significant when self-reported well-being is regressed on a commonly used set of determinants of happiness. Moreover, Dorn et al. (2005) find that the impact of cantonal democracy levels on well-being is small and insignificant once cultural variables at the individual and state levels are included in the regression equations. Thus, cultural aspects, which have previously been shown to be a main source of differences in the political behavior in different countries, may also play a major role in determining self-reported happiness. Hence, not only in the Swiss case, but even more in international studies, an analysis of the effects of democracy on happiness must control for culture.

The use of the main language of a country to reflect national culture can be justified because, in society, language serves as an important transmission channel of culture and its embedded view of the world, the social system, and customs. At the individual level, the mother tongue shapes human patterns of thought, a view advocated not only by sociobiologists (e.g., Allott, 1999) but also by economists (e.g., Lazear, 1999). Consequently, such cultural variations may not only be reflected in institutional differences but also in how individuals value the contribution of political institutions to their individual welfare. Among other factors that are closely related to culture and that might have an impact on people's happiness are individuals' religious denominations, as they reflect differing value systems and determine the goals in life.[9]

Besides democracy and culture, the economic situation of a country will also likely affect the well-being of its population. Economists have carefully studied the impact of income on happiness. As earlier papers by Abramowitz (1959) and Easterlin (1974) indicate, income growth may have a positive effect on personal happiness in the short run but not in the long run.[10] Consequently, in recent decades, the average level of life satisfaction has remained constant in many countries despite considerable economic growth.[11] Moreover, Easterlin (1974) shows that countries with rather

different GNP per capita – for example, West Germany and Nigeria, to mention the two most extreme examples – had nearly the same average personal happiness rating (p. 106).[12] On the other hand, differences in economic status within a country have a clear and consistent impact on personal happiness.[13] Thus, to adequately control for the impact of income on happiness, it is necessary to distinguish between the income level within a society, and the relative economic position that an individual or family occupies in this society. In the previous research cited above, based on the World Values Survey data, GDP per capita had to be used as a crude proxy for individual income and a distinction between average income level and relative income position was not feasible.

This paper takes a closer look at the relation between democracy and perceived subjective well-being, while also taking into account the impact of culture measured by languages and religion. We conduct a cross-national analysis covering 28 countries, using data from the 1998 International Social Survey Programme (ISSP). An important advantage of the ISSP data is that they allow for the definition of income variables at the individual level. The model and methodology of this paper are presented in the next section, and the following section shows the empirical results. Even after controlling for culture, income and numerous individual socio-demographic characteristics, we observe a positive and significant relationship between democracy and happiness. The last section concludes.

2. MODEL AND METHODOLOGY

The effect of democracy on subjective well-being may be identified in a cross-national setting in which sufficient variation in exposure to democracy can be observed. Obviously, as discussed above, such a cross-national analysis requires a rich set of available conditioning variables to control for the multifaceted happiness-influencing differences among individuals and among countries. An appropriate dataset for this purpose is the 1998 ISSP, an ongoing program of cross-national collaboration that started in 1985. The ISSP data are collected by independent institutions in several countries and topics covered by the data change from year to year. One advantage of this international micro dataset is, as already mentioned above, that it includes the interviewee's household income, which otherwise had to be substituted with crude income measures at the aggregate level.[14]

We start with the model developed by Frey and Stutzer (2000) who analyzed well-being using ordered probit and a rich set of socio-demographic and socio-economic control variables. These variables include

gender, age, education, marital status, household type, and employment status. We deviate from the approach by Frey and Stutzer in two respects. Following the literature mentioned in the introduction, first, we explicitly take into account the potential impact of culture by including control variables for the main language of the country and for the religious denomination of the interviewee. Second, we do not look only at the effect of (absolute) personal income but rather distinguish between the income level within a country on the one hand and the relative income position of the individual on the other.[15] We eliminate observations with missing values in the control variables.

Two measures of individual happiness are often encountered in the literature. While nearly all authors speak of happiness, only some surveys truly question respondents about their personal happiness; the others ask about personal satisfaction or well-being. This first holds true for the ISSP 1998, while the second type of question was used, e.g., in the Swiss analyses by Frey and Stutzer. However, personal satisfaction on the one hand and happiness on the other may represent quite different aspects of personal life,[16] particularly (but not exclusively) for speakers of the German language. Nevertheless, the literature usually assumes that these two personal emotions are comparable insofar as they are both highly correlated with themselves and with other explanatory variables.[17] Therefore, and in accordance with the usual practice, the two terms are used interchangeably in this study.

