Inequality and happiness: are Europeans and Americans different?

Alberto Alesina[a,*], Rafael Di Tella[b], Robert MacCulloch[c]

[a] NBER and CEPR, Harvard University, Cambridge, USA
[b] Harvard Business School, USA
[c] Princeton University, Princeton, USA

Abstract

We study the effect of the level of inequality in society on individual well-being using a total of 123,668 answers to a survey question about "happiness". We find that individuals have a lower tendency to report themselves happy when inequality is high, even after controlling for individual income, a large set of personal characteristics, and year and country (or, in the case of the US, state) dummies. The effect, however, is more precisely defined statistically in Europe than in the US. In addition, we find striking differences across groups. In Europe, the poor and those on the left of the political spectrum are unhappy about inequality; whereas in the US the happiness of the poor and of those on the left is uncorrelated with inequality. Interestingly, in the US, the rich are bothered by inequality. Comparing across continents, we find that left-wingers in Europe are more hurt by inequality than left-wingers in the US. And the poor in Europe are more concerned with inequality than the poor in America, an effect that is large in terms of size but is only significant at the 10% level. We argue that these findings are consistent with the perception (not necessarily the reality) that Americans have been living in a mobile society, where individual effort can move people up and down the income ladder, while Europeans believe that they live in less mobile societies.
© 2003 Published by Elsevier B.V.

Keywords: Inequality; Happiness; Income

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

* Corresponding author. Tel.: +1-617-495-8388; fax: +1-617-495-7730.
E-mail address: aalesina@harvard.edu (A. Alesina).

industrial countries, European governments are more heavily involved with redistribution than that of the United States. European fiscal systems are more progressive than in the United States and the welfare state is more generous in Europe, where the share of government in the economy is substantially larger than in the United States. For instance, in 2000 the share of total government spending (excluding interest payments) over GDP was about 30% in the US, versus 45% in Continental Europe. The share of transfers over GDP was about 11% in the US and about 18% in Europe, and more than 20 in Germany, Sweden and other northern European countries.[1] At the end of the 19th century, the share of transfers over GDP was less than 1% both in Europe and the US. It was about 6% of GDP in the US, and about 10% of GDP in Europe in 1960. The growth of transfers explains almost all of the increase in the size of government and the difference in the size of government between Europe and the US.[2]

If democratic governments redistribute so much, it must mean that a large fraction of the population favors these programs that are meant to reduce inequality. 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 do not want to be the ones who will have to support redistributive schemes. Conversely the rich should oppose redistributions, but if they fear to become poor they may see redistributive policies as an insurance against future potential misfortunes. Therefore, social mobility should influence how forward looking individuals value redistributive polices.[3]

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 indirectly 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. The bottom line is that inequality must be perceived as a social evil especially in those countries with large redistributive programs.

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 "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.

---

[1] For historical data on the growth of redistributive programs in industrial countries, see Tanzi and Schuknecht (2000). For a comparison of redistributive policies in the US and in Europe, see Alesina et al. (2001).

[2] See Alesina et al. (2001) for a discussion and comparison of the evolution of European versus American welfare states.

[3] See Benabou and Ok (2001) for a precise theoretical formulation of this idea and Alesina and La Ferrara (2000) for empirical tests.

We find some intriguing results. First, Europeans and Americans report themselves less happy when inequality is high; however, the effect of inequality on happiness is more precisely estimated for Europe.[4] Second, aversion to inequality is concentrated amongst different ideological and income groups across the two regions. There is no clear ideological divide in the US concerning the effect of inequality on happiness. In contrast, those who define themselves leftist show a strong distaste for inequality in Europe, while those who define themselves rightists are unaffected by it. The breakdown of rich versus poor also shows some differences between Europe and the US. In Europe, the happiness of the poor is strongly negatively affected by inequality, while the effect on the rich is smaller in size and statistically insignificant. In the US, one finds the opposite pattern, namely that the group whose happiness seems to be most adversely affected by inequality is the rich. A striking result is that the US poor seem totally unaffected by inequality. Any significance of the inequality coefficient in the US population is mainly driven by the rich.

We argue that these results are due to different perceptions of the degree of social mobility in the US and Europe. Americans believe that their society is mobile so the poor feel that they can move up and the rich fear falling behind. In Europe, a perception of a more immobile society makes the poor dislike inequality since they feel "stuck".[5] Alesina et al. (2001) provide different evidence that this is indeed the case. For instance, according to the World Values survey less than 30% of Americans believe that poor are trapped in poverty while 60% of Europeans have this belief. Americans definitively believe that society is mobile and one can escape poverty with hard work. When asked about poverty, in fact about 60% of Americans believe that the poor are lazy while less than 30% of Europeans have the same beliefs. The same authors point out the large mismatch between these strong beliefs and available measures of actual mobility in Europe and US, but for our purposes what matters are individuals' beliefs.

Given that European citizens seem so averse to inequality, and believe that the poor are stuck in poverty and worthy of help, they should favor redistributive policies, i.e. the welfare state. Broadly speaking this is the message of Boeri et al. (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 five out of six 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

---

[4] Given the lack of an established source in the literature, we experimented with different inequality data for the US. The data we use in this version of the paper are probably the most accurate. However, it is worth mentioning that with other data the effect of inequality on well-being in the US is even weaker and not statistically significant. For more discussion of this point, see the working paper version of this article.

[5] Unfortunately, data problems make conclusive tests of this hypothesis concerning social mobility in the two sides of the Atlantic almost impossible, as noted by Atkinson et al. (1992). However, in an interesting comparison, Checchi et al. (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.

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).[6] 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; Winkelmann and Winkelmann, 1998). Di Tella et al. (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 et al., 1996; Frey and Stutzer, 1999), the inflation–unemployment trade-off (Di Tella et al., 2001; Wolfers, 2002), the role of partisanship in politics (Di Tella and MacCulloch, 1998) and the role of social norms (Stutzer and Lalive, 2000). An early paper by Morawetz et al. (1977) discusses how average happiness varies across two communities in Israel that have different levels of inequality.[7]

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 (1975) and Meltzer and Richards (1981) on inequality and redistributions, and Piketty (1995) and Benabou and Ok (2001) on social mobility. Recent empirical work on the demand for redistribution includes Alesina and La Ferrara (2000), Ravallion and Lokshin (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. Data and empirical strategy

2.1. Description

The analysis examines US happiness data from the United States General Social Survey (1972–1997) (see Davis and Smith, 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 25 years. In the main analysis,

---

[6] There is, to be sure, a large literature in psychology using self reported measures of well-being (see Diener et al., 1999; Kahneman et al., 1999).

[7] 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 et al. (1997) propose a formal axiomatic defense of experienced utility (see also Tinbergen, 1991; van Praag, 1991).

data limitations on state-level inequality data force us to restrict attention to the 19,895 answers that are available for the period 1981–1996.

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, amongst others, that interest us (see Inglehart et al., 1994). The first is "Taking all things together, how would you say things are these days—would you say 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 a large number of individuals over 18 years of age to a "life satisfaction" question. 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 1992 instead of just 1975–1986. "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 bottom categories (not very satisfied and not at all satisfied) into one. In any case, very similar results obtain when the four categories are used for Europe. Appendix A describes both the US General Social Survey and the Euro-barometer Survey Series in greater detail.

For the United States, we take Gini coefficients of per state per year for the period 1981–1996 from Wu et al. (2002). They use income data from the Current Population Survey (CPS) March Supplement. Beginning in 1981, the CPS includes information on the value of government transfers, tax liability and credit for each family. Wu et al. then collect data from the American Housing Survey, the Income Survey Development Program and the Internal Revenue Service and combine them with the CPS data to create simulations of taxes paid, number of tax filing units, adjusted gross income, and other characteristics for the March CPS. Based on the augmented series, the authors construct the after-transfer, after-tax monetary income by adding the CPS income with the corresponding value of food stamps, tax payments or credits for each family. Based on these data, they create what to our knowledge is one of the best series of inequality measures at the state level for the US that we have available today. For more description of these data, see Wu et al. (2002).

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 nonmonetary 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, three observations for Denmark, three observations for France and four

observations for Germany are based on gross income whereas the rest are based on net income. In addition, although the Deininger and Squire (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 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 A.

Tables A-US, B-US, A-Eur and B-Eur 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 57% in the US and 54% in Europe are in the intermediate category. Patterns of happiness and marital status are similar. Interestingly, looking across the columns denoting different income quartiles, 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. Here, we review some of the arguments made in the previous literature in favor of using happiness data.

Table A-US
Happiness in the United States: 1981 to 1996

Reported happiness	All	Unemployed	Marital status				
			Married	Divorced			
Very happy	31.29	18.85	39.06	19.39			
Pretty happy	57.36	52.35	53.90	62.84			
Not too happy	11.35	28.80	7.04	17.77			
Reported happiness	Partisan support		Income quartiles				
	Left	Right	1st (lowest)	2nd	3rd	4th (highest)	
Very happy	28.53	36.02	22.20	28.73	33.11	40.48	
Pretty happy	58.60	55.69	57.91	59.30	58.74	53.72	
Not too happy	12.87	8.29	19.89	11.97	8.15	5.80	

Based on 19,895 observations. All numbers are expressed as a percentage.

Table B-US
Summary statistics for the United States: 1981 to 1996

Variable	Units	Observations	Mean	Standard deviation	Minimum	Maximum
Inequality	Gini coefficient	Total = 491	0.337	0.032	0.271	0.446
Between		$n = 44$		0.027	0.290	0.398
Within		$\bar{t} = 11.2$		0.016	0.298	0.425
Income	1995 US$ and ex-rates	Total = 491	33,762	8,844	10,905	64,766
Between		$n = 44$		5,820	22,769	49,080
Within		$\bar{t} = 11.2$		6,726	15,217	59,862
Unemployment rate	Proportion	Total = 491	0.067	0.023	0.024	0.180
Between		$n = 44$		0.016	0.033	0.119
Within		$\bar{t} = 11.2$		0.017	0.026	0.132
Murder	Proportion	Total = 491	7.285	3.519	0.200	20.3
Between		$n = 44$		3.461	1.267	15.1
Within		$\bar{t} = 11.2$		1.147	2.246	12.5
Auto theft	Proportion	Total = 491	444	228.3	111	1067
Between		$n = 44$		211.3	117.5	850.4
Within		$\bar{t} = 11.2$		98.4	121.6	890.4

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 Ekman et al. (1990), for example, find that individuals reporting to be very happy tend to smile more. Shedler et al. (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 electroenceph-

