Subjective Well-Being and the Role of Ideology: linking micro- and macro-level political variables through time and space

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Abstract

While there has been growing interest among social scientists in what influences on individual well-being, most analyses concentrate primarily on economic indicators. The few studies that specifically explore the impact of political factors focus almost exclusively on macro-level variables such as levels of democracy and corruption. Such approaches neglect the role of individual attitudes vis-à-vis their governments. Building on a recent work that discusses left-right propinquity between voters and cabinets as a significant predictor of satisfaction with democracy, the present paper attempts to fill this gap in the extant literature by examining whether citizens’ ideological distance from their governments exerts an independent effect on life satisfaction. We utilize a dataset that includes 40 country observations and nearly 70,000 respondents over a period of more than a quarter century. Both the combination of macro- and micro-level political variables and the longitudinal and geographical coverage of our data constitute important methodological advances. Is there any relationship between ideological proximity to one’s own cabinet and individual happiness? Is there any mediating impact played by individual ideological orientation? Do moderate ideological cabinets promote more happiness among citizens than radical ones? These are some of the questions that we will try to answer in our paper.

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The political science community has rarely given much attention to one of the most pertinent topics in people’s daily lives, namely whether they feel happy. Instead, insights into factors that affect levels of life satisfaction often come from works by economists (e.g. Bjørnskov et al. 2008; Blanchflower and Oswald 2004; Di Tella et al. 2001; Easterlin 1995, 2001; Frey and Stutzer 2000, 2002; Helliwell 2003; Ovaska and Takashima 2006). While this may reflect the sizeable - and intuitively understandable - impact of economic variables on happiness, there are also significant political factors. Examination of such political influences has mostly concentrated on macro level variables, such as institutional conditions (Bjørnskov et al. 2010; Veenhoven 1996), quality of governance (Helliwell and Huang 2008; Ott 2010), and policy outputs (Pacek and Radcliff 2008). The present study contributes to the literature on happiness by exploring how it can be affected by ideology, a relationship largely overlooked heretofore.

Among the few studies on happiness (sometimes referred to as ‘subjective well-being’) that included ideology as an independent variable, Taylor et al. (2006) found that right-leaning citizens in the US report higher levels of happiness after controlling for income, and Tavits (2008) corroborate this result in a comparative analysis of sixteen countries. Other scholars addressed this subject by exploring the impact of governments’ ideological position on life satisfaction (Alvarez-Díaz et al. 2010; Di Tella and MacCulloch 2005). We combine these two approaches by investigating the effect of both individual self-placements on the left-right spectrum and proximity to their government’s location along the same scale. While the latter topic has previously been analyzed in terms of the quality of representation (Brunell 2006; Powell 2000), or satisfaction with democracy (Curini et al. 2012), to our knowledge this is the first study to discuss whether and how it may affect happiness. To investigate this question, we utilize a large dataset encompassing 70,000 cases from forty countries that span a quarter century.

This study is organized as follows: The next section reviews the growing literature on the
determinants of happiness. Section three expounds on the relationship between ideological orientation and happiness, leading to four hypotheses. Section four introduces the dataset and describes each variable in our equation, including both country- and individual-level controls. Next, we present and analyze empirical results, highlighting distinct tendencies between ideologically moderate and extreme respondents. The last section summarizes our findings and discusses their implications.

Life Satisfaction: definitions and determinants

Defining and measuring life satisfaction

The search for determinants of life satisfaction has generated a large volume of studies by economists, psychologists, and political scientists. Before discussing the literature, it is necessary to define what life satisfaction entails. According to Diener (1984), this term refers to ‘a global assessment of one's life as a whole,’ and such assessment is the result of a cognitive process. Some scholars use the term subjective well-being (SWB), and point out that SWB contains at least two distinct dimensions: life satisfaction and affect (Suh et al. 1998:484). However, since affect does not correlate highly with life satisfaction (Campbell et al. 1976), the present paper will focus solely on the latter.

In addition to life satisfaction, happiness is also a widely used term in the literature. While some scholars have distinguished the two concepts, describing the former as cognitive, and the latter affective (see McKennell and Andrews 1980), other works treat them as measuring the same, or at least closely proximate, underlying notion (Veenhoven 1984, Wheeler 1991). Empirical analysis has confirmed ‘a very strong congruence of both concepts’ (Schyns 1998:11), suggesting that ‘the two constructs may not differ’ (Crooker and Near 1998:220). Thus, it is common to use happiness and life satisfaction interchangeably in the empirical literature (e.g. Bjørnskov 2003, Frey and Stutzer 2002), and we follow the same practice.
Scholars have also discussed the validity of using responses to survey questions as an indicator of happiness (Diener 1984, Veenhoven 1993). While one may question whether national differences render subjective responses unreliable, Schnys (2002) found that survey questions on life satisfaction yield valid information, and Helliwell emphasized that this subjective measure ‘produces a consistent set of forward-looking decisions and backward-looking evaluations’ (2006:C35-36). These results confirm that ‘reported subjective well-being is a satisfactory empirical approximation to individuality utility’ (Frey and Stutzer 2002:408). Moreover, life satisfaction scores are comparable across countries (Veenhoven 2000) and not systematically biased due to social desirability (Konow and Earley 2008).

Determinants of Life Satisfaction

While studies on determinants of happiness have examined a wide array of variables, these can be grouped into four broad categories. First, a number of socio-demographic factors have often identified as important influences on subjective life satisfaction. For example, Blanchflower and Oswald (2002) reported that older and married citizens are more satisfied, while Bjørnskov et al. (2008) listed gender and the frequency of religious attendance among factors that significantly affect life satisfaction. The impact of religiosity is also mentioned by Clark and Lelkes (2005).

Economic variables constitute the second set of factors influencing life satisfaction (Diener and Oishi 2000, Easterlin 1974, 1995). Many works have affirmed a positive relationship between income and life satisfaction (e.g. Diener and Diener 1995, Frey and Stutzer 2000), though this association is not always linear due to the ‘diminished marginal utility of money’ as one becomes richer (Veenhoven 1995:63). Accordingly, changes in income exert only marginal influence on happiness in wealthy countries (Helliwell 2006, Ovaska and Takashima 2006). Within countries, income makes a greater difference among the poor (Graham and Pettinato 2001). Additionally, it is often one’s relative income that affects life satisfaction (Clark and Oswald 1996, Easterlin 1995, 2001, Layard 2006). Concerning
economic indicators other than income, Schyns found GDP per capita as a significant predictor of life satisfaction across countries, though this effect disappears in sub-samples consisting of rich and poor nations only (1998:16-17). Ovaska and Takashima (2006) reported that both GDP per capita and changes thereof influence levels of happiness, but with limited substantive impact. Frey and Stutzer (2000) underlined that the unemployed profess a significantly lower level of life satisfaction.