In the 1998 wave of the ISSP, the survey's first question was as follows:

If you were to consider your life in general these days, how happy or unhappy would you say you are, on the whole?

Respondents could rate themselves as 'very happy,' 'fairly happy,' 'not very happy,' or 'not happy at all.' Table I shows the distribution of these answers in the 28 countries. In all countries but Latvia, more than half the population consider themselves as either 'very happy' or 'fairly happy,' with 'fairly happy' being the most frequent happiness assessment in all but two countries. Nevertheless, some considerable differences between countries can be observed; for example, 44.1% of the Irish consider themselves 'very happy,' whereas this figure is as low as 4.6% for Latvia and 4.7% for Hungary and Russia.

To estimate the model, we use an unweighted ordered probit model with standard errors clustered by countries. The clustering permits that the error terms of individuals living in the same country can be correlated, while the assumption of no correlation is only upheld across countries. For the

TABLE I

Self-reported happiness in 28 countries (in %)

	Very happy	Fairly happy	Not very happy	Not at all happy	Mean score
Austria	22.6	67.8	8.6	0.9	3.12
Bulgaria	8.7	45.1	28.7	17.4	2.45
Canada	25.4	57.8	14.5	2.2	3.06
Chile	27.5	32.3	34.8	5.4	2.82
Cyprus	21.7	50.6	22.5	5.2	2.89
Czech Republic	8.9	71.3	17.9	1.8	2.87
Denmark	31.8	57.7	8.7	1.8	3.19
France	14.1	65.1	17.8	3.0	2.90
Germany (West)	17.7	66.2	13.5	2.6	2.99
Germany (East)	9.3	61.2	25.3	4.2	2.76
Hungary	4.7	45.1	39.6	10.6	2.44
Ireland	44.1	50.9	4.4	0.6	3.38
Italy	12.4	65.9	18.2	3.5	2.87
Japan	14.3	74.1	10.0	1.6	3.01
Latvia	4.6	43.9	45.0	6.5	2.47
New Zealand	33.0	59.9	6.4	0.6	3.25
Norway	22.1	66.6	10.4	0.9	3.10
Philippines	27.8	53.3	15.0	3.9	3.05
Poland	19.0	63.0	15.3	2.7	2.98
Portugal	19.5	37.5	34.9	8.0	2.69
Russia	4.7	49.4	37.1	8.8	2.50
Slovak Republic	7.1	58.3	26.2	8.4	2.64
Slovenia	9.3	58.6	28.8	3.3	2.74
Spain	19.2	68.1	11.1	1.6	3.05
Sweden	24.4	61.2	12.8	1.6	3.08
Switzerland	28.4	62.1	8.5	0.9	3.18
United Kingdom	35.1	58.1	5.7	1.1	3.24
United States	36.7	52.4	8.9	2.0	3.24

The mean score is obtained by transforming the ordinal scale to a cardinal scale (score 4 for 'very happy', score 3 for 'fairly happy', score 2 for 'not very happy', score 1 for 'not happy at all').

institutional variables measured at the country level, such as democracy, the degree of freedom is then limited by the number of countries in the sample and not determined by the number of survey respondents (Moulton, 1990). As a robustness test, we also carry out the identical estimation with additional macroeconomic determinants included in the model.

To capture the impact of the political system on self-reported happiness, we use two different measures of democracy: the *Polity IV index* by Marshall and Jaggers (2003) and the *Freedom House index* by Karatnycky (2000). The Polity IV index, which is based on a relatively narrow definition

of democracy, assesses the openness of democratic institutions on a scale from 0 to 10. Components of the index include the extent to which political executives are chosen through competitive elections and the opportunity of non-elites to access institutional structures for political expression and to attain political office. In contrast, the Freedom House democracy index uses a broader concept of democracy; it measures a wide array of political rights and civil liberties on a 7-point scale. These include basic economic and social freedoms, such as the right to establish a private business or the right of gender equality. Index values are summarized in Table A.I of the Appendix.

Based on each of these indices, two variables are defined: one for the democracy level in 1988, and a second one for the increase in democracy between 1988 and 1998. This structure takes into account that the ISSP includes various transitional countries in which democratic structures have only been established very recently, i.e. between 1988 and 1998.[18] It seems plausible to assume that these new democratic structures would not have the same impact on happiness as the structures already established a decade or more ago, i.e. before 1988.