Table A-Eur
Life satisfaction in Europe: 1975 to 1992

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

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

Table B-Eur
Summary statistics for Europe: 1975 to 1992

Variable	Units	Observations	Mean	Standard deviation	Minimum	Maximum
Inequality	Gini coefficient	Total = 69	0.303	0.043	0.229	0.430
Between		$n = 12$		0.042	0.255	0.376
Within		$\bar{t} = 5.75$		0.021	0.264	0.359
Income	1995 US$	Total = 69	11,311	3,603	2,939	17,806
Between		$n = 12$		3,929	3,370	15,707
Within		$\bar{t} = 5.75$		1,346	8,393	14,501
Unemployment rate	Proportion	Total = 69	0.083	0.042	0.002	0.220
Between		$n = 12$		0.043	0.011	0.190
Within		$\bar{t} = 5.75$		0.023	0.029	0.134
Inflation rate	Proportion	Total = 69	0.080	0.058	− 0.007	0.245
Between		$n = 12$		0.043	0.033	0.188
Within		$\bar{t} = 5.75$		0.041	0.003	0.226

alogram 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, Siedlitz et al. (1997) who show that happiness data are correlated with subject recall of positive life events; Diener (1984) and Sandvik et al. (1993) who show the data are correlated with reports of friends and family members. Konow and Earley (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 Earley (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 negatively correlated with suicide rates, as Di Tella et al. (1997) show.[8] The same paper (Di Tella et al., 1997) also presents micro-econometric 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

Our general strategy is to relate society's level of well-being to the degree of inequality in society. We compare US states and European countries, and we relate "happiness" in different US states and European countries to inequality, other macroeconomic variables

---

[8] 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.

and several individual characteristics. We take advantage of cross-state (or cross-country) and time series variation in inequality and we run similar regressions 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

$$\text{Happy}^g_{ist} = \alpha^g \text{Inequality}_{st} + \beta^g \text{MACRO}_{st} + \delta^g \text{MICRO}_{ist} + \eta^g_s + \mu^g_t + \varepsilon^g_{ist} \qquad (1)$$

where Happy_{ist} is the utility of individual, i, living in state, s, in year t. In Europe, s refers to countries. The superscript g refers to the fact that we consider the whole sample (in which case g = whole sample), but we also divide it on the basis of income (in which case g = rich, poor), or of ideological inclination (in which case g = right, left). The vector MACRO_{st} refers to a set of variables aggregated at the State (or country) level that has previously been found to affect individual happiness. These include the inflation rate (Inflation) and the Unemployment rate (unemployment). We also present some checks using the crime rate (Murder). The vector MICRO_{ist} 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, a dummy variable for the cross-sectional units (state in the US, country in Europe), μ_t, a dummy for each year and ε_{ist}, 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).

Estimation of Eq. (1) is constrained by the fact that we cannot directly observe the latent continuous variable, Happy_{ist}. What we do observe is three discrete response outcomes that come from the question ''Are you happy?''. From these, define the following three dichotomous variables: $\text{HAPPINESS}^1_{ist} = 1$ if the person responds ''Not too happy'' and 0 otherwise; $\text{HAPPINESS}^2_{ist} = 1$ if the person responds ''Fairly happy'' and 0 otherwise; $\text{HAPPINESS}^3_{ist} = 1$ if the person responds ''Very happy'' and 0 otherwise. The ordered logit model that we use for estimation assumes that: $\text{HAPPINESS}^1_{ist} = 1$ if $\text{Happy}_{ist} < c_1$; $\text{HAPPINESS}^2_{ist} = 1$ if $c_1 < \text{Happy}_{ist} < c_2$; $\text{HAPPINESS}^3_{ist} = 1$ if $\text{Happy}_{ist} > c_3$ where c_1, c_2 and c_3 are the thresholds that the latent variable must cross to change the value of the corresponding dichotomous variable.[9]

We also test for differences between Europe and the US by pooling these two data sets and running the following ordered logit specification:

$$\text{Happy}_{ist} = (\alpha^{\text{US}} + r_{ist}(\alpha^{\text{EUR}} - \alpha^{\text{US}}))\text{Inequality}_{st}$$
$$+ (\beta^{\text{US}} + r_{ist}(\beta^{\text{EUR}} - \beta^{\text{US}}))\text{MACRO}_{st}$$

---

[9] The ordered logit regressions are implemented using the Generalized Estimating Equation (GEE) setup developed by Liang and Zeger (1986). GEE allows for an unrestricted correlation structure within clusters and can be used for nonlinear models. It is GEE standard errors that are produced by the STATA cluster command. The operating characteristic of alternative cluster adjustments is an active area for current research. For further discussion, see Angrist and Lavy (2002), and for Monte Carlo evidence of alternative adjustment procedures, see for example, Agurzky and Schmidt (2001), Bertrand et al. (2001), Braun and Feng (2001) and Thornquist and Anderson (1992).

$$+ (\delta^{\mathrm{US}} + r_{ist}(\delta^{\mathrm{EUR}} - \delta^{\mathrm{US}}))\mathrm{MICRO}_{ist} + \eta_s^{\mathrm{US}}$$
$$+r_{ist}(\eta_s^{\mathrm{EUR}} - \eta_s^{\mathrm{US}}) + \mu_t^{\mathrm{US}} + r_{ist}(\mu_t^{\mathrm{EUR}} - \mu_t^{\mathrm{US}}) + \varepsilon_{ist} \qquad (2)$$

where the dummy variable, r_{ist}, is equal to one when the individual is from Europe. Thus $\alpha^{\mathrm{EUR}} - \alpha^{\mathrm{US}}$ is the change in the coefficient on Inequality when the individual is from Europe, compared to the US. We test for the significance of this coefficient in order to see if preferences over inequality differ across the two continents.

In brief, there are two broad reasons why inequality may affect individual well-being. The first is because individuals may have a taste for equality, much like they enjoy looking at a nice painting. Thurow (1971) argued that this might be important, particularly as societies get richer. An alternative is that people do not have such a direct taste for equality, but that they regard income inequality as an indicator of their future income. A rich person, for example, may see large differences in income as a good thing if he interprets them as a sign that he/she will continue to be rich in the future. This will depend quite crucially on the degree of mobility that is present in society, or that is perceived to prevail. Thus, comparing the effect of inequality on happiness across societies with different levels of mobility, actual or perceived, and across different income and ideological groups will provide a way to distinguish between these alternative theories. More specifically, the income-equality-as-taste hypothesis predicts that the negative effect of inequality on happiness should be stronger amongst rich individuals. If mobility is perceived to be high, this good (i.e. equality) may be less appreciated, so if we take Europe to be less mobile than America, the rich in Europe should display particularly strong aversion to inequality. On the other hand, the hypothesis of inequality-as-predictor-of-future-income predicts that the effect should not particularly hit the poor in mobile America, as they see inequality as an indication of the temporary nature of their condition. Similarly, the American rich should be negatively affected by inequality as they interpret this as an indication of a grim future, unless upward and downward mobility are perceived to be different. Both hypotheses suggest that the left are more prone to be affected by inequality as they may have a stronger taste for equality (i.e. this taste may also vary across ideologies). And left wing ideology may indicate a belief in low levels of mobility.

3. Happiness and inequality in the United States

The period from the early 1980s to the mid-1990s is characterized by a large and noticeable increase in inequality, particularly in the US. Therefore, this is a rather interesting time period to analyze from our perspective, since there is much variability in the data. All the regressions include state and year dummies.

We begin in column 1 of Table 1-US with a regression that includes only the individual characteristics of the respondent. 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 coefficient on income shows. 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

Table 1-US
The determinants of happiness in the US, 1981–1996

Dep Var: happiness	(1)	(2)	(3)	(4)
Inequality		− 2.949*	− 2.136	− 2.102
		(1.202)	(1.162)	(1.157)
		− 0.019	− 0.014	− 0.014
Unemployment rate			− 2.321	− 2.328
			(1.363)	(1.360)
			− 0.011	− 0.011
Personal characteristics				
Unemployed	− 0.637*	− 0.633*	− 0.630*	− 0.623*
	(0.106)	(0.104)	(0.104)	(0.105)
Self-employed	0.049	0.051	**0.050**	**0.055**
	(0.040)	(0.040)	**(0.039)**	**(0.039)**
Retired	0.011	0.013	0.014	0.020
	(0.055)	(0.055)	(0.055)	(0.056)
School	**0.218**	0.218	0.218	0.224
	(0.134)	(0.134)	(0.134)	(0.135)
Home	− 0.038	− 0.037	− 0.036	− 0.030
	(0.048)	(0.048)	(0.048)	(0.048)
Other	**− 0.563***	**− 0.560***	− 0.558	− 0.547*
	(0.107)	**(0.108)**	(0.107)	(0.107)
Male	− 0.162*	− 0.163*	− 0.162*	− 0.164*
	(0.029)	(0.029)	(0.029)	(0.030)
Age	− 0.037*	− 0.037*	− 0.037*	− 0.038*
	(0.007)	(0.007)	(0.007)	(0.007)
Age squared	4.7e − 4*	4.6e − 4*	4.7e − 4*	4.4e − 4*
	(7.5e − 5)	(7.5e − 5)	(7.4e − 5)	(6.3e − 5)
Education				
College	0.144*	0.145*	0.145*	0.143*
	(0.031)	(0.031)	(0.031)	(0.031)
Graduate	0.171*	0.173*	0.173*	0.173*
	(0.055)	(0.055)	(0.055)	(0.055)
Marital status				
Married	0.631*	0.630*	0.630*	0.620*
	(0.047)	(0.047)	(0.047)	(0.049)
Divorced	− 0.174*	− 0.174*	− 0.175*	− 0.175*
	(0.073)	(0.073)	(0.073)	(0.073)
Separated	− 0.487*	− 0.485*	− 0.486*	− 0.486*
	(0.105)	(0.105)	(0.105)	(0.105)
Widowed	− 0.345*	− 0.346*	− 0.345*	− 0.349*
	(0.078)	(0.077)	(0.077)	(0.078)
Number of children				
1	− 0.184*	− 0.184	− 0.183*	− 0.182*
	(0.035)	(0.035)	(0.035)	(0.035)
2	− 0.140*	− 0.141*	− 0.140*	− 0.139*
	(0.044)	(0.044)	(0.044)	(0.045)
3	− 0.164*	− 0.164*	− 0.162*	− 0.161*
	(0.049)	(0.049)	(0.049)	(0.049)

Table 1-US (*continued*)

Dep Var: happiness	(1)	(2)	(3)	(4)
Personal characteristics				
Income	**9.9e − 6***	**1.0e − 05***	**1.0e − 05***	**8.3e − 6***
	(8.7e − 7)	**(8.7e − 7)**	**(8.7e − 7)**	**(9.7e − 7)**
Top 2 income quartiles				**0.116***
				(0.056)
Race: Black	**− 0.393***	**− 0.393***	**− 0.394***	**− 0.393***
	(0.049)	**(0.048)**	**(0.048)**	**(0.048)**
Obs.	19,895	19,895	19,895	19,895

[1] Ordered logit regressions, include state and year dummies. [2] Boldface denotes significance at the 10% level; starred boldface at the 5% level. [3] Standard errors in parentheses. Cut points in Appendix B. The cell in italics below the standard error of the Inequality and Unemployment rate coefficient reports the predicted change in the proportion of people in the top happiness category due to a one standard deviation change in the corresponding explanatory variable (see text for more details). [4] Income is measured at the household level.

