INEQUALITY AND HAPPINESS: ARE EUROPEANS AND AMERICANS DIFFERENT?

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ABSTRACT

The answer to the question posed in the title is "yes." Using a total of 128,106 answers to a survey question about "happiness," we find that there is a large, negative and significant effect of inequality on happiness in Europe but not in the US. There are two potential explanations. First, Europeans prefer more equal societies (inequality belongs in the utility function for Europeans but not for Americans). Second, social mobility is (or is perceived to be) higher in the US so being poor is not seen as affecting future income. We test these hypotheses by partitioning the sample across income and ideological lines. There is evidence of "inequality generated" unhappiness in the US only for a sub-group of rich leftists. In Europe inequality makes the poor unhappy, as well as the leftists. This favors the hypothesis that inequality affects European happiness because of their lower social mobility (since no preference for equality exists amongst the rich or the right). The results help explain the greater popular demand for government to fight inequality in Europe relative to the US.

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1. Introduction

Most governments redistribute income, using both direct and indirect means. Even though this role of the public sector has increased vastly in the last few decades in all industrial countries, European governments are more heavily involved with redistribution than that of the United States. European fiscal systems are more progressive than those in the United States and the welfare state is more widespread in Europe, where the share of government in the economy is substantially larger than in the United States. For instance, in 1996 the share of total government spending (excluding interest payments) over GDP was about 30 percent in the US, versus 44 percent in Europe. The share of transfers over GDP was about 14 percent in the US and about 22 percent in Europe.[1] The share of transfers over GDP was less than 1 percent in Europe and the US at the end of the nineteenth century, and it was about 6 percent of GDP in the US, and about 10 percent of GDP in Europe in 1960. The growth of transfers explains almost all of the difference in the size of government between Europe and the US.

If truly democratic governments redistribute so much, it must mean that a large fraction of the population favors these programs. For a start, the "poor" should be in favor of redistribution, since they gain from it on net. However, this preference is mitigated by the fact that the poor of today may become the rich of tomorrow and they may not want to be in the future the ones who will support redistributive schemes. Therefore, social mobility should influence how many individuals like redistributive polices.[2] Beyond self-interest, however, inequality (which is often associated with high poverty rates) may be perceived as a social evil. That is, at least up to a point, even the net losers from redistributive schemes may favor them because they perceive poverty and inequality as social harms. In part this may also be motivated by self-interest, to the extent that inequality breeds crime and threats to property rights. But, even beyond that, the observation (or perception) of poverty may negatively affect the welfare of the rich and their sense of fairness.

In this paper, we explore whether and why inequality negatively affects individual utility even after controlling for individual income. We measure "utility" in terms of survey answers about

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[1] For historical data on the growth of redistributive programs in industrial countries, see Tanzi and Schuknecht (2000).
[2] See Benabou and Ok (2000) for a precise theoretical formulation of this idea and Alesina and La Ferrara (2000) for empirical tests.

"happiness." Some readers may feel uncomfortable using such a vague question like "are you happy?" for any useful statistical investigation. As we discuss below, however, a growing literature both in psychology and in economics successfully uses it, and the patterns observed in the answers to this question are reasonable and quite similar across countries. This gives us confidence in the significance of using such data to study inequality.

We find some intriguing results. First, Europeans seem to strongly dislike inequality, while there is no evidence that Americans are affected by it. Second, the European aversion to inequality is more concentrated in certain groups. Those who define themselves leftist, for example, show a strong distaste for inequality, while those who define themselves as right wing are unaffected by it. Third, the breakdown of rich versus poor shows a clear difference between Europe and the US. In Europe, the happiness of the poor is strongly negatively affected by inequality, while the rich are unaffected. In the US, one finds that the only group that seems to be negatively affected by inequality are the rich leftists. There are two potential interpretations for our finding that Europeans dislike inequality while there are no strong effects in the US. The first one involves taste: the results simply reflect a higher "taste" for equality and social harmony in Europe relative to the US. That is, equality enters the utility functions of Europeans, but has a weaker role in that of Americans. In this sense "equality" would be like a luxury good since the share of government transfers is increasing in GDP in cross country samples, but Europeans care more than Americans abut this particular luxury.[3]

However this interpretation does not seem consistent with our results on the differences in the effect of inequality across income/ideological groups *within* Europe. The "taste for equality" should be found in high-income groups, if equality is likely to be a "luxury" good. Yet it is the happiness of the poor, not the rich that is negatively affected by inequality in Europe.

A more plausible interpretation is in terms of differences in social mobility. If the US is a more mobile society than Europe, where people have more opportunities to move up (or down), then present day inequality levels may have little influence on individual utility. Inequality in such cases is a poor indicator of what the future awaits. Note that inequality in this case does not belong in the utility function directly but it proxies for the likelihood that individuals will keep their place in

society in future periods. Consistent with the hypothesis that Europe is (or is perceived to be) less mobile than the US, we find a significantly more negative coefficient on inequality in the happiness regressions for the European poor relative to the US. Note that data problems have made conclusive tests involving social mobility almost impossible, as noted by Atkinson, Bourgignon and Morrison (1992).[4]

Given that European citizens seem so averse to inequality, they should favor redistributive policies, i.e. the welfare state. Broadly speaking this is the message of Boeri, Borsch-Syupan and Tabellini (2000). In a survey conducted in three European countries they find that Germans, Italians and Spaniards are reluctant to favor cuts in welfare programs, even though they show a lack of clear understanding of the costs associated with them namely, they tend to understate the costs. Di Tella and MacCulloch (1996) find a desire for higher unemployment benefits in 5 out of 6 European countries (the exception being Norway) and a desire for lower or equal unemployment benefits in the United States and Australia.

The present paper is at the crossroads of two lines of research. One is the study of the determinants of "happiness". The economic literature started with Easterlin (1974), who documented stagnant average happiness levels in the US in the face of large increases in income, a question recently taken up by Blanchflower and Oswald (2000) and Inglehart (1996).[5] A number of subsequent papers have focused on micro economic aspects, including the role of being unemployed on self reported well being (Clark and Oswald (1994), Winkelman and Winkelman (1991)). Di Tella, MacCulloch and Oswald (1997) show that the country-level "micro happiness" regressions display a very similar structure across 12 OECD countries. That paper also takes a macro perspective by including aggregate unemployment and a measure of the generosity of the welfare state in these happiness regressions. Other work has used happiness data to study the role of democratic institutions (Granato, Inglehart and Leblang (1996) and Frey and Stutzer (1999, 2000)), the inflation-unemployment trade-off (Di Tella, MacCulloch and Oswald (1999)), partisan versus opportunistic

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[3] See Thurow (1971) for a discussion of equality as a luxury good.

[4] However, in an interesting comparison, Checchi, Ichino and Rustichini (1999) find that social mobility is higher in the US than in Italy. Bjorklund and Janiti (1997) find inconclusive results in their comparison of Sweden and the US. Gottschalk and Spolaore (2000) argue that the relative amount of social mobility between the US and Germany may be different at different levels of the income scale.

[5] There is, to be sure, a large literature in psychology using self reported measures of well being (see Diener, Suh, Lucas and Smith (1999) and Kahneman, Diener and Schwartz (1999)).

models (Di Tella and MacCulloch (1998)), entrepreneurship (Blanchflower and Oswald (1998)) and the role of social norms (Stutzer and Lalive (2000)). An interesting early paper by Morawetz et al (1973) discusses how average happiness varies across two communities in Israel that have different levels of inequality.[6]

The second line of research is the literature on the determinants of preferences for redistribution. On the theoretical side some of the key papers are Romer (1977) and Meltzer and Richards (1981) on inequality and redistributions, and Piketty (1995) and Benabou and Ok (2000) on social mobility. Recent empirical work on the demand for redistribution includes Alesina and La Ferrara (2000), Ravallion and Loshkin (2000), Corneo (2000) and Corneo and Gruner (2000). These papers find, looking at the data from the US, Europe and in one case, Russia, that social mobility does affect the preference for redistribution.

This paper is organized as follows. Section 2 describes our data set. Section 3 presents results for the US. Section 4 present results for European countries. In Section 5 we compare results for the US and Europe. The last section concludes.

2. The data

2.1 Description

The analysis examines U.S. happiness data from the United States General Social Survey (1972-1994). We use the happiness question that reads *"Taken all together, how would you say things are these days - would you say that you are very happy, pretty happy, or not too happy?"* (Small "Don't know" and "No answer" categories are not studied here). This was asked in each of 23 years and we use the responses of 24,333 individuals.