As is common in such studies, language – which can play an important role at different levels, institutional as well as individual – proxies for culture. To account for culture by language, binary variables are defined for 'English,' 'German,' 'North Germanic' (Scandinavian), 'Romance,' 'Balto-Slavic, Uralic and Greek,' and 'Asian' (Japanese and Filipino) languages. In the regressions, 'English' is used as the reference group. Controlling for culture (i.e. language) at the individual level might be important because the set of factors that contributes to personal satisfaction and the perception of the benefits of democratic institutions may vary with individual cultural background. Unfortunately, in the ISSP 1998 survey, information on the ethnic origin of the respondent is available only for half the countries so that an individual language measure could not be included.

Another possible variable to represent culture is religion. In some countries, ethnic groups (or language groups) correspond with differing religious affiliations, whereas in others, such as Switzerland, religion and language are not highly correlated. The ISSP data allow to control for religious denominations at the individual level. We use a set of dichotomous variables indicating whether an individual categorizes herself as 'Catholic,' 'Anglican,' 'Orthodox,' 'other Christian,' belonging to a 'non-Christian religion' or having 'no religion,' with 'Protestant' forming the reference category.

The equivalence income is computed in U.S. dollars using purchasing power parity data from Penn World Table 6.1 and the modified OECD

equivalence scale.[19] Since data on the exact household composition is unavailable, it is assumed that at least one person in each household is an adult, while the remaining household members are equally divided into adults and children. To differentiate between the income level of a country and the relative income positions of individuals, we include subsistence income, defined as 40% of the average income in the respective country, and the difference between actual individual income and subsistence income. Moreover, to allow for the likely nonlinearity of the income effect, the base model includes the squares of these income differences, calculated separately for positive and negative differences. Assuming a positive but decreasing marginal utility of income, we expect a positive sign for the relative income variable and a negative one for its squared term. If only relative income matters, the coefficient of subsistence income should be zero. If only absolute income matters, the coefficients of subsistence and relative income should be both positive and identical.

3. EMPIRICAL RESULTS

Following the Hendry approach, we start with the comprehensive model estimated separately for both democracy indices. The results are given in Table A.II of the Appendix. In both cases, the squared income variable for those below the poverty line does not prove significant. Therefore, this variable is excluded for further analysis. The subsequent discussion of the results is restricted to the reduced model of the ISSP dataset.

   The results for the democracy, income and language variables are given in Table II. Established democratic structures as represented by the Polity IV democracy index for the year 1988 have a positive impact on happiness which is statistically significant at the 5% level. Given that only 28 countries pertain to the sample, which causes the degrees of freedom for variables measured at the country level to be small, we consider this significance level to be quite high. The effect of democracy can be observed even though many relevant sociodemographic and economic factors, including individual household income, have been controlled for. This finding is robust with respect to the inclusion of language and religious denomination variables. If the Freedom House democracy index is used in place of the Polity IV measure, the coefficient of the democracy 1988 variable is even larger, although its statistical significance level is slightly lower. The marginal effect of democracy on happiness is sizable: one additional point on the Freedom House scale increases the probability that a subsistence income earner is 'very happy' by as much as an increase of the equivalence income by 7,000

TABLE II

Personal subjective well-being in 28 countries

1998 ISSP Data, Cross Section, 25,937 Observations, Ordered Probit

	Models with the Polity IV index		Models with the Freedom House index	
Democracy in 1988	0.067** (2.10)	0.068** (2.14)	0.114 (1.54)	0.110* (1.87)
Change in Democracy from 1988 to 1998	0.038 (1.17)	0.051** (2.06)	0.049 (0.67)	0.066 (1.09)
Subsistence income	0.038* (1.87)	−0.002 (0.11)	0.036 (1.58)	−0.004 (0.23)
Relative income	0.015*** (6.81)	0.016*** (7.35)	0.016*** (6.61)	0.016*** (7.32)
(Income above poverty line/10) squared	−0.006*** (3.22)	−0.006*** (3.45)	−0.006*** (3.16)	−0.006*** (3.42)
German		−0.252*** (2.68)		−0.224*** (2.60)
North-Germanic languages		−0.261*** (2.71)		−0.264*** (2.77)
Romance languages		−0.565*** (4.60)		−0.556*** (4.57)
Balto-Slavic and Uralic Languages, Greek		−0.654*** (4.73)		−0.634*** (4.37)
Asian languages		−0.354*** (3.67)		−0.337*** (3.63)
No. of other control variables	24	24	24	24
Log of pseudo-likelihood	−26'272.02	−26'063.46	−26'275.38	−26'064.83
Wald Tests				
Joint significance of democracy variables	6.05**	6.74**	5.36*	6.58**
Joint significance of language variables		29.96***		33.36***
Democracy 1988 = change in democracy 1988–1998	3.06*	2.12	4.27**	3.84**

The numbers in parentheses are the absolute values of the z-statistics of the estimated parameters. '***', '**', and '*' show that the estimated parameter is significantly different from zero at the 1, 5, or 10% level, respectively. The Wald tests are χ^2 with 1, 2, or 7 degrees of freedom, respectively.