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.[10] There is a nonlinear effect of age: the least happy decades seem to be the 30s/40s, maybe because the stress of managing professional and personal life is at a peak. 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, members of a traditionally discriminated minority (blacks) are less happy. All these results seem quite sensible and are consistent with the literature.[11]

In column 2, we add our measure of inequality. The coefficient on inequality is negative and significant at conventional levels.[12] To simplify the comparisons across columns on macroeconomic variables, we added a number below for each coefficient and standard errors: these numbers are the effect on the probability of moving from one "level" of

[10] Stutzer and Frey (2003) use panel evidence from Germany to establish whether married people are happier, or whether happiness is a good predictor of getting married.

[11] See Di Tella et al. (1997) for comparisons of happiness equations across individual OECD countries.

[12] In the working paper version of this paper, we found no correlation between inequality and happiness in the US using inequality data (as measured by the Gini coefficient) at the state level from the 1979 and 1989 census. Even when we incorporate the 1969 census the coefficient on inequality in a US happiness regression remains insignificant. We also experimented using state inequality measures (the 80/20 ratio) created by the Economic Policy Institute with Current Population Survey data, averaged for 3 years every 10 years (i.e. 1978–1980, 1988–1990 and 1998–2000). Again the coefficient on inequality was insignificant in a US happiness regression. Finally, we used a measure of inequality (the 50/10) ratio presented in Blank (2001), calculated from annual wage data from the Outgoing Rotation Group (ORG) data of the monthly CPS, with similarly insignificant results.

happiness to the next, as a result of one standard deviation change in the corresponding right-hand side variable. Specifically, the number listed below the standard error of each macro-variable 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.[13] A rise in the Gini of 10 percentage points, equivalent to a rise from the State with the lowest level of (post-tax) inequality in the sample (Wisconsin at 0.29) to the state with the highest level of inequality (Texas at 0.39), leads to a fall in the proportion of people reporting themselves as "Very happy" of 5.8 percentage points and a rise in the proportion reporting themselves as "Not too happy" of 3.0 percentage points. Since 31.3% of Americans reported themselves as "Very happy" an increase in inequality of 10 percentage points is expected to bring about an 18.5% reduction in the amount of people reporting themselves in the top happiness category ($= 5.8/31.3$). Since 11.4% of Americans reported themselves as "Not too happy" it would also correspond to a 26% increase in the number of people reporting themselves in the bottom happiness category. A one standard deviation increase in inequality (equal to 3.2 percentage points) reduces the proportion of people reporting themselves as "Very happy" by 1.9 percentage points and increases the proportion reporting themselves as "Not too happy" by 0.9 percentage points.[14]

In the next column (column 3 in Table 1-US), we add an additional macroeconomic variable, the unemployment rate. The implied size of the coefficient on inequality is reduced by almost 27%, and the significance level drops to the 7% level.[15] Given the relatively high correlation between inequality and unemployment, equal to 0.14, this is not too surprising.[16] Interestingly, the coefficient on unemployment is negative and significant at the 9% level, even after we control for personal unemployment status. In other words, unemployment brings unhappiness above and beyond the personal costs of falling unemployed. This is consistent with the effect presented in Di Tella et al. (2001), but it is now based on data spanning a 16-year period across 44 states within a single country. A one standard deviation increase in the unemployment rate (equal to 0.023) reduces the proportion of people reporting themselves as "Very happy" by 1.1 percentage points and increases the proportion reporting themselves as "Not too happy" by 0.5 percentage

---

[13] For ordered logit, the conversion from coefficients to probability effects is calculated using the formula: ΔProbability(Person being in top happiness category)$= 1 - 1/(1 + \exp(\text{score} + \text{coefficient} \times \Delta X - \_b[\_cut2])) - (1 - 1/(1 + \exp(\text{score} - \_b[\_cut2])))$ where ΔX is the change in the explanatory variable, $\_b[\_cut2]$ is the top cut point and score refers to the predicted value of the underling continuous variable.

[14] Note that although our inequality measure has been calculated using equivalent income, the measure of income used in the US tables is measured at the household level. We ran all the identical regressions but dividing household income by the square root of family size (estimated using the available data we have on number of children). This gives a measure of equivalent income similar to those used to calculate our inequality data. The results remain almost identical.

[15] States where inequality fell and happiness did not rise include Arkansas where between 1986 and 1994 the post-tax Gini fell from 0.38 to 0.33 and average happiness of the people there dropped over this time period (from 2.3 to 2.1 averaged over a cardinal 1–3 scale). Another example is Missouri where between 1983 and 1996 the Gini fell from 0.35 to 0.32 and average happiness also went down (from 2.4 to 2.2 averaged over a 1–3 scale).

[16] In a regression of state inequality on state unemployment rates, controlling for country and year fixed effects, the coefficient on the unemployment rate is 0.457, significant at the 1% level (t-stat $= 4.6$).

points. These figures correspond to a decrease of 3.5% in the amount of people reporting themselves in the top happiness category (from 31.3% to 30.2%) and an increase of 4.4% of people self-declaring themselves as being ''Not too happy'' (from 11.4% to 11.9%).

In column 4 of Table 1-US, we add further controls for the level of individual income, namely a dummy that indicates if the respondent's income is in the top half of the state's income distribution. The coefficient on this variable (Top 2 income quartiles) is positive and comfortably significant, suggesting that even after controlling for individual income, the relative position of the respondent in terms of the state's income ladder matters. The coefficients on state unemployment and inequality are unaffected.

One of the reasons why inequality may bring unhappiness is because it is correlated with crime. In Appendix C, we show that these results on inequality do not change even after controlling for crime, measured by auto-theft and murder rates. It turns out that the coefficients on these measures of crime are very imprecisely estimated. Experiments with additional crime data (available upon request) confirm this result. We have chosen not to include crime variables in our basic 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 2-US, we report the identical regressions of Table 1-US 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 again the coefficients on personal characteristics, as there are some intriguing differences across groups (see also the next table). For example, comparing columns (2) and (5) the coefficient on becoming unemployed is larger in absolute value (i.e. more negative) for the Right Wing subsample than the Left Wing. For left-wingers falling unemployed leads to a 8.4 percentage point drop in the probability of reporting themselves ''Very happy'' compared to a 14 percentage point drop for right-wingers. Perhaps right-wingers are less prone to assume that their unemployed status is due to a public policy issue rather than to personal shortcomings. Being self-employed is only correlated with higher happiness for the Right Wing subsample, a finding that has some relevance for the empirical literature on entrepreneurship (e.g. Blanchflower and Oswald, 1998). Other differences include the finding that the coefficient on being male and on being black are more negative in the Right Wing subsample. Perhaps black conservatives, in addition to being black also feel some isolation from their racially defined community, which is overwhelmingly on the left of the political spectrum. The coefficients on being married and being in school are larger for the conservatives. The evidence also suggests that relative income or ''status'' is more important for right-wingers, where the coefficient on Top 2 income quartiles in regression (6) is 64% larger than that in column (3). A jump up into the top half of incomes increases the probability of reporting oneself as ''Very happy'' by 3.4 percentage points for a right-winger compared to 1.8 percentage points for a left-winger. Again this result seems consistent with intuition.

Table 2-US
The determinants of happiness in the US, 1981–1996, left and right

Dep Var: happiness	Left			Right		
	(1)	(2)	(3)	(4)	(5)	(6)
Inequality	− **2.426***	− 1.376	− 1.347	− 3.082	− 2.345	− 2.284
	(1.210)	(1.234)	(1.227)	(1.913)	(2.044)	(2.029)
	− *0.015*	− *0.009*	− *0.008*	− *0.022*	− *0.017*	− *0.016*
Unemployment rate		− **2.945***	− **2.935***		− 2.181	− 2.279
		(1.451)	**(1.450)**		(2.708)	(2.712)
		− *0.013*	− *0.013*		− *0.011*	− *0.012*
Personal characteristics						
Unemployed	− **0.487***	− **0.480***	− **0.476***	− **0.702***	− **0.699***	− **0.691***
	(0.138)	**(0.138)**	**(0.138)**	**(0.228)**	**(0.228)**	**(0.227)**
Self-employed	− 0.003	− 0.004	− 9.4e − 4	**0.151***	**0.151***	**0.157***
	(0.067)	(0.067)	(0.067)	**(0.062)**	**(0.062)**	**(0.063)**
Retired	− 0.039	− 0.038	− 0.032	0.064	0.066	0.072
	(0.070)	(0.070)	(0.071)	(0.101)	(0.102)	(0.101)
School	0.110	0.111	0.114	**0.361***	**0.360***	**0.369***
	(0.161)	(0.161)	(0.161)	**(0.166)**	**(0.166)**	**(0.168)**
Home	− 0.068	− 0.067	− 0.063	0.085	0.086	0.092
	(0.055)	(0.056)	(0.056)	(0.098)	(0.098)	(0.099)
Other	− **0.614***	− **0.612***	− **0.603***	− **0.654***	− **0.653***	− **0.641***
	(0.201)	**(0.201)**	**(0.202)**	**(0.284)**	**(0.284)**	**(0.283)**
Male	− **0.133***	− **0.132***	− **0.133***	− **0.255***	− **0.254***	− **0.257***
	(0.040)	**(0.040)**	**(0.040)**	**(0.049)**	**(0.050)**	**(0.049)**
Age	− **0.028***	− **0.028***	− **0.028***	− **0.040***	− **0.040***	− **0.041***
	(0.009)	**(0.009)**	**(0.009)**	**(0.010)**	**(0.010)**	**(0.010)**
Age squared	**3.9e − 4***	**3.9e − 4***	**3.9e − 4***	**4.7e − 4***	**4.7e − 4***	**4.9e − 4***
	(9.3e − 5)	**(9.3e − 5)**	**(9.3e − 5)**	**(1.0e − 4)**	**(1.0e − 4)**	**(1.1e − 4)**
Education						
College	**0.112***	**0.111***	**0.111***	**0.143***	**0.144***	**0.140***
	(0.051)	**(0.050)**	**(0.051)**	**(0.062)**	**(0.062)**	**(0.062)**
Graduate	**0.197***	**0.196***	**0.198***	**0.184***	**0.184***	**0.184***
	(0.085)	**(0.085)**	**(0.086)**	**(0.078)**	**(0.078)**	**(0.078)**
Marital status						
Married	**0.489***	**0.488***	**0.482***	**0.622***	**0.622***	**0.610***
	(0.063)	**(0.063)**	**(0.064)**	**(0.083)**	**(0.083)**	**(0.084)**
Divorced	− **0.293***	− **0.295***	− **0.294***	− **0.214***	− **0.213***	− **0.214***
	(0.094)	**(0.093)**	**(0.094)**	**(0.080)**	**(0.080)**	**(0.080)**
Separated	− **0.483***	− **0.485***	− **0.484***	− **0.767***	− **0.768***	− **0.768***
	(0.130)	**(0.130)**	**(0.130)**	**(0.174)**	**(0.174)**	**(0.174)**
Widowed	− **0.379***	− **0.378***	− **0.379***	− **0.470***	− **0.468***	− **0.476***
	(0.090)	**(0.090)**	**(0.090)**	**(0.113)**	**(0.113)**	**(0.114)**
Number of children						
1	− **0.176***	− **0.173***	− **0.172***	− **0.163***	− **0.161***	− **0.162***
	(0.050)	**(0.050)**	**(0.050)**	**(0.760)**	**(0.760)**	**(0.760)**
2	− **0.125**	− **0.124**	− **0.124**	− 0.049	− 0.048	− 0.046
	(0.074)	**(0.074)**	**(0.075)**	(0.074)	(0.073)	(0.074)