For Europe, the source of happiness data is the Euro-Barometer Survey Series (1975-1992), which interviews a random sample of Europeans in each year and asked two questions, among others, that interest us. The first is *"Taking all things together, how would you say things are these days - would you say*

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[6] Our paper, and we believe much of the happiness literature, can be understood as an application of *experienced* utility, a concept that emphasises the pleasures derived from consumption (discussed in Kahneman and Thaler (1991)). It argues, in essence, that there are circumstances where measures of experienced utility can be derived (such as happiness responses) that are reasonable substitutes to observing individual choices. Ng (1996) discusses the theoretical structure of subjective well-being responses while Kahneman, Wakker and Sarin (1997) propose a formal axiomatic defense of experienced utility (see also Tinbergen (1991) and van Praag (1991)).

you're very happy, fairly happy, or not too happy these days?" (small "Don't know" and "No answer" categories are not studied here). The surveys also report the answers of 273,386 individuals over 18 years to a "life satisfaction" question. This question is included because the word "happy" translates imprecisely across languages. This question is: *"On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead?"* (The small "Don't know" and "No answer" categories are not studied here). We focus on life satisfaction data because they are available for a longer period of time (from 1975 to 1991 instead of just 1975 to 1986). "Happiness" and "life satisfaction" are highly correlated.

Because we are interested in comparing our results for Europe with those for the US, we coded the European data into similar categories. Since we have three categories for the US and four for Europe, we collapsed European responses that fell into the two middle categories (fairly satisfied and not very satisfied) into one. In any case, very similar results obtain when the four categories are used for Europe. Appendix 1 describes both the U.S. General Social Survey and the Euro-Barometer Survey Series in greater detail.

For the United States, we take Gini coefficients of gross family income for each State from the US Census Bureau. For Europe, we use Gini coefficients from the Deininger and Squire (1996) data set. We use only part of their "high quality" data. These data satisfy three minimum standards of quality: they are based on household surveys, the population covered is representative of the entire country and the measure of income (or expenditure) used is comprehensive including income from self-employment, non-wage earnings as well as non-monetary income. The data set is normally considered the best available for cross-country comparison and it is widely used. However, it is not without its drawbacks, as discussed by Atkinson and Brandolini (1999). The problems concern the fact that the Gini coefficients for different countries have not all been calculated using the same methods. For example, some are based on gross income, while others use net (disposable) income. In our sample, 3 observations for Denmark, 3 observations for France and 4 observations for Germany are based on gross income whereas the rest are based on net income. In addition, although Deininger and Squire's (1996) data set is largely based on the household as the choice of reference unit, some measurements are based at the individual level. Another difference between the country time series of Gini coefficients is that some use expenditure whereas others use income. In order to minimise problems caused by the differences in definitions and sources, we use only

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consistent time series of their "high quality" data *within* each country. The remaining differences in the bases used to estimate inequality across countries are at least partially controlled for by including country dummies. The definitions and sources of other variables used in the paper are described in Appendix 1.

Tables 2.1 and 2.2 report some basic statistics for our US and European samples. Concerning "happiness," the patterns across Europe and the US seem similar, which is somewhat reassuring that the question is interpreted similarly in the two places. For a start, the breakdown between different levels of happiness in the sample is fairly similar in Europe and the US. For instance, about 54 per cent in Europe and 56 per cent in the US are in the intermediate category. Patterns of happiness and marital status are similar. Interestingly, personal income seems to have a stronger effect in the US than in Europe, an observation consistent with a larger share of public consumption and more progressive taxation in Europe than in the US.

2.2 Discussion of "happiness data"

Many readers may worry about using answers to questions like "are you happy?" for any rigorous statistical work. While a healthy dose of scepticism is always useful, there are good reasons why these "happiness" data should not be dismissed.

The first reason is based on the fact that psychologists, who study well-being for a living widely, use these data. Presumably, people who insist on using bad data would be driven out of the market. A second argument is that well-being data pass what psychologists often call validation exercises. Happiness responses are correlated with physical reactions that can be thought of as describing true, internal happiness. Pavot (1991), and Eckman, Davidson and Friesen (1990), for example, find that individuals reporting to be very happy tend to smile more. Shedler, Mayman and Manis (1993) show that happiness data are negatively correlated with heart rate and blood pressure measures of responses to stress. Sutton and Davidson (1997) show that happiness data are positively correlated with electroencephalogram measures of prefrontal brain activity (the part of the brain that is "responsible" for happiness). Other studies include Fordyce (1988), who shows that the different measures of well-being correlate well with one another, Seidlitz, Wyer and Diener (1997) who show that happiness data are correlated with subject recall of positive life events; Diener (1984) and

Sandvik, Diener and Seidlitz (1993) who show the data are correlated with reports of friends and family members. Konow and Early (1999) discuss a number of studies that are helpful in assessing the validity of well-being data.

The psychology literature has also considered the possibility that subjects are influenced by what they believe to be the socially desirable response when they answer surveys. If the social norm is to be happy, subjects may bias their response upwards. Since the first studies in the area, psychologists have found evidence pointing out that this concern may be exaggerated (e.g. Rorer (1965), Bradburn (1969)). Konow and Early (1999) present experimental evidence showing that the Marlowe-Crowne measure of social desirability is uncorrelated with happiness data.

An additional argument in defence of subjective well-being data, inspired by results presented in Inglehart (1990), is that happiness data are correlated with suicide rates, as Di Tella et al (1997) show.[7] The latter paper also presents microeconometric happiness and life satisfaction regressions for 12 European countries and the US. The interesting finding is that these equations seem to share a similar structure across countries.

2.3 Empirical Strategy

We compare US states and European countries, and we relate "happiness" in different US states and happiness in European countries to inequality, other macroeconomic variables and several individual characteristics. We take advantage of cross-state (or cross-country) and time series variation in inequality and we to run the exact same regression in the US and Europe, in terms of the definitions of both the left and right-hand side variables, and of specification of the regressions. We run an ordered logit regression of the form

$$Happy^g_{ist} = \alpha^g \ Inequality_{st} + \beta^g \ MACRO_{st} + \delta^g \ MICRO^g_{ist} + \eta^g_s + \mu^g_t + \varepsilon^g_{ist} \tag{1}$$

where $Happy^g_{ist}$ is the answer given by individual, i, who lives in State, s, and year, t, to the happiness question "*Are you Happy?*". In Europe, s refers to countries. The superscript g refers to the fact that

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[7] Inglehart (1990) looks at the cross section. He finds some evidence of a *positive* correlation and offers some arguments explaining why the correlation may be spurious.

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we consider the whole sample (in which case g=*whole sample*), but we also divide it on the bases of income (in which case g=*rich, poor*), of ideological inclination (in which case g=*right, left*) or both (in which case g=*rich and left, poor and left, rich and right, poor and right*). The vector $MACRO_{st}$ refers to a set of variables aggregated at the State (or country) level that have previously been found to affect individual happiness. These include GDP per capita (*Output*), the inflation rate (*Inflation*) and the unemployment rate (*Unemployment*). We also present some checks using the crime rate (*Murders*). The vector $MICRO_{ist}^g$ refers to a set of personal characteristics of the respondents that have previously been found to affect individual happiness, including age, employment status, income, etc. We also include η_s^g, a dummy variable for the cross sectional units (State in the US, country in Europe), μ_t^g, a dummy for each year and ε_{ist}^g, an error term (i.i.d.). We compute robust standard errors, where we correct for potential heteroscedasticity and for potential correlation of the error term across observations that are contained within a cross sectional unit in any given year (see Moulton (1986)).

3. Happiness and inequality in the United States

The period from the late seventies to the early nineties is characterized by a large and noticeable increase in inequality. Therefore, this is a rather interesting time period to analyze from our perspective. Unfortunately, our investigation has to deal with a difficult data issue. Income inequality at the state level is available only for two years of the time period covered by the survey on happiness, namely 1979 and 1989. In order to overcome this problem we attempted two different approaches. First, we used only a sample for the years 1979 and 1989. Second, we used the 1979 and 1989 inequality data to analyze the two ten-year periods that are centered on these years.