The third set of factors affecting happiness comprises of individuals’ psychological traits. It is hardly surprising that personal attitudes and preferences would influence how individuals interpret information and thus form judgments about their conditions in life (Clore et al. 1994). Diener and Lucas conjectured that personality or even genetic differences may exert an influence equal to or greater than external conditions such as economic circumstances (1999:214), and Emmons and Diener concluded that life satisfaction is driven by ‘some combination of interpersonal competencies and internal states’ such as self-esteem (1984:94). The impact of personality is not restricted to the individual level. Kahneman and Riis (2005) mentioned that aggregated personality differences may affect life satisfaction comparability across countries. Suh et al. (1998) identified different basis for judging life satisfaction, with societal norms playing a bigger role for assessment of subjective happiness for respondents in countries with ‘collectivist’ than ‘individualist’ cultures (see also Triandis 1995).

Lastly, political factors can influence life satisfaction. Most studies that pursue this line of research concentrate on comparing how regime and institutional differences across countries or sub-national regions affect citizens’ level of happiness. Others emphasized institutional quality as a key contributor (Helliwell 2006, Ovaska and Takashima 2006). For instance, Helliwell and Huang (2008) pointed out that honest and efficient delivery of public services increase happiness in poor countries, while life satisfaction in rich countries is more influenced by the conduct of political and electoral institutions. Also, a number of scholars found that direct democracy raises life satisfaction (Budge 1996,
Cronin 1989), because it allows citizens a greater say in monitoring and controlling policy outputs – labeled ‘procedural utility’ by Frey and Stutzer (2002). Several scholars have investigated whether democracy itself contributes to life satisfaction. While democratic institutions may not constitute the main determinant of human happiness (Inglehart and Klingemann 2000:180), a number of studies confirmed a link between democracy or democratic values and happiness (Graham and Pettinato 2001, Haller and Hadler 2006). For example, Dorn et al. (2005) reported that a country’s Freedom House or Polity IV index score has a substantial impact on its aggregate level of life satisfaction. In contrast, Bjørnskov et al. (2008) produced the opposite result using both Polity IV scores and indicators of good governance such as freedom of the press and low corruption. Part of this discrepancy may lie in the sample of countries analyzed in each study.

How governments’ policy profile influences citizens’ life satisfaction has received less scholarly attention. The main exceptions involve Radcliff and his co-authors: contrary to an earlier study that reported ‘no link between the size of the welfare state and the level of well-being within it’ (Veenhoven 2000:91; see also Tavits 2008), and Pacek and Radcliff found in a cross-national study that ‘the welfare state contributes to human well-being’ (2008:272; see also Radcliff 2001).¹

**Ideological Orientation and Happiness**

These results raise the question of whether the relationship between policies and happiness is based solely on how much citizens benefit from them, or also derives from their policy preferences. In other words, does ideological orientation exert an independent influence on life satisfaction? Taylor et

¹ A comparison among U.S. states showed that greater government spending, less market-friendly policies, and longer periods of state legislatures controlled by the Democratic Party are all significantly associated with higher life satisfaction (Alvarez-Díaz et al. 2010).
al. (2006) showed that right-leaning citizens in the United States are happier than their leftist compatriots regardless of which party is in power. Similar findings are also reported in Schlenker et al. (2012) and Napier and Jost (2008). In a rare cross-national study that also look at the role of ideology at the individual level, Tavits (2008:1620) reached the analogous conclusion that respondents professing rightist orientations are significantly more satisfied after controlling for several individual variables.

Three main explanations are advanced in this regard. First, ideological position may capture the effect of transcendent moral beliefs, particularly religion. Right-leaning respondents tend to be more religious, and religiosity has been found to positively affect happiness (Frey and Stutzer 2002). Second, there may also be some income effects, given positive correlations between ideology and income and between income and happiness. Finally, Napier and Jost (2008) proposed a “system justification theory perspective”: someone who is happy with the existing social order would prefer an ideology that stresses preserving the status quo (i.e., conservatism). Conversely, left-wing ideology, often associated with progressivism, is likely to attract people dissatisfied with the status quo.

Based on findings reported in the aforementioned studies, we formulate our first hypothesis:

**H1 (ideological position hypothesis):** Citizens with right-leaning ideological orientations report higher levels of happiness than those who place themselves on the left.

While this hypothesis derives from recent comparative studies, one may turn to an alternative proposition highlighting the *contrast* between extreme and centrist ideological positions rather than left and right. As long as half a century ago, several scholars described similarities shared by right- and left-wing extremists: authoritarian attitudes, dogmatism, and radical methods of political engagement (Eysenck 1954, Rokeach 1960, Shils 1954). McClosky and Chong pointed out that extremists on both ideological ends are characterized by discontent with the status quo, resentment toward mainstream
politicians and policies, and attraction to totalitarian measures (1985:343). Greenberg and Jonas (2003) concluded that, in addition to left versus right, there exists a separate ideological dimension pitting those who adhere rigidly to their views (radicals) against those who are more flexible (centrists). Other works demonstrated that extremists are more cognitively sophisticated than centrists because they have greater need to justify their views (Kemmelmeier 2008, Sidanius 1985). These findings shed important insight for our analysis below.