Table 2-US (*continued*)

Dep Var: happiness	Left			Right		
	(1)	(2)	(3)	(4)	(5)	(6)
Personal characteristics						
>3	− 0.133*	− 0.130*	− 0.129*	− 0.084	− 0.084	− 0.081
	(0.060)	(0.060)	(0.060)	(0.062)	(0.062)	(0.062)
Income	1.0e − 5*	1.0e − 5*	8.6e − 6*	9.1e − 6*	9.1e − 6*	7.2e − 6*
	(1.7e − 6)	(1.7e − 6)	(1.9e − 6)	(8.9e − 7)	(8.9e − 7)	(1.3e − 6)
Top 2 income quartiles:			0.091			0.149*
			(0.080)			(0.078)
Race: Black	− 0.317*	− 0.319*	− 0.320*	− 0.517*	− 0.514	− 0.504*
	(0.050)	(0.050)	(0.050)	(0.176)	(0.175)	(0.176)
Obs.	9,711	9,711	9,711	7,589	7,589	7,589

[1] Ordered logit regressions, include state and year dummies. [2] Boldface is significant at 10% level; starred boldface at 5% level. [3] Standard errors in parentheses. Cut points in Appendix B. The cell in italics below the standard error of the Inequality and Unemployment rate coefficient reports the predicted change in the proportion of people in the top happiness category due to a one standard deviation change in the corresponding explanatory variable (see text for more details). [4] Income is measured at the household level.

In terms of our macro-variables, once the state unemployment rate is included, both groups are negatively affected by inequality but the effects are not significant. The coefficient on inequality for Right Wing respondents, however, is bigger in size (more negative) than that for the subsample of those leaning left. The opposite is true with the effect of state unemployment, as this turns negative and significant at the 4% level for the Left, a result consistent with the "partisan" model of macroeconomics.[17] For the results reported in column 3 of Table 2-US, a one standard deviation increase in the unemployment rate (equal to 0.023) decreases the proportion of people reporting themselves as "Very happy" by 1.3 percentage points and increases the proportion of people reporting themselves as "Not too happy" by 0.7 percentage points.

In Table 3-US, 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. There are again interesting differences between the coefficients on personal characteristics across the two subsamples. Being self-employed has a positive and significant effect on individual happiness only in the rich subsample. The coefficient on *Home*, which is a dummy variable equal to one if the respondent is keeping the home, is negative and significant for the poor and positive and significant for the rich. Perhaps a poor housewife is stressed by the demand of keeping a home, while a rich one can enjoy free time and the help of cleaning services, etc. So for one group staying home means hard work, for the other leisure time. While the poor display a negative statistically significant coefficient on having children, the same coefficient for the rich is smaller and often insignificant. 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. The coefficient on being black is always negative, but it is approximately double in absolute value in the subsample for the Rich. This is a result that resembles the previous one on black conservatives. Finally, consistent with diminishing marginal utility, the effect of

---

[17] See Alesina et al. (1997) on the partisan model of macroeconomic policy.

Table 3-US
The determinants of happiness in the US, 1981–1996, poor and rich

Dep Var: happiness	Poor		Rich	
	(1)	(2)	(3)	(4)
Inequality	− 2.757	− 1.338	**− 2.889***	**− 2.768***
	(1.742)	(1.748)	**(1.339)**	**(1.386)**
	− 0.016	*− 0.008*	*− 0.021*	*− 0.020*
Unemployment rate		**− 4.152***		− 0.334
		(1.925)		(1.715)
		− 0.017		*− 0.002*
Personal characteristics				
Unemployed	**− 0.599***	**− 0.595***	**− 0.577***	**− 0.576***
	(0.111)	**(0.111)**	**(0.214)**	**(0.213)**
Self-employed	− 0.062	− 0.063	**0.153***	**0.153***
	(0.075)	(0.075)	**(0.050)**	**(0.050)**
Retired	− 0.062	− 0.061	0.131	0.131
	(0.074)	(0.075)	(0.119)	(0.120)
School	**0.382***	**0.382***	0.038	0.038
	(0.145)	**(0.145)**	(0.154)	(0.154)
Home	**− 0.135***	**− 0.133***	**0.177***	**0.177***
	(0.060)	**(0.059)**	**(0.077)**	**(0.077)**
Other	**− 0.745***	**− 0.740***	**− 0.459***	**0.459***
	(0.129)	**(0.130)**	**(0.213)**	**(0.213)**
Male	**− 0.233***	**− 0.232***	**− 0.105***	**− 0.105***
	(0.051)	**(0.050)**	**(0.034)**	**(0.034)**
Age	**− 0.034***	**− 0.034***	**− 0.049***	**− 0.049***
	(0.008)	**(0.008)**	**(0.010)**	**(0.010)**
Age squared	**4.5e − 4***	**4.5e − 4***	**5.9e − 4***	**5.9e − 4***
	(8.0e − 5)	**(8.0e − 5)**	**(1.2e − 4)**	**(1.2e − 4)**
Education				
College	**0.147***	**0.146***	**0.111***	**0.111***
	(0.045)	**(0.045)**	**(0.047)**	**(0.060)**
Graduate	**0.254***	**0.251***	**0.136***	**0.136***
	(0.122)	**(0.121)**	**(0.060)**	**(0.047)**
Marital status				
Married	**0.622***	**0.623***	**0.608***	**0.608***
	(0.078)	**(0.078)**	**(0.059)**	**(0.059)**
Divorced	**− 0.218***	**− 0.219***	**− 0.047***	**− 0.047***
	(0.075)	**(0.075)**	**(0.108)**	**(0.108)**
Separated	**− 0.403***	**− 0.405***	**− 0.614***	**− 0.614***
	(0.122)	**(0.122)**	**(0.200)**	**(0.200)**
Widowed	**− 0.315***	**− 0.312***	**− 0.250***	**− 0.250***
	(0.081)	**(0.082)**	**(0.143)**	**(0.143)**
Number of children				
1	**− 0.223***	**− 0.227***	**− 0.144***	**− 0.144***
	(0.057)	**(0.057)**	**(0.058)**	**(0.058)**
2	**− 0.278**	**− 0.277**	− 0.015	− 0.015
	(0.080)	**(0.081)**	(0.065)	(0.065)

Table 3-US (*continued*)

Dep Var: happiness	Poor		Rich	
	(1)	(2)	(3)	(4)
Personal characteristics				
>3	− 0.193*	− 0.191*	− 0.122	− 0.122
	(0.061)	(0.062)	(0.074)	(0.074)
Income	2.3e − 5*	2.3e − 5*	7.1e − 6*	7.1e − 6*
	(3.5e − 6)	(3.5e − 6)	(8.9e − 7)	(8.9e − 7)
Race: black	− 0.265*	− 0.267*	− 0.535*	− 0.536*
	(0.068)	(0.068)	(0.060)	(0.060)
Obs.	9794	9794	10,101	10,101

[1] Ordered logit regressions, include state and year dummies. [2] Boldface denotes significance at the 10% level; starred boldface at the 5% level. [3] Standard errors in parentheses. Cut points in Appendix B. The cell in italics below the standard error of the Inequality and Unemployment rate coefficients reports the predicted change in the proportion of people in the top happiness category due to a one standard deviation change in the corresponding explanatory variable (see text for more details). [4] Income is measured at the household level.

individual income in the poor subsample is significantly larger than the effect of income in the subsample of the rich. Comparing columns (2) and (4), a one standard deviation increase in income increases the probability of poor individuals reporting themselves as "Very happy" by 11.9 percentage points compared to 4.2 percentage points for the rich.

Concerning inequality, we find a striking result, especially if compared with the results for Europe discussed below. The poor are unaffected by inequality, particularly after the state unemployment rate is included. On the contrary, it is the rich who show a significant and negative effect of increased unhappiness with inequality, even after controlling for the unemployment rate. For this group, a one standard deviation increase in inequality is equal to 58% of the effect of leaving self-employment.[18] The poor, on the other hand, are affected by a higher unemployment rate (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, a result, again, which brings support to the partisan model of macroeconomic policy. Using the results for the poor reported in column 2 in Table 3-US, a one standard deviation increase in the unemployment rate decreases the proportion of poor people reporting themselves as "Very happy" by 1.7 percentage points. In summary, the preceding results seem to suggest that there is an overall negative, marginally significant effect of inequality in the US. The effect comes in stronger when the sample is reduced to consider only individuals that are in the top half of the income distribution. There is no effect of inequality on the happiness of the poor or the left-wingers.

4. Happiness and inequality in Europe

Table 1-Eur presents pooled ordered logit regressions for the 12 European countries listed above for all countries and years for which we have happiness data. We have

---

[18] Using the coefficients in column (4) of Table 3-US, this number equals $0.032 \times 2.768/0.153$.