U.S. dollars per year.[20] These results strongly support the hypothesis that a higher degree of democracy in a country increases citizens' happiness.

Democratic structures that were newly acquired between 1988 and 1998 have a positive, but in most specifications insignificant impact on happiness. The Wald tests show that in three of the four estimations, the newly established democratic structures have a significantly weaker positive effect on happiness than the older democratic institutions that were already in place in 1988.[21] Between 1988 and 1998, several countries in the sample – predominantly in Eastern Europe – went through a transition from authoritarian regimes to democratic systems. These estimation results are consistent with the notion that residents of these countries do not (yet) benefit as much from democracy as do residents of countries with longer democratic traditions. The reason may be that democratic institutions have not been in place long enough to permit substantial change toward more broadly accepted policies. Moreover, it has been observed in transitioning countries that the introduction of democracy may create overly optimistic expectations with regard to the future that later may not be fulfilled, thus resulting in decreasing happiness during at least a part of the transition process.[22]

Culture, as measured by the language variables, has a very strong impact on subjective well-being. *Ceteris paribus*, residents of predominantly English-speaking countries report higher levels of life satisfaction than residents from countries with other cultures.[23] Conversely, levels of self-reported happiness tend to be lowest in countries outside the Germanic language tradition, i.e. where neither English, German, nor North-Germanic (Scandinavian) languages are spoken. In countries with a Balto-Slavic, Uralic, or Greek language, the predicted probability that a survey respondent be 'very happy' is *ceteris paribus* more than 16 percentage points lower than in a country where English is spoken.[24] These results support our hypothesis that culture plays an important role in determining well-being. While we do not claim to having identified the cause of culture's impact, several explanations seem consistent with these findings. First, in some cultures, there may be a social expectation that individuals should answer questions about their well-being by saying that they were 'happy' or 'very happy,' while such a positive assessment is not necessarily a social norm in other cultures. Moreover, it is possible that the pursuit of happiness might not be of equal importance as a goal of life in every culture.[25] Finally, given that the term 'happiness' might not have the exactly identical meaning across languages, such language differences might contribute to differences in the levels of self-reported well-being.

With respect to religious denominations, which arguably also capture cultural identity, the results show on the one hand that there are no significant differences between various Christian denominations. On the other hand, individuals with a 'non-Christian religion' and with 'no religious denomination' report significantly lower happiness levels than the reference group.[26] The distinction between national income level and relative income position of individuals proves to be relevant. Relative income is always highly significant, while subsistence income is usually insignificant. This finding provides evidence in favor of the relative income hypothesis. Moreover, the squared income above the poverty line is always highly significantly negative, indicating decreasing marginal utility of income.

We tested the robustness of democracy's effect on well-being using the baseline model (as reported in columns two and four of Table II) by controlling for several variables that capture important aspects of the general economic conditions of a country; namely growth of real GDP per capita, unemployment, and consumer price inflation.[27] The results of the robustness tests are reported in Table III. The additional macro-level variables which were added one by one or jointly to the baseline model all have clearly insignificant coefficients. The democracy variables remain significant when controlling for the unemployment rate. The inclusion of inflation or GDP growth, however, strongly inflates standard errors such that the democracy variables are no longer significant.[28] Nonetheless, throughout all the additional specifications, the coefficients of the democracy variables remain roughly at the level of the baseline model. Furthermore, given the insignificance of the control variables, a general-to-specific analysis would again lead back to the baseline model presented in Table II and in the first column of Table III.

In conclusion, we find a significant impact of the degree of democratization on people's self-reported happiness, even if we control for culture as represented by national language and individual religion. Furthermore, the robustness tests suggest that macro-economic conditions only partly serve as channels of transmission but that a direct institutional linkage persists beyond.[29] With this finding, we contradict extant empirical analyses using cross-national individual data which found the influence of national income to be dominating over political institutions (e.g. Schyns, 1998; Veenhoven, 2000a). In light of this previous research, our results also reveal the importance of data quality and the insubstitutability of missing individual income data with aggregate GDP per capita. In addition, we contrast the recent findings for Switzerland in Dorn et al. (2005) which revealed no association of participatory rights with self-reported well-being once cultural influences were taken into account.