The first alternative uses very few observations on the happiness response. The second alternative has the opposite problem. It increases the number of responses to the survey that we can possibly use, but it has the disadvantage of an imprecise correspondence of timing between measured inequality and responses to the happiness question.

In Table 3.1 we use the second approach, thus, the inequality variable has two values in each state. The first period uses the 1979 measure of State inequality as our estimate of inequality over the years

from 1975 to 1984, whereas the second period uses the 1989 measure of State inequality as our estimate of inequality over the years from 1985 to 1994.[8] We begin in column 1 with a regression that includes only the individual characteristics of the respondent. We start by including state dummies (but not year dummies yet, they will come later).

The results are sensible and provide some confidence in the structure of the responses to the happiness question. First of all, money does bring happiness, as the coefficients on income show. The omitted quartile is the first and the coefficients show that happiness is monotonically increasing in income. Even after controlling for income, more educated individuals are happier. On the other hand, being unemployed brings unhappiness, above and beyond an income effect.

The results on marital status are consistent with the sociological and medical literature, which show that married individuals live longer and are healthier. The omitted category is "never married," and we find married individuals are happier than unmarried ones; divorced, separated and widowers are less happy then "never married," and, a fortiori, much less happy than married individuals. Note that one may argue that there might be a problem of reverse causality: happy and optimistic individuals may be more likely to marry and stay married because they are better at building relationships. We are not interested in precisely establishing causality here. For us, what really matters is that the association between "happiness" and marital status is consistent with evidence drawn from other sources.

There is a non linear effect of age: the happiest decades seem to be the thirties/forties, when "growing pains" are over, and old age has not settled in yet. On the other hand, controlling for age, retirement is not bad. Children seem to bring about preoccupations, stress and hard work as the negative coefficients on this variable show. Finally, women seem happier than men, and, not surprisingly, a traditionally discriminated minority (blacks) are less happy. All these results seem quite sensible and are consistent with the literature.[9]

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[8] Our results are robust to reducing the number of years below 10 for each of the "periods" which are centered on 1979 and 1989. When we use only the responses for 1979 and 1989 our estimates begin to loose precision because of the very small number of observations.
[9] See Di Tella et. al. (1997) on this point.

In column 2 we add our measure of inequality. The coefficient on inequality is negative but insignificant. In the next two columns we add additional macroeconomic variables, and the coefficient on inequality becomes negative and statistically significant at the 5 per cent level.

A rise in the Gini of 10 percentage points, equivalent to a rise from the State with the lowest level of inequality in the sample (New Hampshire) to the State with the highest level of inequality (Louisiana) leads to a fall in the proportion of people reporting themselves as "Very Happy" of 2.5 percentage points and a rise in the proportion reporting themselves as "Not too Happy" of 5.0 percentage points. Since 32.2 per cent of Americans reported themselves as "Very Happy" an increase in inequality of 10 percentage points is expected to bring about an 8% reduction in the amount of people reporting themselves in the top happiness category. Since 11.5 per cent of Americans reported themselves as "Not too Happy" it would also correspond to a 43% increase in the number of people reporting themselves in the bottom happiness category.

In column 4 we add further controls for the level of state unemployment and the national inflation rate. The coefficient on inequality retains its significance and falls only slightly in (absolute) magnitude. However the coefficient on output now loses its significance. It is now the aggregate (state) unemployment rate that brings unhappiness, even after controlling for whether or not the respondent has a job. Note that, unlike inequality, unemployment data are available for every year in the sample. A one standard deviation increase in the unemployment rate (equal to 0.02) increases the proportion of people reporting themselves as "Not too Happy" by 1.7 percentage points, which corresponds to an increase of 15 percent of people self declaring themselves "Not too Happy" (from 11.5 per cent to 13.2 per cent).

One of the reasons why inequality may bring unhappiness is because it is correlated with crime. In Appendix 4 we show that these results on inequality do not change even after controlling for crime, measured by murder rates. It turns out that the coefficient on this measure of crime has the "correct" sign but it is not statistically significant. Experiments with additional crime data (available upon request) confirm this result. We have chosen not to include crime variables in our specification since the best available European crime data had serious consistency problems that made comparisons with the US unfeasible. Various experiments with (imperfect) crime data for the European panels did not change the nature of our results.

In Table 3.2 we report the identical regressions of Table 3.1 but partitioning the sample across ideological lines. We classified as "left" the respondents that replied 0, 1 or 2 to the question *"Generally speaking, do you usually think of yourself as a Republican, Democrat, Independent, or what?"*, where 0 equals *"Strong Democrat"*, 1 equals *"Not very strong Democrat"* and 2 equals *"Independent, close to Democrat"*. We classified as "right" the respondent that replied 4, 5 or 6, where 4 equals *"Independent, close to Republican"*, 5 equals *"Not very strong Republican"* and 6 equals *"Strong Republican"*. We report only the "macro" variables, since the individual controls are quite stable and they are very similar between left and right respondents. In this table we added two numbers below for each coefficient and standard errors: these are the effect on the probability of moving from one "level" of happiness to the next, as a result of one standard deviation change in the corresponding right hand side variable. Specifically, the top number is the proportion of people who leave (enter) the top happiness category "Very Happy" and consequently enter (leave) one of the bottom two happiness categories "Pretty Happy" or "Not too Happy" when this is a negative (positive) number. The bottom number is the proportion of people who leave (enter) the top two happiness categories and consequently enter (leave) the bottom happiness category "Not too Happy" when this number is negative (positive).

Right wing respondents are unaffected by inequality, while the left leaning respondents display a negative effect of this variable. Also, only the left leaning respondents are negatively affected by unemployment, a result consistent with the "partisan" model of macroeconomics.[10] For the results reported in column 3, a one standard deviation increase in the unemployment rate (equal to 0.021) decreases the proportion of people reporting themselves as "Very Happy" by 1.0 percentage point and increases the proportion of people reporting themselves as "Not too Happy" by 1.8 percentage points.

In Table 3.3 we break down the respondents between rich and poor. A respondent is classified as "rich" if he/she belongs to the top two income quartiles, and as "poor" otherwise. Once again, we do not report the coefficients on individual controls since they are very stable. An interesting exception, however, concerns the results on children: while the "poor" display a negative statistically significant coefficient on children, the rich display a negative but insignificant one. This suggests

that a high income may eliminate some of the "stress" associated with raising children, by allowing for more help, such as day care, nannies etc.

Concerning inequality, we find a striking result, especially if compared with the results for Europe discussed later. The poor seem unaffected by inequality. On the contrary, it is the rich who show a small effect of increased unhappiness with inequality. The poor, however, are affected by a higher level of unemployment (in addition to the personal costs of falling unemployed as picked up by the personal characteristic controls). For the rich, the unemployment rate does not seem to significantly affect their happiness but greater output has a positive affect, at the 10 per cent level of significance. Using the results reported in column 3 for the poor, a one standard deviation increase in the unemployment rate decreases the proportion of poor people reporting themselves as "Very Happy" by 1.4 percentage points and increases the proportion of people reporting themselves as "Not too Happy" by 2.0 percentage points.

In summary, the preceding results seem to suggest that if there is an overall small effect of inequality in the US it comes from leftist and rich voters a result which we revisit below.

In Table 3.4 we check the robustness of our results by including, in addition to all the other controls, also time fixed effects. The effect of inequality on happiness disappears. Note, however, that the time dummies do not "kill" the significance of all the macroeconomic variables. In fact the effect of aggregate (state) unemployment remains robust. Note that since unemployment data are available for every year and state in the sample, there are a total of 613 separate observations on this variable. The evidence is also consistent with the partisan model: the leftists and the poor care about unemployment, the rightists and the rich do not.

4. Happiness and inequality in Europe

Table 4.1 presents pooled ordered logit regressions for the 12 European countries listed above for all countries and years for which happiness data exist. There are a total of 271,224 observations. All the European regressions control for year, and country, fixed effects.

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[10] See Alesina, Roubini and Cohen (1997) on the partisan model of macroeconomic policy.

In line with our presentation for the US, we first present in column 1 results obtained introducing only individual controls. Comparing column 1 of Table 4.1 with column 1 of Table 3.1 one is struck by the similarities, not only of the sign and significance of the coefficients but often even by their size. This is important for two reasons. First, as for the case of Americans, the answers of Europeans about "happiness" seem to make sense. Second, the fact that basic individual characteristic like age, marital status, unemployment, etc. are correlated to the answer in similar ways in Europe and in the US suggest that the survey question is interpreted in a similar way in both places. Also, our results on individual effects are very similar to Di Tella et. al. (1997).