Table 1-Eur
The determinants of happiness across 12 European nations, 1975–1992

Dep Var: happiness	(1)	(2)	(3)	(4)
Inequality		− 2.780	− 3.416*	− 3.370*
		(1.886)	(1.495)	(1.490)
		− 0.021	− 0.025	− 0.025
Unemployment rate			− 0.003	− 0.181
			(1.835)	(1.804)
			− 2.1e − 5	− 0.001
Inflation rate			− 3.054*	− 3.027*
			(1.443)	(1.439)
			− 0.030	− 0.030
Personal characteristics				
Unemployed	− 0.911*	− 0.910*	− 0.912*	− 0.907*
	(0.078)	(0.077)	(0.076)	(0.076)
Self-employed	0.095*	0.102*	0.100*	0.101*
	(0.026)	(0.025)	(0.025)	(0.024)
Retired	0.119*	0.124*	0.122*	0.124*
	(0.052)	(0.051)	(0.051)	(0.051)
School	0.189*	0.191*	0.190*	0.186*
	(0.064)	(0.063)	(0.062)	(0.061)
Home	0.058	0.059	0.055	0.059
	(0.032)	(0.030)	(0.029)	(0.029)
Male	− 0.121*	− 0.122*	− 0.124*	− 0.123*
	(0.059)	(0.059)	(0.059)	(0.059)
Age	− 0.053*	− 0.053*	− 0.053*	− 0.053*
	(0.005)	(0.005)	(0.005)	(0.005)
Age squared	6.0e − 4*	6.0e − 4*	6.0e − 4*	6.0e − 4*
	(4.6e − 5)	(4.6e − 5)	(4.6e − 5)	(4.5e − 5)
Education to age				
15 – 18 years	0.064*	0.066*	0.064*	0.059*
	(0.029)	(0.028)	(0.028)	(0.027)
≥ 19 years	0.165*	0.166*	0.164*	0.159*
	(0.042)	(0.041)	(0.040)	(0.039)
Marital status				
Married	0.285*	0.283*	0.282*	0.279*
	(0.030)	(0.029)	(0.029)	(0.030)
Divorced	− 0.547*	− 0.544*	− 0.540*	− 0.540*
	(0.071)	(0.074)	(0.075)	(0.075)
Separated	− 0.551*	− 0.550*	− 0.548*	− 0.546*
	(0.112)	(0.111)	(0.112)	(0.111)
Widowed	− 0.280*	− 0.282*	− 0.283*	− 0.286*
	(0.058)	(0.057)	(0.059)	(0.056)
Number of children ≥ 8 and 15 years				
1	− 0.031	− 0.030	− 0.031	− 0.033
	(0.034)	(0.034)	(0.033)	(0.033)
2	− 0.059	− 0.058	− 0.057	− 0.058
	(0.048)	(0.047)	(0.048)	(0.047)

Table 1-Eur (*continued*)

Dep Var: happiness	(1)	(2)	(3)	(4)
Personal characteristics				
Number of children ≥ 8 and 15 years				
>3	− 0.210*	− 0.206*	− 0.202*	− 0.204*
	(0.061)	(0.059)	(0.059)	(0.059)
Income	7.1e − 5*	7.1e − 5*	7.2e − 5*	5.8e − 5*
	(4.9e − 6)	(5.0e − 6)	(4.8e − 6)	(8.0e − 6)
Top 2 income quartiles				0.130*
				(0.043)
Obs.	103,773	103,773	103,773	103,773

[1] Ordered logit regressions, include country and year dummies. [2] Boldface denotes significance at the 10% level; starred boldface at the 5% level. [3] Standard errors in parentheses. Cut points in Appendix B. The cell in italics below the standard error of the coefficients of Inequality, Unemployment rate and Inflation reports the predicted change in the proportion of people in the top happiness category due to a one standard deviation change in the corresponding explanatory variable (see text for more details).

inequality data for only a part of this sample, giving us a total of 103,772 observations. All the regressions include country and year dummies.

As for the US results, we first present, in column 1, the results obtained using only individual controls. Comparing column 1 of Table 1-Eur with column 1 of Table 1-US 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 characteristics like age, marital status and unemployment 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. Our results on individual effects are very similar to Di Tella et al. (1997).

In column 2, we add the inequality variable. Although it has a negative sign, the effect is only significant at the 14% level. The coefficient turns larger (more negative) and significant at the 2% level when unemployment and inflation rates are included in column 3 of Table 1-Eur. The coefficients on inflation and unemployment are both negative, but only the one on inflation is significant. This is in contrast with studies of Europe that do not restrict the sample according to data availability for inequality. The main results do not change, when controls for relative income or status effects are included in column 4. To get a feel for the main changes in the data, note that between 1979 and 1982, as well as between 1987 and 1991, inequality fell in Italy whereas happiness rose. In the Netherlands between 1981 and 1985 inequality went up and happiness dropped. The same is true in the United Kingdom between 1980 and 1988. There was also a rise in inequality in Denmark between 1981 and 1987, a period where there also was a decline in happiness.

Using the results in column 3 of Table 1-Eur, 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 2.5 percentage points. A 10 percentage point increase in the Gini decreases the proportion of people reporting themselves as "Very satisfied" by 5.5 percentage points and increases the proportion reporting themselves as "Not very/at all

Table 2-Eur
Happiness across 12 European nations, 1975–1992, left and right

Dep Var: happiness	Left			Right		
	(1)	(2)	(3)	(4)	(5)	(6)
Inequality	**− 7.095***	**− 6.344***	**− 6.178***	− 1.590	− 1.408	− 1.218
	(1.130)	**(1.021)**	**(1.039)**	(2.118)	(1.736)	(1.786)
	− 0.044	*− 0.039*	*− 0.038*	*− 0.015*	*− 0.013*	*− 0.011*
Unemployment rate		2.268	1.846		0.240	− 0.007
		(2.051)	(2.055)		(2.340)	(2.299)
		0.015	*0.012*		*0.002*	*− 6.3e − 5*
Inflation rate		− 1.739	− 1.858		**− 3.250***	**− 3.295***
		(1.634)	(1.672)		**(1.498)**	**(1.503)**
		− 0.015	*− 0.016*		*− 0.040*	*− 0.040*
Personal characteristics						
Unemployed	**− 0.920***	**− 0.924***	**− 0.918***	**− 0.809***	**− 0.811***	**− 0.804***
	(0.069)	**(0.068)**	**(0.069)**	**(0.067)**	**(0.067)**	**(0.067)**
Self-employed	**0.113***	**0.112***	**0.112***	0.009	0.009	0.010
	(0.045)	**(0.046)**	**(0.044)**	(0.039)	(0.039)	(0.040)
Retired	0.056	0.054	0.058	**0.219***	**0.218***	**0.220***
	(0.040)	(0.041)	(0.041)	**(0.086)**	**(0.087)**	**(0.087)**
School	**0.061***	**0.059***	0.054	**0.277***	**0.275***	**0.267***
	(0.070)	**(0.070)**	(0.070)	**(0.076)**	**(0.076)**	**(0.075)**
Home	− 0.015	− 0.018	− 0.012	**0.070***	**0.068***	**0.072***
	(0.054)	(0.053)	(0.055)	**(0.021)**	**(0.021)**	**(0.022)**
Male	− 0.096	− 0.098	− 0.096	**− 0.213***	**− 0.213***	**− 0.213***
	(0.079)	(0.079)	(0.080)	**(0.043)**	**(0.043)**	**(0.044)**
Age	**− 0.058***	**− 0.058***	**− 0.058***	**− 0.048***	**− 0.048***	**− 0.048***
	(0.006)	**(0.006)**	**(0.006)**	**(0.008)**	**(0.008)**	**(0.008)**
Age squared	**6.4e − 4***	**6.4e − 4***	**6.4e − 4***	**5.4e − 4***	**5.4e − 4***	**5.4e − 4***
	(6.1e − 5)	**(6.1e − 5)**	**(6.0e − 5)**	**(7.7e − 5)**	**(7.7e − 5)**	**(7.6e − 5)**
Education to age						
15 – 18 years	0.051	0.046	− 0.001	**0.076***	**0.036***	**0.066***
	(0.034)	(0.034)	(0.035)	**(0.029)**	**(0.029)**	**(0.029)**
≥ 19 years	**0.124***	**0.123***	**0.118***	**0.145***	**0.141***	**0.134***
	(0.047)	**(0.047)**	**(0.047)**	**(0.046)**	**(0.045)**	**(0.044)**
Marital status						
Married	**0.376***	**0.373***	**0.367***	**0.194***	**0.193***	**0.190***
	(0.035)	**(0.035)**	**(0.035)**	**(0.038)**	**(0.039)**	**(0.039)**
Divorced	**− 0.401***	**− 0.400***	**− 0.401***	**− 0.632***	**− 0.624***	**− 0.624***
	(0.093)	**(0.094)**	**(0.092)**	**(0.113)**	**(0.116)**	**(0.117)**
Separated	− 0.156	− 0.160	− 0.157	**− 0.641***	**− 0.636***	**− 0.636***
	(0.167)	(0.168)	(0.166)	**(0.110)**	**(0.112)**	**(0.113)**
Widowed	− 0.116	**− 0.120**	**− 0.124**	**− 0.493***	**− 0.493***	**− 0.495***
	(0.073)	**(0.073)**	**(0.073)**	**(0.061)**	**(0.060)**	**(0.061)**
Number of children ≥ 8 and 15 years						
1	0.031	0.029	0.026	− 0.075	− 0.078	− 0.080
	(0.025)	(0.025)	(0.025)	(0.064)	(0.064)	(0.064)
2	0.006	0.006	0.004	− 0.059	− 0.059	− 0.061
	(0.042)	(0.041)	(0.041)	(0.067)	(0.067)	(0.066)

Table 2-Eur (*continued*)

Dep Var: happiness	Left			Right		
	(1)	(2)	(3)	(4)	(5)	(6)
Personal characteristics						
Number of children ≥ 8 and 15 years						
>3	**− 0.163**	− 0.159	− 0.159	**− 0.193***	**− 0.189***	**− 0.190***
	(0.098)	(0.099)	(0.099)	**(0.052)**	**(0.052)**	**(0.051)**
Income	**6.6e − 5***	**6.7e − 5***	**4.6e − 5***	**6.8e − 5***	**6.9e − 5***	**5.5e − 5***
	(3.8e − 6)	**(3.7e − 6)**	**(7.8e − 6)**	**(5.9e − 6)**	**(5.8e − 6)**	**(8.7e − 6)**
Top 2 income quartiles:			**0.190***			**0.136***
			(0.052)			**(0.062)**
Obs.	29,331	29,331	29,331	23,155	23,155	23,155

[1] Ordered logit regressions, include country and year dummies. [2] Boldface denotes significance at the 10% level; starred boldface at the 5% level. [3] Standard errors in parentheses. Cut points in Appendix B. The cell in italics below the standard error of the coefficients of Inequality, Unemployment rate and Inflation rate report the predicted change in the proportion of people in the top happiness category due to a one standard deviation change in the corresponding explanatory variable (see text for more details).

satisfied" by 5.3 percentage points. Since 26.5% of Europeans reported themselves as "Very satisfied", a 10 percentage point increase in the Gini would correspond to a 20.7% drop (to 21.0%) of people reporting themselves in the top happiness category. Since 19.6% of Europeans reported themselves as "Not very/at all satisfied" it would also correspond to a 27% rise (to 24.9%) of people reporting themselves in the bottom happiness category.

As for the macroeconomic variables, inflation, which varies both across time and across countries in Europe, seems important. 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 3.0 percentage points. A 10 percentage point increase in the inflation rate corresponds to a drop to 21.5% of people reporting themselves in the top happiness category (i.e. 5.0 percentage points less people reporting themselves as "Very satisfied"). The effect of unemployment is negative but insignificant. These results hide different effects across income and ideological groups that we investigate below.

In Table 2-Eur, we break down respondents into left and right. This is done using a question in the Euro-barometer 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. 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 categories 4 from the left and 7 from the right.

Again, the coefficients on individual characteristics provide interesting information. For example, and in direct contrast to what happens in the US, being self-employed increases happiness for the left subsample, but has no effect on the right. Column 1 in Table 2-Eur shows that the left exhibits a strong aversion to inequality, while the coefficient on this

variable for the right-wing respondents is small and insignificant. 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 3.8 percentage points. Since 22.0% of leftist Europeans reported themselves as "Very satisfied", a one standard deviation increase in the Gini corresponds to a drop to 18.2% of left leaning people reporting themselves in the top happiness category. These effects are quite large.

