Happiness, Habits and High Rank:
Comparisons in Economic and Social Life

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Abstract

Money doesn't seem to make us happy for reasons of social comparison and habituation. But does that necessarily mean that we would be better off doing something else instead? This paper suggests that the phenomena of comparison and habituation are actually found in a variety of economic and social activities, rendering policy conclusions more difficult.

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1. Introduction

Subjective well-being has arguably been moving into the mainstream in Economics over the past ten years. One measure of the success of this insertion is the number of published articles in the domain. An ECONLIT search for journal articles with either 'Happiness', 'Life Satisfaction', 'Well-being' or 'Job Satisfaction' in the title, identifies 614 published articles between 1960 and 2006.[1] Of these 363 (59%) have been published since 2000. We have thus moved from a period pre-2000 where one "well-being" article (by this count) was published every two months to a new regime where more than one is published every week.

A number of these papers have addressed policy issues. Sometimes these concerned fairly specific problems, such as the rationality of smokers' choices (Gruber and Mullainathan, 2006) or the compensating differential for aircraft noise (Van Praag and Baarsma, 2005). A separate literature has broadly asked the question "What makes a good life"?. Contributions along these lines include Di Tella and MacCulloch (2006), Layard (2005), and Kahneman *et al*. (2004). In particular, a very lively literature has grown up around the vexed relationship between income and well-being. If, as Easterlin (1974), and many others since, claim, rising national income doesn't seem to have produced rising national happiness, then surely our energies would be better diverted away from ever increasing GNP towards something else instead?

This paper aims to contribute to this policy debate. It does so by first briefly recalling the principal results concerning income and well-being, concluding that social comparisons (I compare my income to yours) and habituation (I fairly quickly get used to any higher income) do seem indeed to be prevalent in the income-happiness relationship. These results are by now reasonably well-known. The novelty of this paper is then to summarise the far smaller literature that has looked for social comparison and habituation effects with respect to other facets of economic and social life.

The reason for doing so is that the policy debate has developed in a surprisingly lop-sided

[1] This is of course an undercount, since many relevant papers do not included these keywords in their title. However, this will not necessarily bias the pre-/post-2000 comparison.

way. A lot of useful and careful work has gone into providing evidence that money may not, ate least in the long-run, produce much extra well-being, for the comparison and habituation reasons noted above. The policy conclusion that we should stop trying to get richer and do something else instead is based on the hypothesis that the same phenomena of comparison and habituation will not be found in the "something else" as well. This is precisely the issue that the current paper addresses.

The paper is organised as follows. Section 2 presents evidence of social comparisons and adaptation with respect to income; Section 3 does the same thing with respect to unemployment, marriage, social capital and religion. Section 4 concludes.

2. Income and Happiness

The crux of what is by now a fairly well-known problem is illustrated in Figures 1 to 3. The first figure plots average happiness scores within a country against GNP per head, as well as a quadratic relationship that represents the best fit between the two variables. The central message of this figure is that money does seem to buy happiness, but only up to a certain point. In particular, richer countries look like they are on a flat portion of this curve. The cross-section macro evidence thus suggests that increasing GNP per head will not render individuals any happier.

This message is repeated in Figures 2 and 3, which show time-series relationships between income and happiness within countries, as in the original paper by Easterlin (1974). The first shows the data for the US between 1973 and 2004. The sharp growth in real income per capita is not mirrored in happiness. This non-relationship seems to be typical of (rich) OECD countries: Easterlin (1995) draws the same figure for Japan, and Figure 3 shows time-series trends in life satisfaction and income for five European countries from 1973 onwards. Again, there is no obvious relationship between the two variables.[2]

Figures 1 through 3 suggest that greater income does not bring about greater happiness, at least in rich countries. One implication would then be that we should stop putting resources into increasing GNP, and divert our attention to something more worthwhile (in happiness terms) instead.