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TABLE III

Robustness tests

1998 ISSP Data, Cross Section, 25,937 Observations, Ordered Probit

				Models with the Polity IV Index	
Democracy in 1988	0.068**	0.076***	0.079	0.052	0.083
	(2.14)	(3.12)	(1.24)	(1.10)	(1.30)
Change in Democracy 88–98	0.051**	0.060**	0.062	0.037	0.070
	(2.06)	(2.47)	(1.00)	(0.81)	(1.09)
Unemployment rate		0.009			0.009
		(0.72)			(0.85)
Inflation			0.003		0.011
			(0.26)		(0.65)
Growth rate of real GDP p.c.				0.014	0.026
				(0.58)	(0.78)
Wald Tests					
Joint significance of democracy variables	6.74**	10.08***	3.06	2.31	2.70
Joint significance of control variables					1.22

				Models with the Freedom House index	
Democracy in 1988	0.110*	0.130**	0.111	0.076	0.145
	(1.87)	(2.08)	(0.78)	(0.84)	(1.05)
Change in Democracy 88–98	0.066	0.083	0.067	0.036	0.113
	(1.09)	(1.33)	(0.47)	(0.38)	(0.76)
Unemployment rate		0.009			0.011
		(0.69)			(0.83)
Inflation			0.001		0.010
			(0.06)		(0.47)
Growth rate of real GDP p.c.				0.015	0.024
				(0.62)	(0.69)
Wald Tests					
Joint significance of democracy variables	6.58**	6.90**	5.18*	4.65*	4.57
Joint significance of control variables					0.96

Absolute values of z-statistics in parentheses, '***', '**', and '*' indicate that the estimated paramater is significantly different from zero at the 1, 5, or 10% level, respectively. The Wald tests are χ^2 with 2 and 3 degrees of freedom.

4. SUMMARY AND CONCLUDING REMARKS

In this paper, we analyze the impact of democracy on subjective well-being in an international comparison of 28 countries. We control not only for a multitude of sociodemographic and economic determinants of life satisfaction, but also for cultural influences as captured by language and religion variables.

Contrasting earlier empirical evidence (e.g. Schyns, 1998; Veenhoven, 2000a), our analysis is the first study that reports a significant influence of democracy on individuals' subjective well-being in an international context. The result is robust to the inclusion of culture and income variables. Furthermore, the effect of democracy remained positive when macro-economic variables were added to the model. These findings provide empirical support for theoretical work in the field of political economy which suggests that higher levels of democracy will, *ceteris paribus*, lead to procedures and policies that correspond more closely to voters' preferences and thus increase people's happiness.

In our investigation, culture as measured by language has a considerable impact on subjective well-being while religious denomination is less decisive. The impact of language is also more robust than the effect of political institutions. With regard to national culture, it appears that the happiest people live in English-speaking nations, followed by individuals in German-speaking and Scandinavian nations.

Finally, we confirm previous research by showing that relative income has a positive impact on happiness, but with diminishing returns. This result is consistent with the usual assumption of decreasing marginal utility. Whether the absolute income of a person also has an impact on happiness is not unambiguously determined by this study. However, even if absolute income has an additional impact on happiness, the effect of relative income clearly dominates.

The question of whether or not democracy increases happiness is especially timely in view of the transitioning of many countries from authoritarian to democratic structures within the past 20 years. Our results show that, compared to countries with a longer democratic tradition, the positive effect of democracy on life satisfaction is smaller in these transitioning countries. Thus, after the introduction of democratic structures, it may take some time before the full benefits of democracy in the form of higher individual life satisfaction can be reaped.

NOTES

[1] See, e.g., Pommerehne (1978) or, for theoretical models, Besley and Coate (2001) or Feld and Kirchgässner (2001).

[2] See Stutzer and Frey (2003) and Frey and Stutzer (2005).

[3] See also Bjørnskov (2003) for a similar result.

[4] See, e.g., Frey and Stutzer (2000, 2002), as well as Stutzer and Frey (2003). In an international context, Jungeilges and Kirchgässner (2002) found a negative relation between the extent of civil liberties and suicide rates.

[5] Among the important fields of politics at the cantonal level are education, welfare, and police.

[6] For this, see, e.g., Lijphart (1979), or the difference between Europeans and Americans with respect to (economic) inequality shown in Alesina et al. (2004).