Based on the literature, two opposite albeit equally plausible hypotheses on the relationship between ideological extremism and happiness can be advanced:

\textit{H2a (ideological extremism hypothesis): Citizens holding ideologically extreme positions report lower levels of happiness than moderates due to their feeling of persecution and alienation.}

\textit{H2b (ideological extremism hypothesis): Citizens holding ideologically extreme positions report higher levels of happiness than moderates due to stronger belief in the veracity of their views.}

In addition, one may surmise that what matters for life satisfaction is not simply the ideological profile of the government \textit{per se}, but rather the relationship between the government and the voters. Whether and how ideological proximity to the government has any bearing on citizens’ life satisfaction has been a largely neglected topic.\textsuperscript{2} Insomuch as a government’s economic and social policies are

\textsuperscript{2} Di Tella and MacCulloch found that respondents are substantially “happier when the party in power has a similar ideological position to themselves” (2005:378; see also Dreher and Öhler 2011). However, the authors collapsed both respondents’ and governments’ ideological positions into three categories (left, moderate and right), which precluded more sophisticated analysis on distinctions within each set.
predicated on its ideological stance, outputs may depend on which party is in power, *ceteris paribus*, and citizens may be happier with a government pursuing a program closer to their own views. Furthermore, according to the spatial theory of voting (Downs 1957, Adams et al. 2005), a voter derives higher utility from programs implemented by parties which are ideologically closer to her own ideal point. If proximity models can explain vote choice, citizens may also make similar assessments when evaluating the impact of government programs on their life satisfaction.

Second, citizens may feel happier simply due to having like-minded people in government, without any necessary regard to the eventual policy programs it implements. Indeed, party labels are often not accurate indicators of government ideology, given that actual government policy-making is invariably subject to real-world political and financial constraints. These two logically intermingled reasons are likely to apply simultaneously, and for the purpose of this study they lead to the same

Moreover, they did not check for the relationship between proximity and citizens’ self-placements, as we will do below.

3 Tavits (2008) showed that people who supported parties in government report significantly higher levels of subjective well-being than those who voted for opposition parties. This is attributed to an increase in perceived efficacy through winning an election. Although Tavits focused the electoral winners/losers distinction rather than on voter-government distance, to the extent that ideological proximity predicts vote choice (see Adams et al. 2005, Alvarez and Nagler 1998), the two explanations overlap to some degree. Unfortunately information on respondents’ vote choice is not available in the dataset we use. Consequently, respondent’s winner/loser status is not controlled for in our analysis.

4 Swank (1988), for example, found evidence that government ideology affects the size of the public sector (see also Blais et al. 1993), while McDonald and Budge (2005) show a less clear cut relationship. Stronger evidence for the effect of ideology comes from studies that focus on particular types of spending (see Hicks and Swank 1992).
hypothesis:

*H3 (ideological proximity hypothesis): The proximity between citizens’ and their government’s position along the ideological spectrum is directly related to their level of happiness.*

**Data and measurement**

To test our hypotheses, we use the individual-level measures of life satisfaction and ideological position obtained from the World Values Survey (WVS), which employs the same battery of questions across countries and time with respect to our main variables of interest. Five waves of the WVS have already been conducted (roughly 1980, 1990, 1995, 2000, and 2005), containing representative samples of about 1,000-1,500 respondents in each participating country. Our sample consists of countries rated ‘free’ by Freedom House at the time of the survey. We have selected this subset of countries because a fair, competitive context is a prerequisite to analyzing how the relationship between the ideological positions of individual respondents and their governments affects happiness. This leaves us with data from 40 countries, covering not only Western Europe, but also Eastern Europe, South America and Asia (see Table 1), for an average of 2 surveys per country during 1981-2007. The total number of observations is around 70,000, the largest we could analyze without missing key variables (see below).
Table 1. *Countries covered in the study (and the corresponding WWS wave)*

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Our dependent variable is respondents’ level of satisfaction with life (SWL). In each survey, respondents are asked: “All things considered, how satisfied are you with your life as a whole these days?” Possible response categories range from “dissatisfied” (1) to “satisfied” (10). The mean value in our sample is around 7.0, with a standard deviation of 2.1, which suggest considerable variation in SWL in our dataset.

Respondents’ ideological self-positioning (labeled SELF) is measured on a 10-point scale, ranging from 1 (‘leftist’) to 10 (‘rightist’). Responses to this question also encompass a great deal of variation: the mean value of SELF is 5.40, with a standard deviation of 2.09. It is worth noting that the proportion of respondents who placed themselves on either ideological extreme (i.e. SELF<2 and SELF>8) is around 19%.

To test $H3$, it is necessary to measure both governments’ ideological position and voter-government spatial distance (labeled ‘PROXIMITY’). Since the WWS dataset does not contain any questions on voter perceptions of parties’ ideological locations, cabinet position in each country is derived from a pool of six expert surveys that report the spatial location of parties along a left-right dimension: Castles and Mair (1984), Huber and Inglehart (1995), Benoit and Laver (2006), Wiesehomeier and Benoit (2009) the Chapel-Hill expert-surveys (Steenbergen and Marks 2007) and the expert scores included in the Comparative Study of Electoral Systems (CSES) dataset.5

In all cases, the position of the cabinet in country $i$ at the time $j$ when the WVS survey was administered ($\overline{P}_j$) is estimated as the average position of parties in government weighted by their respective vote share. This is based on previous studies concluding that government policy positions

5 Note that relying on an exogenous measure of party position other than survey respondents, as we do here by employing expert-survey scores, neutralizes any risk of projection (or rationalization) bias on voters’ perceptions about party locations (Merrill and Grofman 1997).
better tracks the weighted mean position of cabinet parties instead of a simple average (see Warwick 2001). Also, we always selected parties’ scores from the expert survey temporally closest to the corresponding WVS wave to estimate government positions in each country. Finally, to allow for direct comparisons, we normalized all the expert left-right scores on a 0 to 10 scale (see Gabel and Huber 2000 on this transformation), and applied the same normalization procedure to the SELF variable.

As a result, our PROXIMITY variable (i.e., the spatial distance between voter $i$ and government $j$) is estimated as the negative quadratic distance between SELF and $\overline{P}_{ij}$:

$$PROXIMITY_{aij} = -\left(SELF_{aij} - \overline{P}_{ij}\right)^2 \quad (1),$$

where:

$SELF_{aij}$ = the ideal point of voter $a$ in country $i$ at time $j$ along the left-right spectrum;

$\overline{P}_{ij}$ = the position of the government in country $i$ at time $j$ on the same spectrum.