A first criticism of the approach summarised in the above Figures is that subjective

[2] All of the analysis discussed in this paper concerns relatively rich countries. There is no doubt that increasing income leads to better outcomes in many countries. Clark *et al*. (2006) draw a similar picture to Figures 2 and 3 for East Germany between 1991 and 2002, and find that both income and life satisfaction increased considerably over this period.

measures of well-being such as life satisfaction or happiness are mostly noise, and should not be used to draw inferences about utility levels between individuals. One arguably powerful reply to this criticism comes from showing that individuals' current reported well-being is correlated with their future behaviour: satisfaction is a powerful predictor variable, even when a wide variety of other controls are introduced. An early example is Freeman (1978), which showed that current job satisfaction is a better predictor of future quits than are current wages. More generally, satisfaction scores have been shown to predict: life expectancy, morbidity, productivity, quits, absenteeism, unemployment duration, and marriage duration. In this case, subjective well-being must be comparable to some extent across individuals. If each individual answered idiosyncratically, we would not be able to predict the distribution of future behaviours across individuals. This literature, together with other work on the validity of subjective measures (cross-rater validity, and physiological and neurological evidence) is surveyed in Clark *et al*. (2006).

There are two main parts to this paper. I first try to evaluate whether an increase in income, Y, really has no effect on subjective well-being. A number of different authors have carried out work in this area, producing a broadly consistent set of results. The second part of the paper will be devoted to identifying variables that really do bring about higher well-being. Here the work is far more scattered, and far more work needs to be carried out before any consensus can be reached.

Both parts of the paper appeal to "micro-data" - data on individuals – whereas Figures 1 through 3 were based on country "macro" averages. The former is likely preferable for a number of different reasons:

1) Well-being scores are ordinal, and so can't really be averaged.

2) Language/cultural differences (what's "happy" in French?).

3) There may well be other differences between countries that are correlated with satisfaction. This is a standard omitted variable argument: if something is positively correlated with income but negatively correlated with subjective well-being, then the bivariate correlation between income and well-being will be biased towards zero. This is the case for hours of work or pollution, to give two examples.

4) There are only so many countries, so macro analysis will necessarily always concern rely on relatively small datasets.

Income Comparisons

The key idea that will be developed in this paper is that individual Well-being may very well depend on the "relative" level of many important variables, as well as their absolute level. These relative levels might either be defined with respect to other people, or with respect to oneself in the past.

It is easy to think of examples of comparisons between people with respect to certain consumption goods. Indeed, it often seems as if advertising is explicitly inviting us to get one over others by purchasing the latest model of car, jeans or razors.[3] Consider the case of two neighbours, A and B, who both like cars. We can write their welfare functions as depending on the car that they themselves drive.

$W_A = W(Car_A,.....)$
$W_B = W(Car_B,.....)$

The key question in terms of social comparisons is whether B's purchase of a new car in any way affects A's well-being and A's likelihood of buying a new car? The answer is standard economic theory is "no" to both questions. But if we believe that relative standing matters, it is easy to see that B's new car may well leave A feeling relatively deprived, to which her response will be to invest in some shiny new machinery herself.[4] If A does indeed compare to B, then we can write her welfare function (with respect to cars) as $W_A = W(Car_A/Car_B,....)$. The first element in W_A shows how good A's car is relative to her neighbour's.

There are now a fair number of papers which have addressed the relationship between Income and Subjective Well-Being (SWB) in exactly the same context as that of the car example above. Broadly, the choice is between two welfare or utility functions:

The Standard model:	$W = W(Y, ...)$
Comparisons or Relative Utility:	$W = W(Y/Y^*, ...)$

The variable Y* here is often called "comparison income": it is the income to which the individual compares, and is often otherwise called reference group income. In the second of the

[3] Television advertising during football matches seems to be particularly prone to these kind of appeals.
[4] A will follow B's behaviour as long as the comparison part of her utility function is concave. If it is linear, then she will not change her behaviour, and if it is convex, she will do the opposite to B. In all three cases, however, her utility is negatively affected by B's new car. See Clark and Oswald (1998).

equations above, Y and Y* have been entered in ratio form. In much of the empirical research, Y and Y * are entered separately as right-hand side variables, either in levels or in logs. The general idea is similar across all of the empirical work: if relative income is important, then we expect dW/dY * to be negative – my utility falls as those in my reference group earn more.

The research in this field has used econometric techniques applied to large-scale micro data to model the relationship between some measure of individual well-being and income, both own and that of the reference group. Data are most often from one country only, but sometimes from many different countries. The adjective "large-scale" here means anything between a few thousand and half a million or more. The regression analysis typically includes many other control variables (such as labour force status, marital status, education and health). The aim is to look at the *ceteris paribus* (all else held constant) relationship between W, Y and Y*.[5]

To carry out such estimations, we need information on two variables that are arguably only imperfectly measured. The first is the dependent variable, subjective well-being. As argued above, there is now quite a large literature which seems to push in the general direction that respondents' answers to questions on job or life satisfaction, happiness or general psychological functioning contains useful information that may help us to understand the structure of the individual utility function.