[7] See, e.g., the contributions in Diener and Suh (2000). For the effect of culture on economic outcomes see, e.g., Guiso et al. (2006).

[8] See also Lijphart (1979), who concluded that ''because language is a crucial differentiator among nations, it is bound to be a major cleavage and a main source of partisan differences in 'nations' that are not linguistically homogeneous'' (p .453).

[9] See, e.g., Ferriss (2002) or Bjørnskov (2003).

[10] As soon as individuals adjust to their new situation, the level of happiness may settle down to the old equilibrium. See, e.g., Easterlin (2001, 2003).

[11] Several studies provide evidence for this observation. See, e.g., the papers cited in Frey and Stutzer (2002, p. 413), and also Frank (1997), Oswald (1997), McBride (2001), and Easterlin (2003). The long-term impact may even go in the reverse direction, from happiness to economic growth. See for this Kenny (1999).

[12] See also the graph in Frey and Stutzer (2002, p. 417), which suggests that above a level of about 5,000 US dollars per capita (in 1995 PPP) there exists no obvious relation between GNP per capita and personal happiness (see also Bjørnskov et al., 2005). That absolute income might, nevertheless, also have an impact on happiness is shown, e.g., by Schyns (2002).

[13] For the impact of relative income on happiness see, e.g., D'Ambrosio and Frick (2004), Luttmer (2004) as well as DiTella and MacCulloch (2005). Another question is whether it is really income and not wealth together with income that matters. For this, see Headey and Wooden (2004) or Headey et al. (2004).

[14] In contrast, the World Value Survey data contain household income information in form of income brackets.

[15] The variables used in the model are listed in Table A.III of the Appendix. Minor differences in the model specification are caused by the availability of explanatory variables.

[16] For the difference between satisfaction and happiness see, e.g., Lane (1991, chapter 22) or Veenhoven (2000b).

[17] See, e.g. Veenhoven (2000a).

[18] It should be noted that the sample includes no country in which the Polity IV democracy level decreased between 1988 and 1998. In the same period, the Freedom House democracy score slightly declined in three countries of the sample. The variable 'Increase in Freedom House Democracy Score 1988–1998' assumes a negative value for these countries.

[19] See Heston et al. (2002) and Van Doorslaer and Masseria (2004, p. 12).

[20] In the model that includes controls for languages and religion, the marginal effects for being 'very happy' are 0.0279 for the Freedom House democracy level 1988, 0.0040 for relative income measured in $K, and minus 0.0017 for (relative income/10) squared. One additional point on the Polity index scale has the same effect as an additional income of $4,500. The full list of marginal effects can be obtained from the authors.

[21] Note that in every model of Table I additional Wald tests consistently reject the null hypothesis that the coefficients of the two democracy variables are jointly equal to zero at least at the 10% level.

[22] See Moller and Dickow (2002) for South Africa, or Veenhoven (2001) for Russia. Note that the cross-section data of the ISSP does not allow to specifically model such transition processes.

[23] One reader of this paper suggested that English-speaking countries are more affected by migration than others, which would cause an upward bias to well-being if migrants were particularly happy. However, when we analyze a country-specific variable for ethnic origin in the subsample of residents of the United Kingdom, we find no evidence that would support this claim.

[24] The marginal effects of the language variables on the probability of being 'very happy' are (in comparison to English) -0.064 for German, -0.066 for North-Germanic languages, -0.143 for Romance languages, -0.166 for Balto-Slavic, Uralic, and Greek languages, and -0.090 for Asian languages. The reported values refer to the model that uses the Polity IV democracy index; however, almost identical marginal effects are obtained with the Freedom House index.

[25] For this, see, e.g., Ahuvia (2002).

[26] See the results in Table A.II of the Appendix. Similarly, Ferriss (2002) finds for the US that differences in happiness between the main denominations of Judeo-Christianism appear negligible.

[27] Definitions and sources of these variables are given in Table A.III of the Appendix. Note that the income level of a country is already controlled for by the substitution income variable, which is here defined as 40% of a country's average income level.

[28] In the models using the Freedom House index, Wald tests always reject the null hypothesis that both democracy variables have zero impact on happiness at least close to the 10% level. With the Polity index, the results are somewhat weaker.

[29] In the Swiss context, for the impact of democracy on economic performance see Feld and Savioz (1997), or in a cross-national context, Barro (1996) and Perotti (1996). On inflation, see Desai et al. (2003).