In our sample, the average value of PROXIMITY is -8.2, with a standard deviation of 10.9.\footnote{According to (1) citizens are assumed to be risk-averse (i.e., they incur increasing marginal disutility when the distance between their own ideological position and that of the government increases). This seems a reasonable assumption that applies to vote choice as well (see Adams et al. 2005). However, we also estimated two different variants of PROXIMITY. First, we estimated $\overline{P}_{ij}$ by simply averaging the positions of all cabinet parties. Secondly, we employed a linear rather than a quadratic utility function. Neither approach affects our main findings.}

**Control variables**

It is necessary to control for a number of variables at both individual and country levels that have been found significant in the large empirical literature discussed above (see list in the Appendix). With respect to the micro (individual) level, in addition to socio-demographic factors typically employed in...
various extant studies (e.g. gender, marital status, age and age-squared, to account for the curvilinear relationship between age and satisfaction), we also include variables measuring respondents’ self-reported health, given the strong correlation between this indicator and subjective well-being (Frey and Stutzer 2002), their level of generalized interpersonal trust as a proxy for cognitive social capital (Helliwell 2003; Helliwell and Huang 2008), level of satisfaction with one's own household financial situation, a dummy for parenthood (coded 1 for those respondents who have at least one child) (Tavits 2008), and the Inglehart post-materialist index included in the WVS. Finally, we also included two further micro-level variables that, as noted above, could confound the relationship between SELF and life-satisfaction. First, a religion attendance variable is used as a proxy for religiosity; Second, a variable related to income estimated as follows: by employing a subjective answer on a ten-category income scale question included in the WWS, where the income brackets have been measured in each country’s own currency, we measured the median income level in that country. Our dummy income variable assumes the value of 1 if the respondent reports an income above the median in her country. Using the original income scale does not affect any of our findings.

On the aggregate (i.e., country) level, we control for the following variables:

a) Economic performance. The worse (better) a country’s overall recent economic performance, the lower (higher) satisfaction with life should be. To estimate this variable we included each country’s average growth rate in the 5 years preceding the survey year (source: World Bank).

b) Due to debates over the effect of economic development on happiness, we also include the logarithm of GDP per capita, estimated using the Purchasing Power Parity (PPP) (source: World Bank).

c) A country’s average unemployment rate in the 5 years preceding the survey is a macro-economic factor that may negatively affect life satisfaction (Di Tella et al. 2001) (source: World Bank).

d) Quality of institutions. Formal institutions that promote the quality of resource allocation and
public goods provision should increase life satisfaction (Helliwell and Huang 2008). Our model includes the first dimension scores extracted from a principal component analysis of the widely used World Bank governance indicators relating to effectiveness, regulatory efficiency, rule of law, lack of corruption, voice and accountability, and political stability (Kaufmann et al. 2002).\(^7\)

e) We also include dummies for post-communist countries, Latin America and Asia, which previous research showed to be highly significant (Bjørnskov et al. 2008, 2010). Besides controlling for sets of nations perceived as culturally similar, these dummies also largely correspond to new democracies (with few exceptions such as Japan among Asian countries).

f) Finally, we added period fixed effects to the model (one dummy for each wave of WVS) to account for joint macro trends over time, such as business cycles, and of the changing country composition of our sample across waves.

**Empirical analysis**

Since our dependent variable (SWL) is a ten-point scale, a linear regression assuming interval level measurement is not an appropriate method of analysis. Instead, we decided to use an ordered logistic model. In addition, we also correct standard errors for intra-group-correlation and heteroskedasticity through clustering of individuals at the country-year level (e.g., Spain 1981, Spain 1990, etc.). This approach ensures that the calculations of standard errors for all the macro-independent variables are based on the number of country-year observations only, irrespective of the number of respondents interviewed in any specific country and time. We also ran a sequential ordered logit (which

\(^7\) The six governance indicators load highly on one single underlying dimension (eigenvalue of the first factor is 5.3, explaining 88% of total variance; the eigenvalue of the second factor is a mere .279). Including them in our analysis separately, or in some other combination (as done in Helliwell and Huang 2008), risks collinearity problems.
relaxes the assumption of parallel regression of an ordered logit: Boes and Winkelmann 2004). All the qualitative results also apply in this framework. Moreover, the sequential ordered logit confirms that the categories of our dependent variable are monotonically related to an underlying latent variable, thus affirming that the ordered logistic model is appropriate. A multilevel ordered logit (Raudenbush and Bryk 2002) yields quite similar results.\(^8\)

In any ordered logistic model, an underlying score is estimated as a linear function of the independent variables and a set of cut points (or thresholds). The probability of observing a given outcome therefore corresponds to the probability that the estimated linear function is within the range of the cut points estimated for the outcome. In our case, there are ten possible categories (from 1 to 10). We are interested in identifying at which point of the latent scale the category “1” changes to “2” (and similarly for the other categories). This is what we mean by “cutting point”. In particular, in all the subsequent analyses, our *benchmark score* will be the probability of moving above the cut point of 7, that is, the probability of being more satisfied than the average value in our sample.

Table 2 reports the seven models we estimated.

---

\(^8\) Clustering the standard errors for country only (i.e., Japan, Italy, etc.) does not substantially affect any of our findings. The same holds true if we introduce fixed effects for each country. As a further control check, we also estimated a model by running a simple OLS regression. Results obtained are once again very similar to those presented below. All data are available from the authors upon request.
<table>
<thead>
<tr>
<th>Country-Year attributes:</th>
<th>Model 1 (Sat.Life)</th>
<th>Model 2 (Sat.Life)</th>
<th>Model 3 (Sat.Life)</th>
<th>Model 4 (Sat.Life)</th>
<th>Model 5 (Sat.Life since 1996)</th>
<th>Model 6 (Sat.Life)</th>
</tr>
</thead>
<tbody>
<tr>
<td>log of gdp per capita</td>
<td>0.265*</td>
<td>0.245</td>
<td>0.248*</td>
<td>0.251*</td>
<td>0.325*</td>
<td>0.305</td>
</tr>
<tr>
<td>(0.149)</td>
<td>(0.150)</td>
<td>(0.149)</td>
<td>(0.149)</td>
<td>(0.149)</td>
<td>(0.197)</td>
<td>(0.159)</td>
</tr>
<tr>
<td>avg growth 5 years</td>
<td>0.0627*</td>
<td>0.0615*</td>
<td>0.0612*</td>
<td>0.0587*</td>
<td>0.0591*</td>
<td>0.0535</td>
</tr>
<tr>
<td>(0.0199)</td>
<td>(0.0197)</td>
<td>(0.0198)</td>
<td>(0.0199)</td>
<td>(0.0199)</td>
<td>(0.0234)</td>
<td>(0.0205)</td>
</tr>
<tr>
<td>income*log of gdp per capita</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-1.66*</td>
<td>-1.67*</td>
<td>-1.63*</td>
</tr>
<tr>
<td>(0.0662)</td>
<td>(0.0555)</td>
<td>(0.0675)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>avg. rate of unemployment 5 years</td>
<td>-0.0140*</td>
<td>-0.0146*</td>
<td>-0.0146*</td>
<td>-0.0145*</td>
<td>-0.0147*</td>
<td>-0.0112</td>
</tr>
<tr>
<td>(0.00831)</td>
<td>(0.00841)</td>
<td>(0.00835)</td>
<td>(0.00821)</td>
<td>(0.00823)</td>
<td>(0.0130)</td>
<td>(0.00819)</td>
</tr>
<tr>
<td>quality of institutions</td>
<td>0.0762</td>
<td>0.108</td>
<td>0.107</td>
<td>0.106</td>
<td>0.108</td>
<td>0.152</td>
</tr>
<tr>
<td>(0.135)</td>
<td>(0.134)</td>
<td>(0.133)</td>
<td>(0.132)</td>
<td>(0.132)</td>
<td>(0.164)</td>
<td>(1.205)</td>
</tr>
</tbody>
</table>