Inflation enters negatively in all regressions, but the size is 1.8 times larger (i.e. more negative) in the equation for the right, where it is also significant at the 3% level. Unemployment is insignificant for both left and right wing groups, in contrast to the findings of studies that use the full sample (i.e. Di Tella and MacCulloch, 1998).

Table 3-Eur 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. The size of the coefficient on inequality in column 3 is less than half than the corresponding coefficient in regression 1 of Table 3-Eur. Using the results in the most general specification in column 2 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 3.7 percentage points. It also increases the proportion of poor people reporting themselves as "Not very/at all satisfied" by 2.2 percentage points. A one standard deviation increase in the Gini corresponds to a drop to 19.4% of the poor reporting themselves in the top happiness category. Since 24.9% of poor Europeans reported themselves as "Not very/at all satisfied" it also corresponds to a rise to 27.1% of the poor reporting themselves in the bottom happiness category. Once again, these effects are large.

One way of looking at size is to compare the effect of inequality on happiness with the size of the effect of other determinants. For instance, based upon the results of column (2) of Table 2-Eur, one can compute that for a European leftist an increase in inequality of one standard deviation of the Gini corresponds to a decrease in income equal to 89% of one standard deviation.[19] It is also equal to 2.4 times the effect of leaving self-employment.[20] For the European poor, a one standard deviation increase in Gini has the same effect as an increase in inflation of 7 percentage points.[21] Alternatively a one standard deviation increase in inequality for the poor is equal in size to 33% of the effect of getting a divorce.[22]

5. Comparing Europe and the United States

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, in contrast, the rich is the only group displaying aversion to inequality. Note that when we

---

[19] This number is calculated from the coefficients in column (2) of Table 2-Eur and equals $0.043 \times 6.344/(6.7e - 5 \times 4570)$.

[20] Using the coefficients in column (2) of Table 2-Eur, this number equals $0.043 \times 6.344/0.112$.

[21] Using the coefficients in column (2) of Table 3-Eur, this number equals $0.043 \times 4.137/2.675$.

[22] Using the coefficients in column (2) of Table 3-Eur, this number is $0.043 \times 4.137/0.537$.

Table 3-Eur
Happiness across 12 European nations, 1975–1992, poor and rich

Dep Var: happiness	Poor		Rich	
	(1)	(2)	(3)	(4)
Inequality	**− 3.528***	**− 4.137***	− 1.736	− 2.398
	(1.744)	**(1.407)**	(2.031)	(1.546)
	− 0.032	*− 0.037*	*− 0.015*	*− 0.020*
Unemployment rate		− 0.495		0.662
		(1.719)		(1.975)
		− 0.004		*0.005*
Inflation rate		**− 2.675***		**− 3.397***
		(1.204)		**(1.702)**
		− 0.033		*− 0.038*
Personal characteristics				
Unemployed	**− 0.895***	− 0.899	**− 0.875***	**− 0.876***
	(0.070)	(0.070)	**(0.108)**	**(0.108)**
Self-employed	0.042	0.041	**0.146***	**0.143***
	(0.063)	(0.063)	**(0.045)**	**(0.044)**
Retired	**0.089***	**0.086***	0.182	0.178
	(0.042)	**(0.041)**	(0.099)	(0.098)
School	**0.163***	**0.164***	**0.208***	**0.204***
	(0.080)	**(0.079)**	**(0.086)**	**(0.085)**
Home	0.007	0.003	**0.142***	**0.140***
	(0.036)	(0.035)	**(0.030)**	**(0.030)**
Male	− 0.103	− 0.104	**− 0.133**	**− 0.136**
	(0.045)	(0.046)	**(0.078)**	**(0.077)**
Age	**− 0.053***	**− 0.053***	**− 0.055***	**− 0.055***
	(0.005)	**(0.005)**	**(0.007)**	**(0.007)**
Age squared	**6.0e − 4***	**6.0e − 4***	**6.2e − 4***	**6.2e − 4***
	(4.1e − 5)	**(4.0e − 5)**	**(6.9e − 5)**	**(6.8e − 5)**
Education to age				
15–18 years	0.008	0.008	0.072	0.068
	(0.020)	(0.021)	(0.050)	(0.050)
≥ 19 years	**0.148***	**0.150***	**0.142***	0.138
	(0.055)	**(0.054)**	**(0.040)**	(0.039)
Marital status				
Married	**0.191***	**0.190***	**0.363***	**0.362***
	(0.048)	**(0.047)**	**(0.039)**	**(0.039)**
Divorced	**− 0.542***	**− 0.537***	**− 0.515***	**− 0.512***
	(0.068)	**(0.069)**	**(0.081)**	**(0.082)**
Separated	**− 0.600***	**− 0.599***	**− 0.419***	**− 0.416***
	(0.098)	**(0.099)**	**(0.141)**	**(0.141)**
Widowed	**− 0.291***	**− 0.291***	**− 0.290***	**− 0.295***
	(0.037)	**(0.037)**	**(0.077)**	**(0.076)**
Number of children ≥ 8 and 15 years				
1	− 0.025	− 0.026	− 0.046	− 0.046
	(0.037)	(0.037)	(0.036)	(0.035)

Table 3-Eur (*continued*)

Dep Var: happiness	Poor		Rich	
	(1)	(2)	(3)	(4)
Personal characteristics				
Number of children ≥ 8 and 15 years				
2	− 0.085	− 0.085	− 0.054	− 0.052
	(0.056)	(0.056)	(0.048)	(0.048)
>3	**− 0.239***	**− 0.238***	**− 0.202***	**− 0.195***
	(0.047)	**(0.047)**	**(0.076)**	**(0.076)**
Income	**1.1e − 4***	**1.1e − 4***	**6.2e − 5***	**6.4e − 5***
	(1.6e − 5)	**(1.6e − 5)**	**(5.3e − 6)**	**(4.6e − 6)**
Obs.	50,995	50,995	52,778	52,778

[1] Ordered logit regressions, include country and year dummies. [2] Boldface denotes significance at the 10% level; starred boldface at the 5% level. [3] Standard errors in parentheses. Cut points in Appendix B. The cell in italics below the standard error of the coefficients of Inequality, Unemployment rate and Inflation rate reports the predicted change in the proportion of people in the top happiness category due to a one standard deviation change in the corresponding explanatory variable (see text for more details).

use other data sets on income distribution at the state level in the US, such as the census measures or the measures of inequality produced by the Economic Policy Institute from gross income data of the CPS, or the data presented in Blank (2001), the effect of inequality on individual happiness for the US is never statistically significant for the full sample or in the subsample of the poor. We focus on the Wu et al. (2002) inequality data since it seems to be particularly accurate for the purposes of our paper, but, again, remember that this is the data set that gives the strongest effect of inequality on happiness in the US. In other words, of all the data sets available we present the results with the strongest effects of inequality on happiness in the US.

Table 4
Comparing the effect of inequality across the US and Europe, 1981–1996

Dep Var: happiness	All	Left	Right	Poor	Rich
	(1)	(2)	(3)	(4)	(5)
US					
Inequality	**− 0.014**	− 0.009	− 0.017	− 0.008	**− 0.020***
Observations	19,895	9,711	7,589	9,794	10,101
Europe					
Inequality	**− 0.025***	**− 0.039***	− 0.013	**− 0.037***	**− 0.020**
Observations	0.285	0.001	0.763	0.100	0.914
Different to US?	103,773	29,331	23,155	50,995	52,778

[1] Boldface denotes significance at the 10% level; starred boldface at the 5% level. [2] The numbers originate in regression (3) in Tables 1-US and 1-Eur, regressions (2) and (5) in Tables 2-US and 2-Eur, and regressions (2) and (4) in Tables 3-US and 3-Eur. They represent the predicted change in the proportion of people in the top happiness category due to a one standard deviation change in inequality (see text for more details). [3] The "Different to US?" row reports the significance level of the difference between the two inequality regression coefficients (Europe−US) obtained from a combined sample of Europeans and Americans.

We summarize the differences on the effect of inequality in Europe and the US, in Table 4. The entries of this table represent the predicted change in the proportion of people in the top happiness category due to a one standard deviation change in inequality. They are obtained from column 3 of Tables 1-US and 1-Eur, columns 2 and 5 of Tables 2-US and 2-Eur and columns 2 and 4 of Tables 3-US and 3-Eur. The last line of Table 4, labeled "Different to US?" shows the statistical significance of the test that the regression coefficients on inequality (from which the numbers in each column are derived) are different in Europe. The empirical procedure for doing this, which is outlined in Section 2.3, consists of pooling the European and US data sets and then testing for whether the change in the coefficient on Inequality when an individual is from Europe compared to the US, $\alpha^{EUR} - \alpha^{US}$, is significant.

Column 1 shows that the effect of inequality in the entire sample is larger in absolute value and more statistically significant for Europe than for the US. Even though the test on the statistical difference between the two coefficients is only valid at the 28%, the magnitude of the European effect is almost twice as large and more precisely estimated.

The following four columns show that while in Europe it is the leftists and the poor who dislike inequality, in the US it is only the rich. Probably the most striking result of all is the complete lack of any effect of inequality on the happiness of the American poor and the American left. There are differences within groups across continents. For example, the left-wingers in Europe are more adversely affected by inequality than the American left-wingers. The European poor are more negatively affected by inequality than the American poor. The size of the effects is quite different, although the difference is weak statistically (it is only significant at the 10% level). The coefficients on the rich in the US and Europe have approximately the same value, but it is insignificantly different from zero in Europe and well defined in the US. In summary, it is the European poor and leftists who drive the strong negative effects of inequality on happiness in the European sample, and it is the rich who seem to be playing the main role in driving the weaker effect of inequality on happiness in the US sample.

There are two potential explanations for our finding that Europeans dislike inequality, while the effect on Americans is weaker. The first one involves taste: in Europe there may be higher preferences for equality. That is, equality enters the utility function of Europeans with higher weights than in the utility function of Americans. In fact, Thurow (1971) argues that the taste for equality increases with income, an observation consistent with the fact that the share of government transfers over GDP is higher in richer countries. The rich in the US then should like equality, precisely because of this luxury good argument. However, this interpretation is not consistent with our results for Europe, where the rich do not seem to be bothered by inequality while the poor are.[23]

A more plausible interpretation is in terms of differences in perceived social mobility, rather than relying solely on "taste for equality". If Americans perceive their country as a more mobile society than Europe, where people have opportunities to move up (or down), present day inequality levels may have little influence on individual utility. In other words, relative to their European counterparts, the American rich feel that they

---

[23] In fact, following the logic of this argument, it is enough that equality is a normal good to make our result for Europe not compatible with a "taste" interpretation.

have higher chance of moving down in the income ladder; conversely, the European poor feel that their chances of moving up the income ladder are lower than in the US. This argument leads us to expect that the American rich, if anything, would be more adversely affected by inequality, as they expect their incomes to fall. The effect is more precisely estimated in US than in Europe, but the size of the effects is not statistically different. One possible explanation is that upward and downward mobility are perceived to be different. Overall, these findings are supported by the vast analysis of poll data by Ladd and Bowman (1998). They find that Americans are willing to tolerate quite large disparities in wealth as long as they perceive that wealth is the result of effort and that everybody can make it if enough effort and talent is devoted to the task. Obviously, not everybody believes that opportunities are truly equal for everybody, but polls show that the more people perceive that there are reasonable opportunities for everybody, the more tolerance there is for inequality.