APPENDIX

TABLE A.I

Democracy index levels in 28 countries

	Polity IV index		Freedom House index	
	1988	Change 1988–1998	1988	Change 1988–1998
Austria	10.0	0.0	7.0	0.0
Bulgaria	0.0	8.0	1.0	4.5
Canada	10.0	0.0	7.0	0.0
Chile	2.0	6.0	3.5	2.0
Cyprus	10.0	0.0	6.5	0.5
Czech Republic	0.0	10.0	1.5	5.0
Denmark	10.0	0.0	7.0	0.0
France	9.0	0.0	6.5	0.0
Germany (West)	10.0	0.0	6.5	0.0
Germany (East)	0.0	10.0	1.5	5.0
Hungary	2.0	8.0	3.5	3.0

TABLE A.I

Continued

	Polity IV index		Freedom House index	
	1988	Change 1988–1998	1988	Change 1988–1998
Ireland	10.0	0.0	7.0	0.0
Italy	10.0	0.0	7.0	−0.5
Japan	10.0	0.0	7.0	−0.5
Latvia	0.0	8.0	2.5	4.0
New Zealand	10.0	0.0	7.0	0.0
Norway	10.0	0.0	7.0	0.0
Philippines	8.0	0.0	5.5	0.0
Poland	0.0	9.0	3.0	3.5
Portugal	10.0	0.0	6.5	0.5
Russia	0.0	4.0	2.5	1.5
Slovak Republic	0.0	9.0	1.5	4.5
Slovenia	1.0	9.0	3.0	3.5
Spain	10.0	0.0	6.5	0.0
Sweden	10.0	0.0	7.0	0.0
Switzerland	10.0	0.0	7.0	0.0
United Kingdom	10.0	0.0	7.0	−0.5
United States	10.0	0.0	7.0	0.0

The Polity IV democracy index is measured on a 10-point scale and the Freedom House index is measured on a 7-point scale. In the case of both indices, higher scores represent higher levels of democracy.

TABLE A.II

Results comprehensive model

	Model with the Polity IV index		Model with the Freedom House index	
Democracy in 1988	0.068**	(2.54)	0.110*	(1.87)
Change in democracy from 1988 to 1998	0.051**	(2.06)	0.066	(1.09)
Age < 30	Reference category			
Age 30–39	−0.096**	(2.46)	−0.096**	(2.43)
Age 40–49	−0.216***	(5.30)	−0.214***	(5.29)
Age 50–59	−0.233***	(4.58)	−0.232***	(4.51)
Age 60–69	−0.131**	(2.15)	−0.127**	(1.40)
Age 70–79	−0.087	(1.43)	−0.085	(1.40)
Age 80 and older	0.099	(1.35)	0.103	(1.39)

TABLE A.II

Continued

	Model with the Polity IV index		Model with the Freedom House index	
Male	Reference category			
Female	0.018	(1.00)	0.018	(0.99)
Low education	Reference category			
Middle education	0.106***	(3.60)	0.094***	(2.80)
High education	0.147***	(4.20)	0.134***	(3.48)
Single	0.038	(1.03)	0.054	(1.41)
Married / living together	Reference category			
Divorced or separated	−0.334***	(9.76)	−0.338***	(10.22)
Widowed	−0.318***	(7.87)	−0.321***	(7.74)
Household with one person	−0.277***	(5.45)	−0.289***	(5.80)
Household with two persons	Reference category			
Household with more than two persons	0.142***	(6.16)	0.142***	(6.06)
Employed	Reference category			
Self-employed	0.063**	(2.34)	0.061**	(2.24)
Unemployed	−0.351***	(6.47)	−0.342***	(6.27)
Housewife / houseman	0.087***	(2.62)	0.086**	(2.58)
Other employment status	0.034	(1.12)	-0.032	(1.12)
Subsistence income	−0.003	(0.15)	−0.005	(0.27)
Relative income	0.016***	(7.09)	0.016***	(6.98)
(Income above poverty line/10) squared	−0.007***	(3.46)	−0.067***	(3.43)
(Income below poverty line/10) squared	0.116	(0.84)	0.111	(0.77)
English	Reference category			
German	−0.250***	(2.66)	−0.222***	(2.58)
North-Germanic languages	−0.258***	(2.67)	−0.261***	(2.73)
Romance languages	−0.564***	(4.56)	−0.556***	(4.54)
Balto-Slavic and Uralic languages, Greek	−0.653***	(4.71)	−0.633***	(4.35)
Asian languages	−0.353***	(3.63)	−0.336***	(3.59)
Protestant	Reference category			
Catholic	−0.004	(0.06)	−0.003	(0.05)
Anglican	−0.001	(0.01)	0.008	(0.08)
Orthodox	−0.120	(1.10)	−0.130	(1.16)
Other Christian church	−0.122	(1.27)	−0.131	(1.30)
Non-Christian religion	−0.182***	(2.68)	−0.176***	(2.70)
No religion	−0.199***	(3.94)	−0.193***	(3.84)
Number of observations	25,937		25,937	
Log of pseudo-likelihood	−26,063.01		−26,064.48	
Adjusted McFadden's R^2	0.079		0.079	