Table 2. Explaining the Happiness across the World - Ordered logit regression
- quality of institutions*log of gdp per capita

**Country attributes:**

- Asia
  - $-0.596^{***}$
  - (0.157)
- East Europe
  - $-0.0356$
  - (0.147)
- South America
  - $0.649$
  - (0.292)

**Temporal variables:**

- wave 2
  - $-0.189$
  - (0.153)
- wave 3
  - $-0.230$
  - (0.175)
- wave 4
  - $-0.314$
  - (0.236)
- wave 5
  - $-0.334$
  - (0.219)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>cut1</td>
<td>-1.593</td>
<td>(1.283)</td>
<td>-1.216</td>
<td>-2.052</td>
</tr>
<tr>
<td>cut2</td>
<td>-1.000</td>
<td>(1.280)</td>
<td>-1.525</td>
<td>-1.461</td>
</tr>
<tr>
<td>cut3</td>
<td>-0.171</td>
<td>(1.278)</td>
<td>-0.699</td>
<td>-0.635</td>
</tr>
<tr>
<td>cut4</td>
<td>0.492</td>
<td>(1.276)</td>
<td>-0.291</td>
<td>-0.303</td>
</tr>
<tr>
<td>cut5</td>
<td>1.568</td>
<td>(1.281)</td>
<td>1.038</td>
<td>1.102</td>
</tr>
<tr>
<td>cut6</td>
<td>2.271</td>
<td>(1.276)</td>
<td>1.741</td>
<td>1.805</td>
</tr>
<tr>
<td>cut7</td>
<td>3.225</td>
<td>(1.273)</td>
<td>2.696</td>
<td>2.760</td>
</tr>
<tr>
<td>cut8</td>
<td>4.644</td>
<td>(1.273)</td>
<td>4.121</td>
<td>4.185</td>
</tr>
<tr>
<td>cut9</td>
<td>5.685</td>
<td>(1.265)</td>
<td>5.181</td>
<td>5.168</td>
</tr>
</tbody>
</table>

| Observations | 69705 | 69705 | 69705 | 69705 | 42601 | 69705 |
| Pseudo $R^2$ | 0.100 | 0.101 | 0.101 | 0.102 | 0.102 | 0.113 |
| AIC         | 251869.1 | 251610.5 | 251609.5 | 251577.2 | 251531.6 | 154147.5 | 251515.1 |
| BIC         | 252162.0 | 251912.5 | 251920.7 | 251906.6 | 251870.2 | 154450.6 | 251862.9 |
| Log likelihood | -125902.6 | -125772.2 | -125770.8 | -125752.6 | -125728.8 | -77038.7 | -125719.5 |
| Chi squared | 3253.7 | 3923.2 | 4115.0 | 4217.0 | 3611.6 | 3756.5 | 3502.3 |

Clustered Standard errors over Country*Year in parentheses

Source: WWS (all 5 waves)

* $p < 0.10$,  ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$
Model 1 directly tests the “ideological position hypothesis” (H1). Confirming previous works, the SELF variable is highly significant with a positive sign in our analysis, meaning that right-leaning citizens seem significantly more satisfied than their leftist counterparts. Note that this is true after controlling for income and religion attendance, two of the main reasons advanced in the literature to explain the positive relationship between SELF and life satisfaction. This suggests some deeper motivations behind the association between conservatism and happiness. To explore such linkage in more detail, in Model 2 we introduced a SELF-squared variable to check our alternative hypothesis $H2$ centred on the possibility of a curvilinear relationship between ideology and happiness. The results show that the squared term of SELF is significant, and that Model 2 clearly improves upon Model 1 (as can be seen by looking at both information criteria: AIC and BIC). As SELF increases, now SWL decreases until reaching a minimum around 4, after which it increases again. Therefore, between the rival hypotheses $H2a$ and $H2b$, empirical analysis supports the latter. In other words, respondents holding ideologically extreme positions appear to have higher levels of happiness than moderates.

Figure 1 clearly illustrates this point. In this graph we plotted the probability of reporting a life satisfaction above 7 as the value of SELF changes, holding all other variables fixed at their mean. One can easily observe that Model 2 predicts a quadratic relationship. While it is true that conservatives are happier than progressives, as underlined by the literature, both groups are clearly more satisfied than centrists.
In Model 3, we introduced the PROXIMITY variable in order to test our “ideological proximity hypothesis” (H3). While this model is an improvement over Model 2 (by looking once again at the information criteria), and the new variable has the expected positive sign, PROXIMITY fails to reach conventional statistical significance. However, this is not the last word on the issue. Indeed, as noted above, according to $H2b$ radical citizens seem to profess a higher level of happiness. We argued previously that greater life satisfaction among radicals might derive from a stronger belief in the veracity of their views. However, if their higher level of happiness also derives from perceiving themselves as part of a minority (a kind of “elitist” attitude), then anything that threaten this status (for example, a cabinet closer to their own radical position) should decrease it.  

9 While only a speculative proposition, a famous quote from the Italian film “Caro Diario” (My beloved diary), winner for Best Director at the 1994 Cannes Film Festival, is illustrative in this regard.
assumes that moderates base their subjective life satisfaction on *utilitarian* considerations, with an emphasis on concrete gains or losses resulting from the implementation of certain policies, in contrast to extremists who derive happiness mainly on *expressive* grounds (Brennan and Lomasky 1993), and for whom abstract self-justifications matter more for feeling satisfied with their lives.