Note that what matters for this potential explanation to hold is that perceived rather than actual mobility is different. According to the World Values Survey, 71% of Americans believe that the poor have a chance of escaping from poverty. In Europe that number is 40%.[24] Whether or not this perception of higher social mobility in the US is correct or not is irrelevant for our purposes here since we are dealing with people's views, so their perception is what matters. The debate on comparing actual mobility across countries is very important and intriguing, but we do not have anything to add on this point in the present paper. Suffice it to say that data problems make conclusive tests of this hypothesis concerning social mobility on the two sides of the Atlantic almost impossible, as noted by Atkinson et al. (1992).

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 creates a vicious circle of welfare addiction of the poor. Do these differences of opinion simply reflect different preferences about the merits of equality in 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?

We use 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, individuals tend to declare lower happiness levels when inequality happens to be high. The effect in America seems to be less precisely estimated than in Europe, although the overall difference is not statistically significant. We then

---

[24] The same numbers are reported in Alesina et al. (2001).

investigate differences across income and ideological groups. We find that the rich and the right-wingers in Europe are largely unaffected by inequality. Instead, we identify strong negative effects of inequality on the happiness of the European poor and leftists. In the US, the poor and the left-wingers are not affected by inequality, whereas the effect on the rich is negative and well defined. Comparing these groups across continents, we find that the European left is more affected by inequality than the American left. The difference appears to be large in size and very well defined statistically. There are no differences across the American right and the European right. In terms of income groups, there are no differences between the American rich and the European rich in terms of how inequality affects their reported happiness levels. The poor in Europe, however, are more affected by inequality than the American poor. The difference is very large in terms of size, although only statistically significant at the 10% level.

This suggests that European aversion to inequality does not originate in different preferences in the US and Europe. Suppose that "equality" is a luxury good, the demand for which rises with income more than proportionally, or even a normal good. Then we should find that the European rich dislike inequality more than the European poor, like in the US. A more reasonable interpretation is that opportunities for mobility are (or are perceived to be) higher in the US than in Europe.

Acknowledgements

Appendix A. Description of the data and the surveys

A.1. 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 Euro-barometer 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 bottom categories ("not very satisfied" and "not at all 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 Euro-barometer 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.

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 US state. From "Crime in the US", various years, FBI, Washington, Government Printing Office.

Inequality: for the US, Gini coefficients per state calculated from net income data, obtained by combining US Current Population Survey data and tax simulations by Wu et al. (2002). For Europe, the Gini coefficients are obtained from the Deininger and Squire (1996) World Bank "high quality" data set.

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.

Income: for the United States, calculated as real income in 1995 constant dollars. Nominal income data are taken from General Social Survey questions which ask respondents where did their "total family income, from all sources, fall last year before taxes?" We take the midpoints of the corresponding categories which are, for example, "Under $1000; $1000 to 2999; $3000 to 3999; $4000 to 4999; $5000 to 5999; $6000 to 6999; $7000 to 7999; $8000 to 9999; $10,000 to 12,499; $12,500 to 14,999; $15,000 to 17,499; $17,500 to 19,999; $20,000 to 22,499; $22,500 to 24,999; $25,000 to 29,999; $30,000 to 34,999; $35,000 to 39,999; $40,000 to 49,999; $50,000 to 59,999; $60,000 to 74,999; $75,000 or over; Refused; Don't know; No answer". For Europe, calculated using real income in 1995 constant dollars approximated using data on individual income quartiles and the standard deviation of income. The latter is calculated as $\sigma = \log(Y_{90}/Y_{10})/3.28$ assuming a lognormal distribution for income where Y_{90}/Y_{10} is the 90/10 ratio from the Luxembourg Income Study. Using the midpoints of the four income quartiles, average income for individuals in the first, second, third and fourth quartiles equals $\log \bar{Y} - 1.15\sigma$, $\log \bar{Y} - 0.32\sigma$, $\log \bar{Y} + 0.32\sigma$, $\log \bar{Y} + 1.15\sigma$, where $\bar{Y}$ is mean income per capita.

A.2. Surveys

A.2.1. The United States general social survey (1972–1996)

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 32,380 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).

A.2.2. 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, 24,764 for Britain, 4054 for Denmark, 4346 for France, 5708 for West Germany, 2652 for Greece, 1812 for Ireland, 24,189 for Italy, 494 for Luxembourg, 20,255 for The Netherlands, 2380 for Portugal and 8126 for Spain.

Appendix B. Cut points

Table 1-US: cut points (standard errors) are − 2.76 (0.14), 0.3 (0.15) for regression (1); − 3.83 (0.49), − 0.77 (0.50) for regression (2); − 3.71 (0.47), − 0.64 (0.48) for regression (3); − 3.70 (0.47), − 0.63 (0.48) for regression (4).

Table 2-US: cut points (standard errors) are − 3.3 (0.5), 0.3 (0.5) for regression (1); − 3.16 (0.47), − 0.13 (0.47) for regression (2); − 3.15 (0.47), − 0.12 (0.47) for regression (3); − 3.70 (0.47), − 0.63 (0.48) for regression (4); − 4.09 (0.74), − 0.89 (0.74) for regression (5); − 4.10 (0.74), − 0.89 (0.74) for regression (6).

Table 3-US: cut points (standard errors) are − 3.44 (0.7), − 0.5 (0.71) for regression (1); − 3.24 (0.68), − 0.29 (0.69) for regression (2); − 4.25 (0.54), − 0.95 (0.54) for regression (3); − 4.24 (0.53), − 0.96 (0.53) for regression (4).

Table 4-US: cut points (standard errors) are − 3.80 (0.45), − 0.73 (0.46) for regression (1); − 3.40 (0.51), − 0.36 (0.51) for regression (2); − 4.17 (0.78), − 0.96 (0.78) for regression (3); − 3.26 (0.69), − 0.31 (0.69) for regression (4); − 4.23 (0.60), − 0.94 (0.61) for regression (5).

Table 1-Eur: cut points (standard errors) are − 0.86 (0.20), 1.95 (0.19) for regression (1); − 1.92 (0.82), 0.89 (0.82) for regression (2); − 2.23 (0.70), 0.58 (0.68) for regression (3); − 2.36 (0.71), 0.45 (0.69) for regression (4).

Table 2-Eur: cut points (standard errors) are − 3.3 (0.49), − 0.48 (0.43) for regression (1); − 2.85 (0.59), − 0.03 (0.51) for regression (2); − 3.05 (0.61), − 0.23 (0.54) for

regression (3); − 1.47 (0.9), − 0.10 (0.69) for regression (4); − 1.54 (0.96), 1.28 (0.98) for regression (5); − 1.63 (0.99), 1.19 (1.0) for regression (6).

Table 3-Eur: cut points (standard errors) are − 1.96 (0.79), 0.68 (0.77) for regression (1); − 2.31 (0.70), 0.33 (0.68) for regression (2); − 1.67 (0.92), 1.33 (0.92) for regression (3); − 1.89 (0.73), 1.12 (0.70) for regression (4).

Appendix C. Controlling for crime in the US

Table 4-US
The determinants of happiness in the US, 1981–1996, with crime

Dep Var: happiness	All	Left	Right	Poor	Rich
	(1)	(2)	(3)	(4)	(5)
Inequality	− 2.077	− 1.345	− 2.282	− 1.268	− 2.776*
	(1.147)	(1.198)	(2.065)	(1.1734)	(1.393)
Unemployment rate	− 2.516	− 3.170*	− 2.608	− 4.730*	− 0.281
	(1.472)	(1.617)	(2.888)	(1.957)	(1.824)
Murder	− 0.009	− 0.016	− 0.007	− 0.023	0.002
	(0.156)	(0.018)	(0.027)	(0.017)	(0.021)
Auto-theft	1.4e − 5	− 9.6e − 5	2.1e − 4	8.5e − 5	− 2.3e − 4
	(1.6e − 4)	(2.2e − 4)	(2.5e − 4)	(2.6e − 4)	(1.9e − 4)
Personal characteristics					
Unemployed	− 0.623*	− 0.476*	− 0.691*	− 0.594*	− 0.576*
	(0.105)	(0.138)	(0.227)	(0.111)	(0.213)
Self-employed	0.055	− 4.0e − 4	0.157*	− 0.063	0.153*
	(0.039)	(0.067)	(0.063)	(0.075)	(0.050)
Retired	0.021	− 0.032	0.070	− 0.061	0.131
	(0.056)	(0.071)	(0.103)	(0.075)	(0.119)
School	0.224	0.116	0.367*	0.386*	0.377*
	(0.135)	(0.162)	(0.168)	(0.145)	(0.154)
Home	− 0.030	− 0.061	0.091	− 0.132*	0.178*
	(0.048)	(0.056)	(0.099)	(0.060)	(0.077)
Other	− 0.547*	− 0.604*	− 0.643*	− 0.742*	0.458*
	(0.107)	(0.201)	(0.283)	(0.130)	(0.212)
Male	− 0.164*	− 0.133*	− 0.256*	− 0.232*	− 0.105*
	(0.030)	(0.040)	(0.049)	(0.051)	(0.034)
Age	− 0.038*	− 0.028*	− 0.041*	− 0.034*	− 0.049*
	(0.007)	(0.009)	(0.010)	(0.008)	(0.010)
Age squared	4.8e − 4*	4.0e − 4*	4.9e − 4*	4.5e − 4*	5.9e − 4*
	(7.5e − 5)	(9.3e − 5)	(1.1e − 5)	(8.0e − 5)	(1.2e − 4)
Education					
College	0.143*	0.112*	0.140*	0.146*	0.111*
	(0.031)	(0.051)	(0.062)	(0.045)	(0.047)
Graduate	0.173*	0.198*	0.183*	0.249*	0.136*
	(0.056)	(0.086)	(0.079)	(0.121)	(0.061)

Table 4-US (*continued*)