Second, we need a measure of Y*. We thus come back to an old question: Who's in the reference group? Some likely candidates are:

* The peer group (people who are like me)
* Others in the same household
* My spouse or partner
* Myself in the past
* Friends
* Neighbours
* Work colleagues
* "Expectations"/"Aspirations"

Almost all of these are spatial or horizontal comparisons (i.e. individuals compare to some group of others at the same point in time); the comparison to myself in the past is intertemporal

[5] This is actually less simple than it sounds, as some of the other control variables might depend on income. If higher income buys better health, or even a better chance of getting or staying married, then should we really condition on marriage when estimating the relationship between income and well-being?

or vertical, and raises the possibility of addiction.

We almost never have information on which reference group is the most relevant. One of the very few exceptions is Melenberg (1992), who asked respondents directly about the income of the people with whom they often interacted. We are only aware of one study where respondents were given a list of options and asked to explicitly state to whom who they compare themselves. In Knight and Song (2006), survey respondents in China are asked to whom they compare themselves: 68% replied that their main comparison group consisted of individuals in their own village, whereas only 11% stated that their main comparison group consisted of individuals from outside of the village. Wave 3 (data mostly collected in 2006) of the European Social Survey will go some way to filling this lacuna. Individuals are first asked "How important is it to you to compare your income with other people's incomes?" They are then asked "Whose income would you be most likely to compare your own with?", with responses on a showcard of Work colleagues, Family members, Friends, and Others.

Empirical research has appealed to more or less all of the different definitions of the reference group evoked above. This growing literature is surveyed in Clark *et al*. (2006). For example, Clark and Oswald (1996) use the first wave of the British Household Panel Study (BHPS) to look at the relationship between job satisfaction and labour income amongst British employees. The main findings here are that there is evidence that job satisfaction rises with your own income, but falls as the income of the peer group (other people with the same job and demographic characteristics) rises. So we do seem to be in the same situation as in the car example above. Clark (1996) extends this result to partner's income and the income of other adults in the same household. Luttmer (2005) is a careful recent attempt to measure comparisons to those with whom individuals are in close geographical proximity. The conclusions from regressions which model subjective well-being as a function of own income and others' income are illustrated in Figure 4. The multivariate results suggest that:

* Satisfaction rises with own income, holding others' income constant.
* Job satisfaction falls with others' income, holding own income constant.
* Income rises for everyone don't much affect satisfaction.

This last is of particular interest, as it reminds us of the flat part of the cross-country graph in Figure 1. From a political economy point of view, we can read the last graph in Figure 4 backwards: a fall in everyone's income will not leave anyone worse off. From the first graph, no

one person will have an incentive to reduce their own income (Y) if Y* remains unchanged. However, if all incomes fell at the same time then Y/Y* will remain unaffected. There would therefore seem to be a role for government coordination, via legislation[6] or the tax system, to free resources for public goods without making any individual worse off as a result of their own private consumption. One problematic issue is that any individual who thinks in partial equilibrium (i.e. who sees the effect on their own income, but without realising that Y* will change as well) will not be in favour of any such intervention.

Wages are habit-forming

Figure 4 was couched in terms of comparisons to others. Comparisons may also take place over time, so that I evaluate my income today in terms of how much I used to earn in the past. The externality here is intertemporal and within individuals: it is my own past good fortune that reduces my current well-being. The implication is then that individuals adapt to higher incomes. Clark (1999) used BHPS panel data to define Y* as the income of the same individual in the same job one year earlier, and found exactly this type of correlation.

Adaptation to income is of interest for labour economists, as it gives us another idea about why wage profiles are so steep. Two existing explanations are that productivity profiles are themselves quite steep, and that fast-growing wages reflect an incentive mechanism to avoid shirking (workers effectively post a bond by being underpaid at the beginning of their career, in return for being overpaid at the end of their career). The presence of comparisons to the past implies that, independent of these two concepts, individuals might just simply have a taste for income growth.