The numbers in parentheses are the absolute values of the z-statistics of the estimated parameters. '***', '**', '*' show that the estimated parameter is significantly different from zero at the 1, 5, or 10% level, respectively.

TABLE A.III

Definition of variables

Variable	Definition
Happiness	Four categories
Age 30–39	1 if age is between 30 and 39, 0 otherwise
Age 40–49	1 if age is between 40 and 49, 0 otherwise
Age 50–59	1 if age is between 50 and 59, 0 otherwise
Age 60–69	1 if age is between 60 and 69, 0 otherwise
Age 70–79	1 if age is between 70 and 79, 0 otherwise
Age 80 and older	1 if age is older than 80, 0 otherwise
Female	1 if person is female, 0 otherwise
Intermediate education	1 if person has incomplete or completed secondary II education, 0 otherwise
High education	1 if person has incomplete or completed tertiary education, 0 otherwise
Single	1 if marital status is single, 0 otherwise
Widowed	1 if marital status is widowed, 0 otherwise
Divorced or separated	1 if marital status is divorced or separated, 0 otherwise
Household size one person	1 if person is living in a one-person household, 0 otherwise
Household size three or more persons	1 if person is living in a household with three or more persons, 0 otherwise
Self-employed	1 if a person is self-employed or employed in her own company, 0 otherwise
Housewife	1 if person is a housewife or a houseman, 0 otherwise
Other employment status	1 if person works in a family business, is an apprentice or a student, does military service, is retired or has a not classified status
Unemployed	1 if person is unemployed and either officially recorded or not, 0 otherwise
Subsistence income	40% of the national average equivalence income, measured in units of 1000 Dollars per year (PPP adjusted). Source: Heston et al. (2002).
Relative income	Individual deviance from national subsistence income, measured in units of 1000 Dollars per year (PPP adjusted)
(Income above poverty line/10) squared	Relative income divided by 10, squared (if relative income has a positive value)
(Income below poverty line/10) squared	Relative income divided by 10, squared (if relative income has a negative value)
German	1 if main language of country is German, 0 otherwise
North-Germanic languages	1 if main language of country is a North-Germanic (Scandinavian) language, 0 otherwise
Romance languages	1 if main language of country is a Romance language, 0 otherwise
Balto-Slavic, Uralic, Greek languages	1 if main language of country is Balto-Slavic, Uralic or Greek language, 0 otherwise

TABLE A.III

Continued

Variable	Definition
Asian languages	1 if main language of country is an Asian language, 0 otherwise
Catholic	1 if a person is a Catholic, 0 otherwise
Anglican	1 if a person is an Anglican, 0 otherwise
Orthodox	1 if a person is an Orthodox Christian, 0 otherwise
Other Christian church	1 if a person is associated with Christian church other than Protestant, Catholic, Anglican, or Orthodox, 0 otherwise
Non-Christian religion	1 if a person has a non-Christian religion, 0 otherwise
No religion	1 if a person has no religion, 0 otherwise
Polity IV democracy index 1998	Polity IV democracy index on a scale from 0 (lowest level of democracy) to 10 (highest level of democracy)
Increase in Polity IV democracy index 1988–1998	Polity IV democracy score 1998 minus Polity IV democracy score 1988. Source: Marshall and Jaggers (2003).
Freedom House democracy index 1998	Freedom House democracy index on a scale from 0 (lowest level of democracy) to 7 (highest level of democracy)
Increase in Fr. House democracy index 1988–1998	Freedom House democracy score 1998 minus Freedom House democracy score 1988. Source: Karatnycky (2000).
Unemployment rate	Unemployment rate 1998 in %. Source: International Labor Organization (2006).
Inflation	Consumer price inflation 1998 in %. Source: International Monetary Fund (2005).
Real GDP p.c.	Real GDP per capita 1998 in USD 1000. Source: Heston et al. (2002).
Growth rate of real GDP p.c.	Growth rate of real GDP per capita 1998 in %. Source: Heston et al. (2002).

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