Dep Var: happiness	All	Left	Right	Poor	Rich
	(1)	(2)	(3)	(4)	(5)
Personal characteristics					
Married	**0.620***	**0.482***	**0.611***	**0.622***	**0.608***
	(0.049)	**(0.064)**	**(0.084)**	**(0.078)**	**(0.059)**
Divorced	**− 0.176***	**− 0.295***	**− 0.215***	**− 0.220***	− 0.047
	(0.073)	**(0.094)**	**(0.079)**	**(0.074)**	(0.108)
Separated	**− 0.487***	**− 0.488***	**− 0.768***	**− 0.407***	**− 0.614***
	(0.105)	**(0.130)**	**(0.174)**	**(0.122)**	**(0.200)**
Widowed	**− 0.349***	**− 0.380***	**− 0.474***	**− 0.313***	− 0.250
	(0.078)	**(0.090)**	**(0.114)**	**(0.081)**	**(0.142)**
Number of children					
1	**− 0.182***	**− 0.173***	**− 0.162***	**− 0.228***	**− 0.144***
	(0.035)	**(0.050)**	**(0.075)**	**(0.057)**	**(0.058)**
2	**− 0.138***	− 0.123	− 0.046	**− 0.277***	− 0.015
	(0.044)	(0.074)	(0.073)	**(0.080)**	(0.646)
>3	**− 0.161***	**− 0.130***	− 0.081	**− 0.191***	− 0.121
	(0.049)	**(0.060)**	(0.062)	**(0.062)**	**(0.074)**
Income	**8.3e − 6***	**8.6e − 6***	**7.2e − 6***	**2.3e − 5***	**7.1e − 6***
	(9.7e − 7)	**(1.9e − 6)**	**(1.3e − 6)**	**(3.5e − 6)**	**(8.9e − 7)**
Top 2 income quartiles	**0.116***	0.091	**0.148**		
	(0.056)	(0.081)	**(0.078)**		
Race: black	**− 0.393***	**− 0.319***	**− 0.503***	**− 0.267***	**− 0.536***
	(0.048)	**(0.050)**	**(0.176)**	**(0.068)**	**(0.060)**
Obs.	19,895	9711	7589	9794	10,101

[1] Ordered logit regressions, include state and year dummies. [2] Boldface denotes significance at the 10% level; starred boldface at the 5% level. [3] Standard errors in parentheses. Cut points in Appendix B.

References

Agurzky, B., Schmidt, C., 2001. The evaluation of community-based interventions: a Monte Carlo study, IZA DP No. 270.

Alesina, A., La Ferrara, E., 2000. Preferences for redistribution in the land of opportunity, unpublished.

Alesina, A., Roubini, N., Cohen, G., 1997. Political Cycles and the Macroeconomy. MIT Press.

Alesina, A., Glaeser, E., Sacerdote, B., 2001. Why doesn't the United States have a European-style welfare state? Brookings papers on Economic Activity, 187–277 (Fall).

Angrist, J., Lavy, V., 2002. Achievement awards for high school matriculation: research methods and preliminary findings, MIT mimeo.

Atkinson, A., Brandolini, A., 1999. Promise and pitfalls in the use of 'secondary' data-sets: income inequality in OECD countries, Nuffield College Working Paper, Oxford.

Atkinson, A., Bourguignon, F., Morrison, C., 1992. Empirical Studies of Income Mobility. Harwood Academic Publishers, London.

Benabou, R., Ok, E., 2001. Social mobility and the demand for redistribution. The Quarterly Journal of Economics (in press).

Bertrand, M., Duflo, E., Mullainathan, S., 2001. How much should we trust differences-in-differences estimates? MIT Department of Economics, mimeo.

Bjorklund, A., Janiti, M., 1997. Intergenerational income mobility in Sweden compared to the United States. American Economic Review, 1009–1018 (December).

Blanchflower, D., Oswald, A., 1998. What makes an entrepreneur? Journal of Labor Economics 16, 26–60.

Blanchflower, D., Oswald, A., 2000. Well-being over time in Britain and the USA, mimeo.

Blank, R., 2001. What causes public assistance caseloads to grow? Journal of Human Resources 36 (1), 85–118.

Boeri, T., Borsch-Supan, A., Tabellini, G., 2000. Would you like to shrink the welfare state? A survey of European citizens. Economic Policy 32, 7–50.

Bradburn, N., 1969. The Structure of Psychological Well-Being. Aldine Publishing, Chicago.

Braun, T., Feng, Z., 2001. Optimal permutation tests for the analysis of group randomized trials. JASA 96, 1424–1432.

Checchi, D., Ichino, A., Rustichini, A., 1999. More equal but less mobile? Education financing and intergenerational mobility in Italy and the US. Journal of Public Economics 74, 351–393.

Clark, A., Oswald, A., 1994. Unhappiness and unemployment. Economic Journal 104, 648–659.

Corneo, G., 2000. Inequality and the state: comparing US and German preferences, unpublished.

Corneo, G., Gruner, H.P., 2000. Individual preferences for political redistribution, unpublished.

Davis, J.A., Smith, T.W., 1994. General Social Surveys, 1972–1994, Machine-readable data file, Chicago: National Opinion Research Center (producer), Storrs, CT: The Roper Center for Public Opinion Research (distributor).

Deininger, K., Squire, L., 1996. A new data set measuring income inequality. World Bank Economic Review 10 (3), 565–591 (September).

Diener, E., 1984. Subjective well-being. Psychological Bulletin 93, 542–575.

Diener, E., Suh, E., Lucas, R., Smith, H., 1999. Subjective well-being: three decades of progress. Psychological Bulletin 125 (2), 276–303.

Di Tella, R., MacCulloch, R., 1996. An empirical study of unemployment benefit preferences, Discussion paper 179, IES, Oxford University.

Di Tella, R., MacCulloch, R., 1998. Partisan social happiness, mimeo.

Di Tella, R., MacCulloch, R., Oswald, A., 1997. The macroeconomics of happiness, CEP working paper 19.

Di Tella, R., MacCulloch, R., Oswald, A., 2001. Preferences over inflation and unemployment: evidence form surveys of happiness. The American Economic Review 91 (1), 335–341.

Easterlin, R., 1974. Does economic growth improve the human lot? Some empirical evidence. In: David, P., Reder, M. (Eds.), Nations and Households in Economic Growth: Essays in Honour of Moses Abramovitz. Academic Press, New York.

Ekman, P., Davidson, R., Friesen, W., 1990. The Duchenne smile: emotional expression and Brain Physiology II. Journal of Personality and Social Psychology 58, 342–353.

Frey, B., Stutzer, A., 1999. Happiness, economy and institutions, mimeo.

Fordyce, M., 1988. A review of research on happiness measures: a sixty second index of happiness and mental health. Social Indicators Research 20, 355–381.

Granato, J., Inglehart, R., Leblang, D., 1996. Cultural values, stable democracy and economic development: reply. American Journal of Political Science 40 (3), 680–696.

Inglehart, R., 1990. Culture Shift. Chicago Univ. Press, Chicago.

Inglehart, R., 1996. The diminishing utility of economic growth: from maximizing security toward maximizing subjective well-being. Critical Review 10 (4), 509–531.

Inglehart, R., Reif, K., Melich, A., 1994. European Communities Studies, 1970–92: Cumulative File, 3rd ICPSR version, Ann Arbor, MI.

Kahneman, D., Thaler, R., 1991. Economic analysis and the psychology of utility: applications to compensation policy. American Economic Review 81 (2), 341–346.

Kahneman, D., Wakker, P.P., Sarin, R., 1997. Back to Bentham? Explorations of experienced utility. Quarterly Journal of Economics 112, 357–406.

Kahneman, D., Diener, E., Schwartz, N. (Eds.), 1999. Well-Being: The Foundations of Hedonic Psychology. Russell Sage Foundation, New York.

Konow, J., Earley, J., 1999. The hedonistic paradox: is homo-economicus happier? mimeo.

Ladd, E.C., Bowman, K., 1998. Attitudes Toward Economic Inequality. AEI Press, Washington, DC.

Liang, K.-Y., Zeger, S., 1986. Longitudinal Data Analysis Using Generalized Linear Models. Biometrica 73, 13–22.

Meltzer, A., Richards, S., 1981. A rational theory of the size of government. Journal of Political Economy 89, 914–927.

Morawetz, D., et al., 1977. Income distribution and self-rated happiness: some empirical evidence. Economic Journal 87, 511–522.

Moulton, B., 1986. Random groups effects and the precision of regression estimates. Journal of Econometrics 32, 385–397.

Ng, Y.-K., 1996. Happiness surveys: some comparability issues and an exploratory survey based on just perceivable increments. Social Indicators Research 38, 127.

Pavot, W., 1991. Further validation of the satisfaction with life scale: evidence for the convergence of well-being measures. Journal of Personality Assessment 57, 149–161.

Piketty, T., 1995. Social mobility and redistributive politics. The Quarterly Journal of Economics 110, 551–584.

Ravallion, M., Lokshin, M., 2000. Who wants to redistribute? The tunnel effect in 1990 Russia. Journal of Public Economics 76, 87–104.

Romer, T., 1975. Individual Welfare, Majority Voting and the Properties of a Linear Income Tax. Journal of Public Economics 4 (2), 163–185.

Rorer, L., 1965. The great response-style myth. Psychological Bulletin 63, 129–156.

Sandvik, E., Diener, E., Seidlitz, L., 1993. Subjective well-being: the convergence and stability of self and non self report measures. Journal of Personality 61–63, 317–342.

Shedler, J., Mayman, M., Manis, M., 1993. The illusion of mental health. American Psychologist 48 (11), 1117.

Siedlitz, L., Wyer, R., Diener, E., 1997. Cognitive correlates of subjective well-being: the processing of valenced events by happy and unhappy persons. Journal of Research in Personality 31 (1), 240–256.

Stutzer, A., Frey, B., 2003. Does marriage make people happy, or do happy people get married? Institute for Empirical Research in Economics, University of Zurich Working Paper Series, ISSN 1424-0459, No. 143.

Stutzer, A., Lalive, R., 2000. The role of social norms in job searching and subjective well-being, mimeo.

Sutton, S., Davidson, R., 1997. Prefrontal brain symmetry: a biological substrate of the behavioral approach and inhibition systems. Psychological Science 8 (3), 204–210.

Tanzi, V., Schuknecht, L., 2000. Public Spending in the 20th Century. Cambridge Univ. Press, Cambridge, UK.

Thornquist, M., Anderson, G., 1992. Small-sample properties of generalized estimating equations in group-randomized designs with Gaussian response, Fred Hutchinson Cancer Research Center, Technical Report.

Thurow, L., 1971. The income distribution as a pure public good. Quarterly Journal of Economics 83, 327.

Tinbergen, J., 1991. On the measurement of welfare. Journal of Econometrics 50 (7), 7–13.

van Praag, B., 1991. Ordinal and cardinal utility. Journal of Econometrics 50 (7), 69–89.

Winkelmann, L., Winkelmann, R., 1998. Why are the unemployed so unhappy? Evidence from panel data. Economica 65 (257), 1–15.

Wolfers, J., 2002. Is business cycle volatility costly? Evidence from surveys of subjective wellbeing, Stanford Business School Research Paper No. 1751.

Wu, X., Perloff, J., Golan, A., 2002. Effects of government policies on income distribution and welfare, UC Berkeley working paper, iirwps-086-02.