In column 2 the effect of personal characteristics on happiness is estimated when the sample size is restricted to only those countries and years for which inequality data exist. The size and significance of the personal controls remains similar to column 1. In column 3 we add the inequality variable. Although it has a negative sign, the effect is only significant at the 20 percent level. The result is similar when real output is included in column 4. However when a fuller set of macroeconomic variables is controlled for, including the unemployment and inflation rates, as well as real output, column 4 shows that inequality can be identified as having a negative effect on happiness at the 5 percent level of significance.

Using the results in column 4, a one standard deviation increase in the Gini across Europe (equal to 0.043) decreases the proportion of people reporting themselves as "Very Satisfied" by 2.1 percentage points. It increases the proportion of people reporting themselves as "Not very/at all Satisfied" by 2.5 percentage points. A 10 percentage point increase in the Gini decreases the proportion of people reporting themselves as "Very Satisfied" by 5.2 percentage points and increases the proportion reporting themselves as "Not very/at all Satisfied" by 5.5 percentage points. Since 26.5 per cent of Europeans reported themselves as "Very Satisfied", a 10 percentage point increase in the Gini would correspond to a 20% drop to 21.3 per cent of people reporting themselves in the top happiness category. Since 19.6 per cent of Europeans reported themselves as "Not very/at all Satisfied" it would also correspond to a 28% rise to 25.1 per cent of people reporting themselves in the bottom happiness category.

It is worth emphasizing that this table shows that even after including time fixed effects inequality does reduce happiness. This result points towards a critical difference between Europe and the US, which we revisit below.

As for the macroeconomic variables, inflation, which varies both across time and across countries in Europe, seems important.[11] A one standard deviation increase in the inflation rate (equal to 0.058) leads to a fall in the proportion of poor people reporting themselves as "Very Satisfied" of 2.6 percentage points and a rise in the proportion reporting themselves as "Not very/at all Satisfied" of 3.1 percentage points. A 10 percentage point increase in the inflation rate corresponds to a drop of 4.8 percentage points (from 26.5 to 21.7 per cent) in the proportion of people reporting themselves in the top happiness category. The effect of unemployment is negative but insignificant as is the effect of output. These results hide different effects across income and ideological groups that we investigate below.

In Table 4.2 we break down respondents into left and right. This is done using a question in the Eurobarometer asking respondents *"In political matters, people talk of 'the left' and 'the right'. How would you place your own views on this scale?" (from 1 to 10)*. Respondents were classified as being "left" if their response was in categories 1, 2, 3 or 4 and "right" if their response was 7, 8, 9, or 10. We do not report the individual controls, which look quite stable and do not vary across the political spectrum. Note that both for the case of the US and of Europe, we leave out those who define themselves as centrist. The scale of the response of the left/right dimension was different in the US survey (as discussed above) and for the Europe survey. Our results are robust to reasonable changes in the right/left classification, for instance taking away 4 from the left and 7 from the right.

The left shows a strong aversion to inequality, while the coefficient on this variable for the right wing respondents is insignificant. Remember that these regressions, like all others for Europe, include time fixed effects. Using the results in the most general specification in column 3 for the left, a one standard deviation increase in the Gini across Europe (equal to 0.043) decreases the proportion of leftists reporting themselves as "Very Satisfied" by 4.7 percentage points. It also increases the proportion of leftists reporting themselves as "Not very/at all Satisfied" by 3.7 percentage points. Since 22.0 per cent of leftist Europeans reported themselves as "Very Satisfied",

a one standard deviation increase in the Gini corresponds to a drop to 17.3 per cent of left leaning people reporting themselves in the top happiness category. Since 23.9 per cent of leftist Europeans reported themselves as "Not very/at all Satisfied" it would also correspond to a rise to 27.6 per cent of left leaning people reporting themselves in the bottom happiness category. These effects are quite large.

Inflation enters negatively, although it is only significant (at the 10% level) in the equation for the right. This group is the only one affected by output, as indicated by the positive and significant coefficient. Unemployment has the expected sign, but it is insignificant for both left and right wing groups. Although some care must be exercised in looking at this effect due to its high correlation with output, we note that the pattern of signs and size on both variables are consistent with the "partisan" model of macroeconomic policy where what matters is the perception of the relative costs of inflation and unemployment. This is true also for the results partitioning the sample into rich and poor to which we now turn.

Table 4.3 presents the breakdown between rich and poor. A respondent is classified as rich if he/she is in the top two income quartiles and poor otherwise. While the poor are strongly affected by inequality, the rich Europeans seem to be indifferent to it. Using the results in the most general specification in column 3 for the poor, a one standard deviation increase in the Gini across Europe decreases the proportion of poor people reporting themselves as "Very Satisfied" by 3.6 percentage points. It also increases the proportion of poor people reporting themselves as "Not very/at all Satisfied" by 3.0 percentage points. A one standard deviation increase in the Gini corresponds to a drop from 23.1 per cent to 19.5 per cent of the poor reporting themselves in the top happiness category. Since 24.9 per cent of poor Europeans reported themselves as "Not very/at all Satisfied" it also corresponds to a rise to 27.9 per cent of the poor reporting themselves in the bottom happiness category. Once again, these effects are large.

Unemployment has a large but not precisely estimated negative coefficient for the poor, while it is very close to zero for the rich. Both the left and the right have a similar negative coefficient on inflation. These results are (weakly) consistent with the partisan model, although a proper test

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[11] In comparing these results with those for the US, it is important to remember that in that case inflation varied only across time, while in Europe it varies across time and across countries.

would use the whole Euro-Barometer sample and not just those countries and years for which inequality data exist.[12]

5. Comparing Europe and the United States

The previous two sections have highlighted important differences on the effect of inequality in Europe and the US which are summarized in Table 5.1.

The differences between the two sides of the Atlantic are striking. In Europe the poor and the left leaning respondents show a strong aversion to inequality. In the US none of the four groups (poor or rich, left or right) display aversion to inequality. In fact, the coefficient on this variable is never statistically significant when time effects are introduced. If anything, the rich, more than the poor show an aversion to inequality in the US, contrary to the result for Europe.

We ran pooled happiness regressions consisting of the combined sample of 41,674 leftist Americans and Europeans that allowed for differences in the sizes of the coefficients on all the explanatory variables between these two groups. This regression was used to estimate whether there exists a significant difference in the effect of inequality on happiness between the US and Europe (i.e. comparing columns 3 and 4 in Table 5.1). We could reject that the coefficients on inequality were the same for both the US and Europe in favor of a more negative impact of inequality on happiness for leftist Europeans compared to leftist Americans at the 8 percent level of significance. Similarly, across the combined sample of 63,135 poor Americans and poor Europeans there is evidence of a more negative effect of inequality on happiness for the poor Europeans compared to the poor Americans, at the 3 per cent level of significance (see columns 7 and 8). Comparing poor as well as left-leaning Americans with their European counterparts, there is a greater negative effect of inequality on happiness for Europeans than for Americans, at the 2 per cent level of significance (see columns 11 and 12).

As argued in the previous section, the size of the effect of inequality on happiness in Europe is substantial. An additional way of looking at the size of this effect is to compare it with the size of

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[12] Using the larger sample, unconstrained by data availability on inequality, Di Tella and MacCulloch (1998) present stronger results for the "partisan model."

the effect of other determinants. For instance, based upon the results of column (3) of Table 5.1, one can compute that for a European leftist an increase in inequality equal to one standard deviation of the Gini corresponds to a drop of almost one quartile down the income distribution. It also equals 2.2 times the effect of leaving self-employment. For the European poor, a one standard deviation increase in the Gini has the same effect of an increase in inflation of 7 percentage points.

As for the US, once year effects are included, the only sub-sample for which a robust and statistically significant but small effect of inequality on happiness can be found is for the group of left leaning rich (see column 14). The size of the coefficient for the American rich-leftist is not trivial in size. A one standard deviation increase in inequality is larger than the effect of leaving self-employment.

6. Conclusion

Countries differ greatly in the degree of income inequality that they tolerate, even at similar stages of development. European observers object to the higher (and, for much of the past few decades, growing) inequality in the US. American commentators argue that European society's obsession with inequality stifles creativity and, paradoxically, creates a vicious circle of welfare addiction of the poor. Do these differences of opinion simply reflect different preferences about the merits of equality on the two sides of the Atlantic? Furthermore, is a preference for equality just a matter of "taste," or does it reflect something else in society, such as the level of social mobility?