Other Evidence

The statistical analysis of subjective well-being measures in survey data is by no means the only way to show that comparisons take place, although it is the approach that is emphasised in the current paper. In terms of income comparisons, there is an enormous amount of work on fairness in experimental economics. Although the fit is not exact,[7] it is tempting to interpret this research in the light of some comparison process. See for example Fehr and Schmidt (1999) and Rabin and Charness (2002). In one particular experiment, it looks as if individuals will pay to

[6] Maximum hours of work legislation might be thought of in this light.
[7] Fairness implies that individuals do not want to be either "underpaid" or "overpaid" relative to others, whereas the well-being literature has typically insisted that individuals like doing better than others, so that the effect of Y* is always negative.

have higher rank. Specifically, they will pay part of their own (real) earnings to destroy other participants' earnings (Zizzo and Oswald, 2001).

It is also possible to ask individuals directly about their preferences between hypothetical outcomes. One strand of this work (Alpizar *et al*., 2005, Johannsson-Stenman *et al*., 2002, and Solnick and Hemenway, 1998) has tried to identify social comparisons by asking individuals to choose between states of the world which differ in both the absolute and relative domains. For example, in Solnick and Hemenway, individuals are asked to choose between states A and B, as follows:

A: Your current yearly income is $50,000; others earn $25,000.

B: Your current yearly income is $100,000; others earn $200,000.

Here, "others" refers to average wages of other people in the society, and it is emphasised that "*prices are what they are currently and prices (the purchasing power of money) are the same in States A and B*". All three papers find that individuals say they are willing to give up absolute income in order to gain status (choosing A over B above). Along the same lines, Frank and Hutchens (1993) and Loewenstein and Sicherman (1991) show that individuals express a preference for wage profiles which rise over time, even though these have lower present discounted values than alternative profiles with constant or decreasing wages. People are essentially prepared to pay to receive upward-sloping profiles.

Finally, a recent literature has looked at neurological evidence for comparisons. Animal studies have examined neuronal activity when faced with pairs of rewards (here different flavours of fruit juice). Previous testing allows a preference ranking over fruit juices to be established for each monkey. The experimental results show that "striatal neurons do not process reward information in a fixed manner but relative to other available rewards" (Cromwell et al, 2005, p.522; see also Tremblay and Schultz, 1999). Equally, there is some evidence that neuron firing is determined by the amount of relative reward within a gamble (i.e. relative to the amount that could have been won).

The conclusion from this ongoing research programme is that that there do indeed seem to be strong income comparison effects, both spatially (between groups) and over time with respect. Together, these might arguably be behind the small effect of income on well-being in developed countries.

3. Economic Policy: What Should We Do Now?

A common economic policy conclusion appeals to the research outlined in Section 2 to

conclude that "Income and Consumption aren't making us any happier, so we should spend our time concentrating on X instead". Some of the candidates for X include:[8]

* Social activities (marriage, the family, and social capital in general)
* Spiritual activities (religion and meaning in life)
* The quality of working life
* Social and Political values (freedom and democracy)
* Health

While all of these seem eminently sensible, there seems to be an element missing from the argument. "There are comparison/habituation effects between income and well-being": this was the subject of Section 2, and we think that it may well hold. "Hence we should be doing something else instead": this policy prescription rests on the untested hypothesis that there are no (or fewer) comparison/habituation effects between the "something else" in question and well-being. The remainder of this paper is devoted to evaluating this hypothesis. The potentially depressing conclusion is that, if not pervasive, comparisons to others and habituation seem to form a regular part of economic and social life.

Work

Surely the most important element of work in individual well-being is the fact of having a job or not, when one wants one. Along with the relationship between income and happiness, the role of unemployment in individual well-being has been something of a mainstay in the Economics literature. Unemployment is strongly negatively correlated with various measures of well-being. Figure 5 illustrates with data from the EHP, where average life satisfaction (on a 1-6 scale, with 6 being the most satisfied) is plotted against labour force status. The unemployed score, on average, two points lower than do those in employment or self-employed, which is a very large difference on a six-point scale. This negative relationship persists in regression analysis which controls for the level of income (for example, Clark and Oswald, 1994, and Winkelmann and Winkelmann, 1998): as such, the main effect of unemployment would seem to be non-pecuniary.

In terms of this paper's subject matter, we are interested in whether there is any evidence of comparisons to unemployment. This question is investigated using multivariate regression

[8] See for example the "Big Seven" listed on page 63 of Layard (2005).

analysis, as above, to model the relationship between well-being and unemployment for all individuals of working age. This work has been carried out on British, German, and European (multi-country) panel data.