Alternatively, it is possible that radicals could be the ones most easily disappointed by contradictions between the stated policy positions of a government theoretically close to their own views and its actual (policy) performance and decisions. This could happen given that a (relatively) radical cabinet, compared to a moderate one, faces considerably greater external and internal difficulties when trying to pursue its ideal policies to alter the status quo, and citizens closer to this cabinet could be particularly frustrated about such a situation.\(^{10}\) In contrast, the previous mix between expectations of large-scale change and (inevitable?) later disillusionment (see Stimson 1976) is less likely among centrist voters, precisely because they are usually located closer to the status quo.

Regardless of which of these two possible explanations is more valid, in both cases it is appropriate to add interactive terms between SELF, SELF-squared, and PROXIMITY to our analysis, while assuming that \( \frac{\partial (SWL)}{\partial (SELF)} \) is decreasing when PROXIMITY decreases at the two tails

---

Nanni Moretti, the movie’s director and protagonist, comments at one point: “Do you know what I was thinking about? […] that even by living in a society better than this one, I would always agree with a minority.... I believe in people, I just do not believe in the majority of people. I suspect that I will always feel myself more at my place, and be in agreement, with a minority...” (see [http://www.youtube.com/watch?v=cvrRF6un-NU](http://www.youtube.com/watch?v=cvrRF6un-NU)). This statement clearly highlights both the joy of identifying oneself as part of a minority and the reluctance of losing this status.

\(^{10}\) See McDonnell and Newell (2011) and Deschouwer (2008) for the difficulties faced by radical parties in cabinet to control the government agenda.
of the distribution of SELF (i.e., for citizens that place themselves at the extremes of the left-right dimension). Conversely, we should expect $\frac{\partial (\text{SWL})}{\partial (\text{PROXIMITY})}$ to be substantially higher (lower) for moderate (radical) values of SELF.

This is what we tested in Model 4. Results show that both terms involving an interaction between PROXIMITY and SELF (and SELF-squared) are highly significant. In order to understand the substantive magnitude of the effects found in Model 4, as well as the associate uncertainty, we simulate the marginal effect on our life satisfaction benchmark score by moving PROXIMITY from its mean (-8.2) to a rather low value (-0.5) (a change that corresponds to roughly one-half of standard deviation decrease in PROXIMITY) as SELF changes (see King et al. 2000). The results confirm our hypothesis: the marginal effect of PROXIMITY is not significant at more radical ideological positions (less than 2 and higher than 7), while its impact is largest for moderate respondents (self-positions of 5 and 6). This effect is not negligible: for a person ideologically placed at 5, for example, the marginal effect of PROXIMITY increases our benchmark by 1.5%, comparable to the impact of socio-demographic variables such as gender, parenthood or religious attendance (see below).

---

11 The simulation uses 10,000 draws from the estimated coefficient vector and variance-covariance matrix of Model 4 from Table 2.
Figure 2. The marginal effect of PROXIMITY on the probability that Life Satisfaction is higher than 7 as SELF changes

![Graph showing marginal effect of PROXIMITY on Life Satisfaction](image)

Similarly, Figure 3 reports the marginal effect of a one-unit increase in SELF on our benchmark life satisfaction score as both SELF and PROXIMITY change, holding all the other variables fixed at their mean. The figure shows that the marginal impact of SELF is very large at the extreme values of SELF when an individual is far away from the government position (i.e., high value of PROXIMITY). Indeed, at the negative extreme of PROXIMITY (-50), increasing SELF from 0 to 1 (i.e., moving toward a slightly less radical position) decreases this probability by 6%, while increasing SELF from 9 to 10 (i.e., becoming even more radical) increases the same probability by 8%. In contrast, increasing SELF from 4 to 5 (that is, moving toward the centre) has a negligible effect on satisfaction. At the same time, as we keep reducing the value of PROXIMITY, the marginal impact of SELF at its extreme values also declines. For example, when PROXIMITY equals 0, then moving SELF from 0 to 1 decreases the probability by 2% (only one-third of the previous magnitude), while moving SELF from
9 to 10 increases the same probability by 3.8% (less than half compared to the previous scenario).

**Figure 3.** The marginal effect of SELF on the probability that Life Satisfaction is higher than 7 as SELF as well as PROXIMITY changes

Normally, of course, a government would position itself near the centre of the ideological scale, i.e., quite far from the two extremes. Therefore the former example represents just a hypothetical scenario (given that no government in our dataset is located at 0 or 10 on the left-right scale). Nevertheless, this illustration is quite relevant when one focuses on the linkage between voters’ and governments’ ideological positions.

Indeed, according to results in Model 4, if the government is ideologically moderate, than centrist voters, who constitute the vast majority of respondents in every country analyzed here, will be (slightly) happier (as illustrated in Figure 2). Moreover, the same should happen to extreme voters, given that they are by definition far away from a moderate government (as illustrated in Figure 3). In fact the magnitude of this effect is larger than for moderate. Conversely, an ideologically radical government
would make centrist voters less happy (since the cabinet is spatially distant from them, i.e. the value of PROXIMITY decreases), while it produces contrasting (and therefore possibly null) effects for extreme voters: if we have an extreme leftist government, for example, then the extreme right voters would be happier, while the extreme leftists would be less satisfied (precisely because now the cabinet is placed so close to themselves). The opposite happens when there is a radical right government. This is illustrated by Table 3. The conclusion is that a centrist government should increase citizens’ average level of happiness through a combination of effects found for the SELF and PROXIMITY variables.