Our approach uses the answers to a simple well-being question. We simply correlate the answers to the well-being question asked to thousands of individuals in Europe and America over many years with measured levels of inequality. All that this method requires is an individual's ability to introspect and evaluate his or her own happiness.

Our results show that, controlling for personal characteristics of the respondents, state/country effects and year effects, Americans are not affected by inequality while there is a well-defined negative effect in Europe. We then investigate differences across income and ideological groups. In Europe, we find that both the rich and the right-wingers are unaffected by inequality. In contrast, we identify strong negative effects of inequality on the happiness of the European poor and leftists. In fact the sign of the estimated effect of inequality on the poor in the US is often positive, implying a

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statistically significant difference between the way the poor are affected by inequality in Europe and America. This suggests that European aversion to inequality is not in the "genes" or, more formally, does not originate in different preferences in the US and Europe. If the European effect reflected a "taste" for equality, we would expect to find it at least as strongly in the European rich. This is based on the *assumption* that equality is a luxury good, whose demand rises with income. A more reasonable interpretation is that opportunities for mobility are (or are perceived to be) higher in the US than in Europe. Under this interpretation, a higher degree of inequality is more "informative" about future individual fate in a perhaps less mobile society, like Europe.

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Table 2.1
Happiness in the United States: 1975-94.

Reported Happiness	All	Unemployed	Marital Status Married	Divorced
Very Happy	32.17	17.85	39.24	20.02
Pretty Happy	56.37	52.72	53.14	62.06
Not too Happy	11.45	29.43	7.62	17.92

Reported Life Satisfaction	Partisan Support Left	Right	Income Quartiles 1st (Lowest)	2nd	3rd	4th (Highest)
Very Happy	29.93	36.62	24.28	28.73	33.91	41.71
Pretty Happy	57.26	54.89	57.43	58.07	57.53	52.48
Not too Happy	12.81	8.49	18.28	13.20	8.56	5.81

Note: Based on 24,333 observations. All numbers are expressed as a percentage.

Summary Statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
OUTPUT	613	13536	2075	8738	20721
UNEMPLOYMENT RATE	613	0.071	0.021	0.024	0.180
INFLATION RATE	613	0.051	0.027	0.019	0.135
MURDERS	613	8.594	3.434	0.200	20.300
INCOME INEQUALITY	72	0.385	0.028	0.330	0.446

Table 2.2
Life Satisfaction in Europe: 1975-92.

Reported Life Satisfaction	All	Unemployed	Marital Status	
			Married	Divorced
Very satisfied	26.46	15.21	28.79	18.61
Fairly satisfied	53.96	44.21	54.04	51.00
Not very / Not at all satisfied	19.59	40.59	17.17	30.39

Reported Life Satisfaction	Partisan	Support	Income	Quartiles		
	Left	Right	1st (Lowest)	2nd	3rd	4th (Highest)
Very satisfied	21.98	34.88	21.90	24.36	26.81	32.58
Fairly satisfied	54.15	50.97	49.52	54.54	56.71	54.96
Not very / Not at all satisfied	23.87	14.16	28.58	21.10	16.48	12.47

Note: Based on 103,773 observations. All numbers are expressed as a percentage.

Summary Statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
OUTPUT	67	7731	1905	2636	12415
UNEMPLOYMENT RATE	67	0.093	0.041	0.016	0.220
INFLATION RATE	67	0.081	0.058	-0.007	0.245
INCOME INEQUALITY	67	0.304	0.043	0.229	0.430

Table 3.1 The Determinants of United States' Happiness: 1975-94.

Dep Var: Happiness	(1)	(2)	(3)	(4)
Inequality		-0.548	**-2.451***	**-2.262***
		(0.543)	**(0.906)**	**(0.992)**
Output			**3.7e-5**	4.3e-6
			(1.9e-5)	(1.9e-5)
Unemployment Rate				**-3.933***
				(1.253)
Inflation Rate				-0.046
				(0.688)
Unemployed	**-0.707***	**-0.709***	**-0.706***	**-0.693***
	(0.076)	**(0.076)**	**(0.077)**	**(0.076)**
Self employed	0.088	0.089	0.089	0.090
	(0.052)	(0.052)	(0.052)	(0.051)
Retired	0.046	0.047	0.047	0.051
	(0.044)	(0.044)	(0.044)	(0.044)
School	0.193	0.193	0.194	0.192
	(0.123)	(0.123)	(0.122)	(0.123)
Home	-0.034	-0.037	-0.034	-0.034
	(0.036)	(0.035)	(0.035)	(0.035)
Male	**-0.207***	**-0.208***	**-0.206***	**-0.207***
	(0.027)	**(0.027)**	**(0.027)**	**(0.026)**
Age	**-0.034***	**-0.034***	**-0.034***	**-0.034***
	(0.006)	**(0.006)**	**(0.006)**	**(0.006)**
Age Squared	**4.4e-4***	**4.4e-4***	**4.4e-4***	**4.4e-4***
	(6.3e-5)	**(6.3e-5)**	**(6.3e-5)**	**(6.3e-5)**
Education: College	**0.162***	**0.165***	**0.161***	**0.163***
	(0.026)	**(0.026)**	**(0.026)**	**(0.026)**
Graduate	**0.217***	**0.220***	**0.215***	**0.218***
	(0.042)	**(0.042)**	**(0.041)**	**(0.041)**
Marital Status: Married	**0.623***	**0.621***	**0.624***	**0.622***
	(0.035)	**(0.035)**	**(0.035)**	**(0.035)**
Divorced	**-0.164***	**-0.164***	**-0.164***	**-0.162***
	(0.068)	**(0.068)**	**(0.068)**	**(0.068)**
Separated	**-0.395***	**-0.397***	**-0.391***	**-0.394***
	(0.084)	**(0.084)**	**(0.084)**	**(0.084)**
Widowed	**-0.347***	**-0.349***	**-0.345***	**-0.345***
	(0.068)	**(0.067)**	**(0.067)**	**(0.067)**
No. of children: 1	**-0.192***	**-0.191***	**-0.192***	**-0.190***
	(0.037)	**(0.037)**	**(0.037)**	**(0.037)**
2	**-0.142***	**-0.141***	**-0.142***	**-0.140***
	(0.039)	**(0.039)**	**(0.039)**	**(0.039)**
>3	**-0.199***	**-0.199***	**-0.199***	**-0.197***
	(0.040)	**(0.040)**	**(0.040)**	**(0.040)**
Income Quartile: Second	**0.186***	**0.185***	**0.188***	**0.191***
	(0.047)	**(0.047)**	**(0.048)**	**(0.047)**
Third	**0.389***	**0.388***	**0.392***	**0.396***
	(0.051)	**(0.051)**	**(0.051)**	**(0.051)**
Fourth (highest)	**0.629***	**0.628***	**0.631***	**0.634***
	(0.040)	**(0.040)**	**(0.040)**	**(0.041)**
Race: Black	**-0.470***	**-0.469***	**-0.470***	**-0.469***
	(0.051)	**(0.052)**	**(0.051)**	**(0.051)**
p-value	0.00	0.00	0.00	0.00
Obs.	24,333	24,333	24,333	24,333

Note: [1] Ordered logit regressions all include State dummies. [2] Bold-face denotes significant at the 10 percent level; Starred bold-face at the 5 per cent level. [3] Cut points (standard errors) are -1.78 (0.14), 1.21 (0.15) for reg. (1); -1.99 (0.21), 1.01 (0.21) for reg. (2); -2.11 (0.19), 0.89 (0.19) for reg. (3); -2.89 (0.49), 0.11 (0.49) for reg. (4).

Table 3.2

Table 3.2
The Determinants of U.S. Happiness for the Left and the Right: 1975-94.

Dep Var: Happiness	Left			Right		
	(1)	(2)	(3)	(4)	(5)	(6)
Inequality	-1.085	-3.572*	-3.081*	-0.193	-0.469	-0.221
	(0.784)	(1.364)	(1.488)	(0.701)	(1.708)	(1.753)
	-0.003	-0.011	-0.009	-3.7e-4	-0.001	-4.3e-4
	-0.006	-0.020	-0.017	-0.001	-0.003	-0.001
Output		4.8e-5*	1.3e-5		5.3e-6	-1.7e-5
		(2.4e-5)	(2.8e-5)		(3.3e-5)	(3.2e-5)
		0.010	0.003		0.001	-0.003
		0.021	0.006		0.003	-0.008
Unemployment Rate			-4.402*			-3.115
			(1.498)			(2.306)
			-0.010			-0.005
			-0.018			-0.015
Inflation Rate			0.364			0.410
			(1.084)			(1.109)
			0.001			0.001
			0.002			0.003
Personal Controls	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	No	No	No	No	No	No
p-value	0.00	0.00	0.00	0.00	0.00	0.00
Obs.	12,343	12,343	12,343	8,760	8,760	8,760

Note: [1] All the regressions are ordered logits. [2] Bold-face denotes significant at the 10 percent level; Starred bold-face at the 5 per cent level. [3] Cut points (standard errors) are -1.19 (0.26), 1.78 (0.26) for reg. (1); -1.34 (0.25), 1.63 (0.24) for reg. (2); -2.08 (0.57), 0.90 (0.57) for reg. (3); -4.04 (0.33), -0.93 (0.33) for reg. (4); -4.06 (0.34), -0.95 (0.35) for reg. (5) and -4.58 (0.80), -1.46 (0.80) for reg. (6). [4] The two cells below each coefficient (standard error) report the probabilities of shifting between the different happiness categories due to a one-standard deviation change in the corresponding explanatory variable (see text for more detail).

Table 3.3
The Determinants of U.S. Happiness for the Poor and the Rich: 1975-94.

Dep Var: Happiness	Poor			Rich		
	(1)	(2)	(3)	(4)	(5)	(6)
Inequality	0.186	-0.216	-0.169	-1.253	**-4.599***	**-4.302***
	(1.026)	(1.190)	(1.201)	(0.674)	**(1.174)**	**(1.344)**
	0.001	-0.001	-0.001	-0.002	-0.008	-0.008
	0.001	-0.001	-0.001	-0.008	-0.030	-0.028
Output		7.8e-6	-3.6e-5		**6.4e-5***	**4.3e-5**
		(2.8e-5)	(3.0e-5)		**(2.3e-5)**	**(2.6e-5)**
		0.002	-0.009		0.008	0.005
		0.003	-0.014		0.032	0.021
Unemployment Rate			**-5.266***			-2.624
			(1.270)			(1.821)
			-0.014			-0.003
			-0.020			-0.013
Inflation Rate			-0.355			0.243
			(0.915)			(0.931)
			-0.001			4.0e-4
			-0.002			0.002
Personal Controls	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	No	No	No	No	No	No
p-value	0.00	0.00	0.00	0.00	0.00	0.00
Obs.	12,140	12,140	12,140	12,193	12,193	12,193

Note: [1] All the regressions are ordered logits. [2] Bold-face denotes significant at the 10 percent level; Starred bold-face at the 5 per cent level. [3] Cut points (standard errors) are -1.27 (0.39), 1.59 (0.40) for regression (1); -1.30 (0.36), 1.56 (0.36) for reg. (2); -2.44 (0.60), 0.42 (0.61) for reg. (3); -3.09 (0.37), 0.09 (0.36) for reg. (4); -3.31 (0.38), -0.13 (0.37) for reg. (5) and -3.75 (0.75), -0.56 (0.74) for reg. (6). [4] The two cells below each coefficient (standard error) report the probabilities of shifting between the different happiness categories due to a one-standard deviation change in the corresponding explanatory variable (see text for more detail).

Table 3.4
The Determinants of U.S. Happiness including Year Fixed Effects: 1975-94.

Dep Var: Happiness	All (1)	Left (2)	Right (3)	Poor (4)	Rich (5)
Inequality	-0.238	-0.343	-1.484	4.521	-5.424
	(2.215)	(3.211)	(3.460)	(4.269)	(4.261)
	-0.001	-0.001	-0.003	0.015	-0.010
	-0.001	-0.002	-0.009	0.025	-0.035
Output	9.6e-6	1.4e-5	-4.8e-5	-1.5e-5	2.5e-5
	(2.8e-5)	(3.3e-5)	(4.1e-5)	(4.8e-5)	(3.6e-5)
	0.002	0.003	-0.007	-0.004	0.003
	0.004	0.006	-0.022	-0.006	0.012
Unemployment Rate	**-2.701**	**-2.975***	-3.589	**-4.135***	-1.632
	(1.429)	**(1.392)**	(2.759)	**(1.746)**	(1.664)
	-0.005	-0.006	-0.005	-0.011	-0.002
	-0.012	-0.013	-0.017	-0.016	-0.008
Personal Controls	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
p-value	0.00	0.00	0.00	0.00	0.00
Obs.	24,333	12,343	8,760	12,140	12,193

Note: [1] All the regressions are ordered logits. [2] Bold-face denotes significant at the 10 percent level; Starred bold-face at the 5 per cent level. [3] Cut points (standard errors) are -2.16 (1.04), 0.84 (1.04) for reg. (1); -1.10 (1.42), 1.88 (1.41) for reg. (2); -5.59 (1.39), -2.47 (1.41) for reg. (3); -0.36 (2.11), 2.51 (2.12) for reg. (4); -4.70 (1.64), -1.51 (1.65) for reg. (5). [4] The two cells below each coefficient (standard error) report the probabilities of shifting between the different happiness categories due to a one-standard deviation change in the corresponding explanatory variable (see text for more detail).

Table 4.1: The Determinants of Happiness Pooled Across 12 European Nations: 1975-92.

Dep Var: Happiness	(1)	(2)	(3)	(4)	(5)
Inequality			-2.625	-2.658	**-3.367***
			(1.933)	(1.937)	**(1.460)**
Output				-4.3e-5	-1.7e-5
				(6.5e-5)	(7.7e-5)
Unemployment Rate					-0.969
					(1.902)
Inflation Rate					-3.120
					(1.492)
Unemployed	**-0.874***	**-0.888***	**-0.886***	**-0.886***	**-0.890***
	(0.086)	(0.077)	(0.077)	(0.077)	(0.076)
Self employed	**0.115***	**0.103***	**0.109***	**0.110***	**0.108***
	(0.030)	(0.024)	(0.023)	(0.023)	(0.023)
Retired	0.130	**0.129***	**0.134***	**0.134***	**0.130***
	(0.063)	(0.049)	(0.048)	(0.048)	(0.048)
School	**0.239***	**0.174***	**0.177***	**0.177***	**0.176***
	(0.069)	(0.061)	(0.059)	(0.059)	(0.059)
Home	0.080	0.068	**0.069***	**0.069***	**0.065***
	(0.038)	(0.031)	(0.030)	(0.030)	(0.029)
Male	**-0.112***	-0.123	-0.124	-0.124	-0.126
	(0.038)	(0.059)	(0.059)	(0.059)	(0.059)
Age	**-0.048***	**-0.054***	-0.054	**-0.054***	**-0.054***
	(0.004)	(0.005)	0.005	(0.005)	(0.005)
Age Squared	**5.5e-4***	**6.2e-4***	6.2e-4	**6.2e-4***	**6.2e-4***
	(4.3e-5)	(4.4e-5)	4.4e-5	(4.4e-5)	(4.3e-5)
Education to age: 15-18 years	**0.083***	0.042	0.044	0.044	0.042
	(0.028)	(0.028)	(0.027)	(0.027)	(0.027)
≥ 19 years	**0.202***	**0.137***	**0.138***	**0.137***	**0.137***
	(0.046)	(0.038)	(0.037)	(0.037)	(0.037)
Marital Status: Married	**0.233***	0.274	**0.272***	**0.272***	**0.271***
	(0.030)	(0.031)	(0.030)	(0.030)	(0.030)
Divorced	**-0.477***	-0.545	**-0.542***	**-0.542***	**-0.539***
	(0.060)	(0.069)	(0.071)	(0.072)	(0.072)
Separated	**-0.596***	-0.542	**-0.541***	**-0.540***	**-0.540***
	(0.070)	(0.113)	(0.112)	(0.112)	(0.113)
Widowed	**-0.288***	-0.269	**-0.271***	**-0.271***	**-0.272***
	(0.041)	(0.059)	(0.058)	(0.058)	(0.057)
No. of children ≥ 8 & 15 yrs: 1	**-0.045***	-0.037	-0.036	-0.036	-0.037
	(0.020)	(0.034)	(0.034)	(0.034)	(0.033)
2	**-0.060***	-0.062	-0.061	-0.061	-0.060
	(0.026)	(0.046)	(0.046)	(0.046)	(0.046)
>3	**-0.148***	**-0.214***	**-0.210***	**-0.210***	**-0.207***
	(0.045)	(0.060)	(0.058)	(0.058)	(0.058)
Income Quartiles: Second	**0.245***	**0.294***	**0.296***	**0.296***	**0.297***
	(0.023)	(0.035)	(0.036)	(0.036)	(0.036)
Third	**0.448***	**0.493***	**0.495***	**0.494***	**0.493***
	(0.030)	(0.044)	(0.045)	(0.045)	(0.045)
Fourth (highest)	**0.695***	**0.775***	**0.780***	**0.780***	**0.783***
	(0.034)	(0.049)	(0.050)	(0.050)	(0.050)
p-value	0.00	0.01	0.00	0.00	0.05
Obs.	271,224	103,773	103,773	103,773	103,773