Table 3. The linkage between cabinet and voters ideological positions and its expected impact on the average level of happiness within a country

<table>
<thead>
<tr>
<th>Voter Ideological Position</th>
<th>Government Ideological Position</th>
<th>Moderate</th>
<th>Extreme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate</td>
<td>Moderate</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Extreme</td>
<td>Moderate</td>
<td>+</td>
<td>+ and –</td>
</tr>
</tbody>
</table>

Table 4 tests the findings reported above. In particular, according to the estimations of Model 4, it shows what happens to the overall (country-level) probability of life satisfaction being higher than 7 (i.e., our benchmark score) when, counter-factually, the ideological position of the government changes from 3 to 7 (a reasonable range, since 70% of our observations fall into this span), given the actual distribution of SELF reported in our sample, while holding all other variables fixed at their mean.
Table 4. A counter-factual scenario: what happens to the overall probability of Life Satisfaction higher than 7 if the ideological-position of the cabinet changes

<table>
<thead>
<tr>
<th>Cabinet Ideological position on a 0 to 10 left-right scale</th>
<th>Probability</th>
<th>95% c.i.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0.440</td>
<td>0.438</td>
</tr>
<tr>
<td>4</td>
<td>0.482</td>
<td>0.482</td>
</tr>
<tr>
<td>5</td>
<td>0.503</td>
<td>0.502</td>
</tr>
<tr>
<td>6</td>
<td>0.501</td>
<td>0.500</td>
</tr>
<tr>
<td>7</td>
<td>0.478</td>
<td>0.477</td>
</tr>
</tbody>
</table>

Note. The probabilities are constructed using parameter estimates for Model 4 from Table 2.

As shown in the table, this probability changes in the expected direction: it increases as the government moves toward a more moderate position, and vice-versa. How relevant is this finding? If we compare the impact of a government’s ideological shift with, for example, a change in the rate of a country’s GDP growth, then moving the ideological position of a cabinet from 7 to 5 (that is, toward a more moderate position) produces roughly the same impact on happiness as that yielded by an increase of around 2% in average GDP growth over 5 years. This is not a negligible change.

With respect to the control variables, Table 5 reports their respective marginal effect on our benchmark, once again holding all other variables fixed at their means. All the individual-level variables are significant and carry the expected sign, with one exception. Satisfaction appears to increase among the healthy, married persons, parents, those who are satisfied with their financial situation, and those reporting higher generalized trust and more frequent religious attendance. In addition, happiness is higher among women and post-materialists (albeit only at the 90% confidence interval in the latter case), while presenting a (expected) curvilinear relationship with age (reaching its minimum value at around 48 years). However, we find a surprisingly negative and significant relationship between happiness and income: a person earning an above-median income appears less happy than someone below this median. It may be the case that the relationship between (personal) income and SWL is mediated by context, as pointed out in the previously quoted literature which
discusses the impact of relative income on happiness. In particular, one suspects that being wealthy should matter more for happiness when a person lives in a relatively poor country than in a richer one.

Table 5. Marginal effect of the control variables on our benchmark

<table>
<thead>
<tr>
<th>Individual attributes:</th>
<th>marginal effect</th>
<th>95% c.i.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- income*</td>
<td>-0.023</td>
<td>-0.038</td>
</tr>
<tr>
<td>- state of healthb</td>
<td>-0.128</td>
<td>-0.137</td>
</tr>
<tr>
<td>- post-materialismb</td>
<td>0.010</td>
<td>0.001*</td>
</tr>
<tr>
<td>- age (at age = 20)b</td>
<td>-0.005</td>
<td>-0.007</td>
</tr>
<tr>
<td>- age (at age = 40)b</td>
<td>-0.001</td>
<td>-0.002</td>
</tr>
<tr>
<td>- age (at age = 60)b</td>
<td>0.003</td>
<td>0.002</td>
</tr>
<tr>
<td>- gendera</td>
<td>0.029</td>
<td>0.020</td>
</tr>
<tr>
<td>- sat. with financial situationb</td>
<td>0.100</td>
<td>0.091</td>
</tr>
<tr>
<td>- religion attendanceb</td>
<td>-0.009</td>
<td>-0.012</td>
</tr>
<tr>
<td>- trust in peoplea</td>
<td>-0.041</td>
<td>-0.053</td>
</tr>
<tr>
<td>- being marrieda</td>
<td>0.095</td>
<td>0.082</td>
</tr>
<tr>
<td>- childrena</td>
<td>0.022</td>
<td>0.009</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Country-Year attributes:</th>
<th>marginal effect</th>
<th>95% c.i.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- log of gdp per capitab</td>
<td>0.062</td>
<td>0.001*</td>
</tr>
<tr>
<td>- avg growth 5 yearsb</td>
<td>0.015</td>
<td>0.005</td>
</tr>
<tr>
<td>- avg. rate of unemployment 5 yearsb</td>
<td>-0.004</td>
<td>-0.007*</td>
</tr>
<tr>
<td>- quality of institutionsb</td>
<td>0.027</td>
<td>-0.038</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Country attributes:</th>
<th>marginal effect</th>
<th>95% c.i.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Asiaa</td>
<td>-0.137</td>
<td>-0.208</td>
</tr>
<tr>
<td>- East Europera</td>
<td>-0.006</td>
<td>-0.078</td>
</tr>
<tr>
<td>- South Americaa</td>
<td>0.153</td>
<td>0.015</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temporal variables:</th>
<th>marginal effect</th>
<th>95% c.i.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- wave 2a</td>
<td>-0.046</td>
<td>-0.121</td>
</tr>
<tr>
<td>- wave 3a</td>
<td>-0.055</td>
<td>-0.140</td>
</tr>
<tr>
<td>- wave 4a</td>
<td>-0.073</td>
<td>-0.180</td>
</tr>
<tr>
<td>- wave 5a</td>
<td>-0.079</td>
<td>-0.181</td>
</tr>
</tbody>
</table>

Note: *marginal effect by a unit increase; b marginal effect by one half-standard deviation increase from the mean; * 90% confidence interval. The marginal effects are constructed using parameter estimates for Model 4 from Table 2. The confidence intervals are calculated via simulation using 10,000 draws from the estimated coefficient vector and variance-covariance matrix.

To investigate this point in greater depth, we include an interaction between income and the log of GDP per capita in Model 5. Once again the interaction term is significant, and it helps to partially clarify the puzzling result above. Figure 4 reports the marginal impact of income on our benchmark
score. At the 90% confidence interval, the marginal impact of income is positive and significant for low values of the log of GPD per capita (until 8, i.e. around $3,000 per capita). However, as personal income increases, living in richer countries exerts a negative impact on happiness among the wealthy. One possible explanation is that whereas rich individuals in poor nations are constantly reminded of their exceptional standing in comparison with their countrymen, there are more wealthy people in countries with higher GDPs per capita, and there tends to be frequent, perhaps even exclusive, interactions within this high-income circle. With their reference group confined to people of similar affluence, they may feel heightened motivation to acquire even greater wealth rather than satisfaction with their already sizeable fortune. This is in line with the proposition that ‘subjective well-being varies directly with income and inversely with material aspirations’ (Easterlin 2001:481, italics added).

Figure 4. The marginal effect of income on the probability that Life Satisfaction is higher than 7 as Log of GDP changes
Note, moreover, that the interaction between income and the log of GDP per capita also allows us to better elucidate the impact on happiness of living in a rich country. According to Model 5, the marginal impact of increasing GDP per capita by one standard deviation (roughly 10,000 dollars) on our benchmark is positive and statistically significant only among citizens with incomes lower than their national median (+5.5). In other words, as countries become more affluent, increasing national income makes the poor more satisfied (perhaps due to more economic opportunities or welfare), but has no effect for the wealthy. This is in line with previous findings (e.g. Dorn et al. 2005, Schnys 2002).

Regarding the other macro-control variables, one can see that satisfaction increases with improving economic trends (lower unemployment and higher GDP growth). Two of the three regional dummies are significant (positive for South America, negative for Asia), while all temporal dummies are not. Interestingly, even though the coefficient for Quality of Institutions has the expected positive sign, this variable is never significant, contrary to Helliwell (2006). However, we should note that the first observation for the World Bank governance indicators on which our Quality of Institution variable is estimated is 1996. To arrive at measures for earlier periods in our dataset, we followed Helliwell and Huang (2008) by extrapolating the World Bank data from 1996 into the past. Questions about the validity of this method may explain the insignificance of this variable.

In Model 6 we therefore replicate Model 5, but only analyzing WVS surveys since 1996. As seen in the second to last column of the table, all the previous results remain intact, while Quality of Institution is once again positive but insignificant. Helliwell and Huang (2008) also discussed the possibility that the impact of Quality of Institution is mediated by cross-national differences in wealth. In this regard, our final model replicates Model 5 but adds an interaction term between Quality of Institution and GDP per capita. However, this new interaction also fails to reach significance. This does not mean that the quality of institutions in a country does not matter for happiness. Rather, our
analysis shows that the effect of this factor is entirely absorbed by its impact on the economic variables. Indeed, if we re-run either Model 4 or 5 without the three macro-economic variables, *Quality of Institution* becomes highly significant.\(^{12}\)

**Conclusion**

Results presented in the preceding section confirm the relevance of ideology for happiness: both self-placement on the left-right spectrum and proximity to government positions exert a significant and sizable effect on life satisfaction after controlling for a wide range of factors at both the individual and country levels. While a number of previous works on determinants of happiness did take individual and government ideological placements into account, the present study utilizes a more sophisticated measure of the latter, and also examines data covering a much longer time span than most of the extant literature. These offer reasons for confidence in the robustness of our findings.

To summarize, there is a curvilinear relationship between ideological orientations and happiness, with those who locate themselves toward both extremes of the left-right scale feeling more satisfied with their lives than centrists. This challenges previous works which depicted a linear association, with higher levels of happiness among right-leaning individuals. Furthermore, we demonstrate that propinquity between self- and government positions on the left-right scale also contributes to happiness, but that this effect is heavily mediated by individual ideological orientation: centrists are more satisfied the closer they are to their government, while the opposite applies to extremists. Indeed, for citizens holding radical leftist or rightist views, proximity to the government has a *negative* effect on happiness.

A clear implication derived from these findings is that ideologically moderate governments

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\(^{12}\) This result may also be due to the fact that the sample of countries considered here is smaller than the one examined by Helliwell and Huang (2008). Given the aim of our analysis, we did not consider non-democracies (many of them poor) which were included in Helliwell and Huang’s study.
enhance the overall level of happiness, since centrists far outnumber extremists, and the former report higher levels of life satisfaction as their own left-right positions approach that of their government. In contrast, citizens with more radical orientations may prefer the (self-)perception of isolated ideological purity, and care little about where the cabinet stands, so being distant from a moderate government does not render them less happy. Thus, an extremist government would not only alienate the majority of voters who are moderates, but also fail to make more radical voters closest to its own position happier.

The implications of these findings are intriguing. Indeed, among the large literature on representation, policy congruence between voters and governments has often been used as an indicator of the quality of democratic representation (see Brunell, 2006; Buchler, 2005; Powell, 2000). Paskeviciute (2006) associates government policy representation with system support, and a number of other studies also suggest this relationship (e.g. Ezrow and Xezonakis 2011). The finding that voter-government ideological congruence significantly influences happiness, but only among centrists, leads to the conclusion that moderate governments have the advantage of not only improving representational quality and system support, but also boosting happiness among the citizenry.

The implicit assumption here, which holds true in most countries in our sample, is that citizens’ ideological orientations are normally distributed. Would this conclusion remain valid if a society becomes highly polarized, or if a large portion of voters are skewed toward one extreme or the other? How these scenarios may affect the relationship between ideological self-placement, voter-government ideological distance, and happiness calls for further examination. Another potential research topic concerns regional effects. Helliwell (2003) found lower levels of happiness in Eastern Europe, the ex-Soviet Union, and Asia, and higher life satisfaction in Scandinavia and Latin America compared with OECD countries. Our analysis corroborates these results for Asia and South America, though coefficients for Eastern Europe turned out to be insignificant. Yet the task of exploring the precise historical, cultural, or geopolitical factors underlying these regional distinctions awaits future scholars.
Appendix: data description of control variables

Individual level:

a) income: a dummy that assumes value of 1 if the respondent’s income is above the median income in her country

b) state of health: from very good (1) to very poor (4)

c) 4-item post-materialist values index: materialist (1), mixed (2), post-materialist (3)

d) age and age squared

e) gender: male (1), female (2)

f) satisfaction with financial situation of household: from 1 (dissatisfied) to 10 (completely satisfied)

g) religious attendance: from more than once a week (1) to never (8)

h) generalized trust: most people can be trusted (1), can’t be too careful (2)

i) married status: a dummy that assumes value of 1 if the respondent is married (or widowed, living together with his/her partner)

l) parenthood: a dummy that assumes value of 1 if the respondent has at least one child

Country-year level:

a) average GDP growth rate in the 5 years preceding the survey year

b) log of GDP per capita estimated using purchasing power parity (PPP)

c) average unemployment rate in the 5 years preceding the survey year

d) quality of institutions: first dimension scores extracted from a PCA analysis of the World Bank’s 6 governance indicators

e) three regional dummies: South America, Asia, Eastern Europe

f) four dummies for each wave of the World Values Survey (the first wave is the omitted category)
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