Note: [1] The ordered logit regressions all include Country and Year dummies from 1975-92. [2] Bold-face denotes significant at the 10 percent level; Starred bold-face at the 5 per cent level. [3] Cut points (standard errors) are -1.32 (0.14), 1.50 (0.16) for reg. (1); -1.48 (0.21), 1.34 (0.20) for reg. (2); -2.49 (0.86), 0.33 (0.85) for reg. (3); -2.92 (0.67), -0.10 (0.69) for reg. (4); -3.11 (0.87), -0.29 (0.83) for reg. (5).

Table 4.2

Determinants of Happiness for the Left and Right Pooled Across 12 European Nations: 1975-92.

Dep Var: Happiness	Left			Right		
	(1)	(2)	(3)	(4)	(5)	(6)
Inequality	-6.767*	-6.811*	-6.142*	-0.850	-1.222	-1.088
	(1.332)	(1.526)	(1.149)	(2.381)	(2.084)	(1.492)
	-0.052	-0.052	-0.047	-0.004	-0.005	-0.005
	-0.040	-0.040	-0.037	-0.008	-0.011	-0.010
Output		-1.1e-4	-6.1e-5		1.5e-4	2.3e-4*
		(1.6e-4)	(1.4e-4)		(7.9e-5)	(9.5e-5)
		-0.037	-0.020		0.025	0.036
		-0.030	-0.017		0.064	0.100
Unemployment Rate			0.781			1.316
			(2.270)			(2.788)
			0.005			0.005
			0.005			0.012
Inflation Rate			-2.202			-2.931
			(1.920)			(1.516)
			-0.022			-0.018
			-0.019			-0.036
Personal Controls	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
p-value	0.00	0.03	0.01	0.21	0.27	0.03
Obs.	29,331	29,331	29,331	23,155	23,155	23,155

Note: [1] All the regressions are ordered logits. [2] Bold-face denotes significant at the 10 percent level; Starred bold-face at the 5 per cent level. [3] Cut points (standard errors) are -3.77 (0.56), -0.95 (0.51) for reg. (1); -4.87 (1.46), -2.05 (1.50) for reg. (2); -4.15 (1.58), -1.33 (1.58) for reg. (3); -1.85 (1.04), 0.98 (1.06) for reg. (4); -0.54 (0.94), 2.29 (0.95) for reg. (5); 0.26 (1.53), 3.09 (1.52) for reg. (6). [4] The two cells below each coefficient (standard error) report the probabilities of shifting between the different happiness categories due to a one-standard deviation change in the corresponding explanatory variable (see text for more detail).

Table 4.3

Determinants of Happiness for the Poor and Rich Pooled Across 12 European Nations: 1975-92.

Dep Var: Happiness	Poor			Rich		
	(1)	(2)	(3)	(4)	(5)	(6)
Inequality	-3.731	-3.827*	-4.667*	-1.091	-1.068	-1.602
	(1.754)	(1.776)	(1.392)	(2.149)	(2.091)	(1.586)
	-0.029	-0.030	-0.036	-0.005	-0.005	-0.007
	-0.025	-0.025	-0.030	-0.009	-0.009	-0.013
Output		-1.0e-4	-1.1e-4		4.2e-5	1.1e-4
		(9.1e-5)	(8.4e-5)		(5.2e-5)	(1.1e-4)
		-0.035	-0.039		0.008	0.020
		-0.029	-0.032		0.016	0.041
Unemployment Rate			-2.242			0.332
			(1.589)			(2.449)
			-0.016			0.001
			-0.014			0.003
Inflation Rate			-2.990*			-2.949
			(1.279)			(1.770)
			-0.031			-0.019
			-0.026			-0.032
Personal Controls	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
p-value	0.00	0.01	0.02	0.24	0.03	0.01
Obs.	50,995	50,995	50,995	52,778	52,778	52,778

Note: [1] All the regressions are ordered logits. [2] Bold-face denotes significant at the 10 percent level; Starred bold-face at the 5 per cent level. [3] Cut points (standard errors) are -3.06 (0.82), -0.42 (0.81) for reg. (1); -4.07 (0.85), -1.43 (0.88) for reg. (2); -4.81 (0.87), -2.18 (0.86) for reg. (3); -2.45 (0.95), 0.55 (0.94) for reg. (4); -2.03 (0.76), 0.96 (0.74) for reg. (5); -1.66 (1.38), 1.34 (1.31) for reg. (6). [4] The two cells below each coefficient (standard error) report the probabilities of shifting between the different happiness categories due to a one-standard deviation change in the corresponding explanatory variable (see text for more detail).

Table 5.1
Summary Comparison of the Determinants of Happiness Between Europe and the United States.

Dep Var Happiness	Europe All (1)	US All (2)	Europe Left (3)	US Left (4)	Europe Right (5)	US Right (6)	Europe Poor (7)	US Poor (8)	Europe Rich (9)	US Rich (10)	Europe Poor Left (11)	US Poor Left (12)	Europe Rich & Left (13)	US Rich & Left (14)
Inequality	**-3.367***	-0.238	**-6.142***	-0.343	-1.088	-1.484	**-4.667***	4.521	-1.602	-5.424	**-7.571***	7.203	**-4.705***	-9.637
	(1.460)	(2.215)	(1.149)	(3.211)	(1.492)	(3.460)	(1.392)	(4.269)	(1.586)	(4.261)	(1.004)	(6.230)	(1.355)	(5.598)
	-0.021	-0.001	-0.047	-0.001	-0.005	-0.003	-0.036	0.015	-0.007	-0.010	-0.068	0.025	-0.029	-0.021
	-0.025	-0.001	-0.037	-0.002	-0.010	-0.009	-0.030	0.025	-0.013	-0.035	-0.040	0.038	-0.032	-0.059
Output, Inflation Unemployment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Personal Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country / State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
p-value	0.05	0.00	0.01	0.00	0.03	0.00	0.02	0.00	0.01	0.00	0.05	0.00	0.01	0.00
Obs.	103,773	24,333	29,331	12,343	23,155	8,760	50,995	12,140	52,778	12,193	14,270	6,493	15,061	5,850

Note: [1] All the regressions are ordered logits. [2] Bold-face denotes significant at the 10 percent level; Starred bold-face at the 5 per cent level. [3] Cut points (standard errors) are -3.11 (0.87), -0.29 (0.83) for reg. (1); -2.16 (1.04), 0.84 (1.04) for reg. (2); -4.15 (1.58), -1.33 (1.58) for reg. (3); -1.10 (1.42), 1.88 (1.41) for reg. (4); 0.26 (1.53), 3.09 (1.52) for reg. (5); -5.59 (1.39), -2.47 (1.41) for reg. (6); -4.81 (0.87), -2.18 (0.86) for reg. (7); -0.36 (2.11), 2.51 (2.12) for reg. (8); -1.66 (1.38), 1.34 (1.31) for reg. (9); -4.70 (1.64), -1.51 (1.65) for reg. (10); -4.12 (2.43), -1.48 (2.44) for reg. (11); 1.43 (2.52), 4.33 (2.53) for reg. (12); -4.58 (1.13), -1.59 (1.05) for reg. (13); -4.51 (2.11), -1.38 (2.10) for reg. (14). [4] The two cells below the coefficients (standard errors) report the probabilities of shifting between the different happiness categories due to a one-standard deviation change in inequality (see text for more detail).

Appendix 1: Description of the Data and the Surveys

Data Description

HAPPINESS: For the US, the individual responses to the US General Social Survey question that reads *"Taken all together, how would you say things are these days – would you say that you are very happy, pretty happy, or not too happy?"*. Accordingly, three categories were created. For Europe, the individual responses to the Eurobarometer that reads: *On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead?"*. Responses falling into the two middle categories (*"fairly satisfied"* and *"not very satisfied"*) are considered to have answered the same category. Accordingly, three categories were created.

LEFT/RIGHT: In the US, we classified as "LEFT" the respondents that replied 0, 1 or 2 to the question *"Generally speaking, do you usually think of yourself as a Republican, Democrat, Independent, or what?"*, where 0 equals *"Strong Democrat"*, 1 equals *"Not very strong Democrat"* and 2 equals *"Independent, close to Democrat"*. We classified as "right" the respondent that replied 4, 5 or 6, where 4 equals *"Independent, close to Republican"*, 5 equals *"Not very strong Republican"* and 6 equals *"Strong Republican"*.
In Europe, the classification uses a question in the Eurobarometer asking respondents *"In political matters, people talk of 'the left' and 'the right'. How would you place your own views on this scale?"* (from 1 to 10). Respondents were classified as being "left" if their response was in categories 1, 2, 3 or 4 and "right" if their reponse was 7, 8, 9, or 10.

RICH/POOR: A respondent is classified as "rich" if he/she belongs to the top two income quartiles, and as "poor" otherwise. For the US these quartiles are based on the individual's position in his/her State in each year. For Europe the quartiles are based on the individual's position in his/her country in each year.

MURDER: The number of murders per 100,000 people for each year in each U.S. State. From "Crime in the US", various years, FBI, Washington, Government Printing Office.

INEQUALITY: For the US, Gini Ratios by State from the US Census Bureau. For Europe, the Gini Ratios are obtained from the K. Deininger and L. Squire (1996) *World Bank* "high quality" data set, described in "A New Data Set Measuring Income Inequality", <u>World Bank Economic Review</u>, 10, pp 565-591.

OUTPUT: For the US, the State Annual Series of average per capita personal income supplied by the Bureau of Economic Analysis of the US Department of Commerce. This series was deflated by the CPI to obtain our measure of real output. For Europe, real GDP per capita at the price levels and exchange rates of 1985, expressed in U.S. dollars, was obtained from the OECD.

UNEMPLOYMENT RATE: For the US, State level unemployment rates supplied by the Bureau of Labor Statistics of the US Department of Labor. For Europe, unemployment rates are obtained from the CEP OECD Data set.

INFLATION RATE: For the US, calculated from the Consumer Price Index (CPI) supplied by the Bureau of Labor Statistics of the US Department of Labor. For Europe, the inflation rate is measured by the rate of change in the CPI from the CEP OECD Data Set.

Surveys

The United States General Social Survey (1972-1994)

The General Social Surveys have been conducted by the National Research Center at the University of Chicago since 1972. Interviews have been undertaken during February, March and April of 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1980, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1993 and 1994. There were no surveys in 1979, 1981 and 1992. There were a total of 32380 completed interviews (1613 in 1972, 1504 in 1973, 1484 in 1974, 1490 in 1975, 1499 in 1976, 1530 in 1977, 1532 in 1978, 1468 in 1980, 1506 in 1982, 354 in the 1982 black oversample, 1599 in 1983, 1473 in 1984, 1534 in 1985, 1470 in 1986, 1466 in 1987, 353 in the 1987 black oversample, 1481 in 1988, 1537 in 1989, 1372 in 1990, 1517 in 1991, 1606 in 1993 and 2992 in 1994).

The Euro-Barometer Survey Series [1975-1992]

The Euro-Barometer Surveys used in this paper were conducted by various research firms operated within the European Community (E.C.) countries under the direction of the European Commission. Either a nationwide multi-stage probability sample or a nationwide stratified quota sample of persons aged 15 and over was selected in each of the E.C. countries. The cumulative data file used contains 36 attitudinal, 21 demographic and 10 analysis variables selected from the European Communities Studies, 1970-1973, and Euro-Barometers, 3-38.

Data for Belgium, Denmark, France, Germany, Ireland, Italy, Luxembourg, Netherlands and the United Kingdom were available for the full sample period which was used (1976-1990) whereas data were only available from 1981 to 1990 for Greece and from 1985 to 1990 for both Spain and Portugal. The number of observations in our sample was 4993 for Belgium, 24764 for Britain, 4054 for Denmark, 4346 for France, 5708 for West Germany, 2652 for Greece, 1812 for Ireland, 24189 for Italy, 494 for Luxembourg, 20255 for The Netherlands, 2380 for Portugal and 8126 for Spain.

Appendix 2: Controlling for Murder in the United States

The Determinants of U.S. Happiness Controlling for Murder: 1975-94.

Dep Var: Happiness	All (1)	Left (2)	Right (3)	Poor (4)	Rich (5)
Inequality	-2.264*	-3.095*	-0.210	-0.182	-4.295*
	(0.991)	(1.495)	(1.752)	(1.192)	(1.347)
Output	6.3e-6	1.5e-5	-1.5e-5	-3.3e-5	4.5e-5
	(1.9e-5)	(2.8e-5)	(3.4e-5)	(3.1e-5)	(2.6e-5)
Unemployment Rate	-3.983*	-4.453*	-3.127	-5.300*	-2.695
	(1.238)	(1.506)	(2.299)	(1.260)	(1.805)
Inflation Rate	0.176	0.526	0.646	-0.093	0.467
	(0.707)	(1.071)	(1.130)	(0.923)	(0.967)
Murders	-0.011	-0.008	-0.011	-0.013	-0.011
	(0.012)	(0.013)	(0.023)	(0.017)	(0.014)
Personal Controls	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	No	No	No	No	No
Obs.	24,333	12,140	12,140	12,140	12,193

Note: [1] All the regressions are ordered logits. p-values are all zeo [2] Bold-face denotes significant at the 10 percent level; Starred bold-face at the 5 per cent level. [3] Cut points (standard errors) -2.92 (0.48), 0.07 (0.48) for reg. (1); -2.11 (0.57), 0.87 (0.57) for reg. (2); -4.60 (0.81), -1.48 (0.81) for reg. (3); -2.47 (0.61), 0.39 (0.62) for reg. (4); -3.79 (0.73), -0.60 (0.73) for reg. (5).

The Determinants of U.S. Happiness Controlling for Murder – Year Effects: 1975-94.

Dep Var: Happiness	All (1)	Left (2)	Right (3)	Poor (4)	Rich (5)	Poor & Left (6)	Rich & Left (7)
Inequality	-0.109	-0.162	-1.388	4.776	-5.391	7.124	-9.078
	(2.207)	(3.241)	(3.529)	(4.289)	(4.211)	(6.178)	(5.337)
Output	1.2e-5	1.7e-5	-4.5e-5	-9.9e-6	2.6e-5	-2.0e-5	5.2e-5
	(2.8e-5)	(3.3e-5)	(4.3e-5)	(4.9e-5)	(3.7e-5)	(6.0e-5)	(6.3e-5)
Unemployment Rate	-2.817	-3.156*	-3.667	-4.352*	-1.663	-3.463	-3.302
	(1.485)	(1.488)	(2.808)	(1.808)	(1.687)	(2.409)	(1.986)
Murders	-0.008	-0.011	-0.007	-0.016	-0.002	0.005	-0.033
	(0.010)	(0.013)	(0.024)	(0.017)	(0.012)	(0.024)	(0.019)
Personal Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	24,333	12,343	8,760	12,140	12,193	6,493	5,850

Note: [1] All the regressions are ordered logits. p-values are all zero. [2] Bold-face denotes significant at the 10 percent level; Starred bold-face at the 5 per cent level. [3] Cut points (standard errors) are -2.13 (1.04), 0.87 (1.04) for reg. (1); -1.06 (1.41), 1.92 (1.40) for reg. (2); -5.58 (1.42), -2.46 (1.43) for reg. (3); -0.46 (1.91), 2.41 (1.92) for reg. (4); -4.69 (1.63), -1.50 (1.64) for reg. (5); 1.42 (2.52), 4.32 (2.52) for reg. (6); -4.48 (2.03), -1.35 (2.02) for reg. (7).