The main result is that there do indeed appear to be comparison effects with respect to others' unemployment. Clark (2003) uses the first seven waves of the British Household Panel Survey to consider the relationship between individual well-being, on the one hand, and regional and household unemployment on the other. While individual unemployment is associated with lower well-being, the size of this negative effect is context-dependent on the local context. Broadly speaking, unemployment hurts less the more there is of it around.

The graphs in Figures 6 and 7 illustrate the main results. Figure 6 shows the bivariate relationship between psychological well-being (as measured by the GHQ-12 score) and regional unemployment. The "caseness" measure of GHQ runs on a scale of 0 to 12, coded here so that 12 means better psychological functioning. The vertical axis measures the difference in GHQ score between the employed and the unemployed: it is therefore a measure of how much worse the average unemployed person is than the average employed person, or of the average psychological cost of unemployment. This figure has been calculated separately for each of the seven data waves, and for each of the 11 different standard regions in Great Britain (as listed in the note underneath the graph), producing 77 data points in all. The figure on the horizontal axis shows the unemployment rate, by region and by year, matched in from the UK Labour Force Survey. Figure 6 suggests that the psychological cost of unemployment is smaller in regions where the regional unemployment rate is higher.

This analysis can be formalised by running multivariate regressions of well-being on own unemployment, regional unemployment, and the interaction between the two, as well as a host of other standard socio-demographic control variables. The results of such regressions are summarised in Figure 7, which provides the predicted well-being levels of individuals in different kinds of labour market situations.[9]

The left-hand side panel of Figure 7 refers to the relationship between well-being and regional unemployment. The first bar refers to an individual in work (E) in a region with a five per cent unemployment rate. This individual is predicted to have a 60 per cent probability of having high well-being. Moving this employed individual to a region with a higher (10%) unemployment rate slightly reduces their well-being. The relationship is the other way round for

[9] The figures on the vertical axis actually refer to the predicted probability, from an ordered probit equation, that an individual has a "high" level of well-being (a score of 10 to 12 on the 0-12 scale).

the unemployed. An unemployed individual in a region with a 5% unemployment rate is predicted to have a 31% chance of having high well-being; moving this unemployed individual to a region with higher unemployment actually increases their well-being (to a figure of 38%).[10] This result concords with findings on suicide and para-suicide rates by the unemployed, which are highest in low unemployment regions (see Platt and Tansella, 1992).

The right-hand panel repeats this analysis, but for a much tighter reference group: the individual's spouse. The analysis refers to couples who are both active in the labour market. There are four possible outcomes, given by the combinations of employment and unemployment between the individual and her spouse. The first column shows the probability of high well-being for a worker with an employed spouse (58%); this probability falls to 56% for the employed whose spouse is unemployed. The worst situation is not when both individual and her partner are unemployed, as perhaps might have been imagined, but rather when the individual is unemployed and her partner works.

This discussion of social comparisons in the world of work has been confined to the fact of having a job or not. Along the same lines, it would be extremely useful to consider comparisons to others with respect to job characteristics other than income, such as hours of work, size of the office, job disamenities, and so on.

Adaptation to work and life events

A joint project between Economists and Psychologists (Clark *et al*., 2006) has considered adaptation to marriage, children, and labour force status using long-run German panel data (the GSOEP). The results are probably best illustrated by a series of graphs. Figures 8 through 13 show how wellbeing evolves around the time of unemployment, marriage, divorce, widowhood, birth of first child, and layoff respectively. The time of the event is shown on the horizontal axis in these graphs as time zero. We illustrate these life satisfaction movements relative to a "baseline" level, which is given by the level of life satisfaction predicted from a fixed effects regression. This predicted value uses information from both observables and unobservables, via the fixed effect. The analysis of life satisfaction relative to baseline of those who at some stage become unemployed (for example) thus controls for any selection effect (unemployment tends to happen to the relatively unhappy).

Although the strongest life satisfaction effect is often at the time of the event, there are

[10] The regression results actually predict that being employed and being unemployed are associated with the same level of well-being when the regional unemployment rate is somewhere between 20% and 25%.

significant lag and lead effects. For the majority of the six events (divorce, widowhood, birth of first child, and layoff) we can conclude that there is complete adaptation. However, adaptation to marriage is only incomplete, and there is no adaptation to unemployment for men. In general, men are more affected by labour market events (unemployment and layoffs) than are women.

The conclusions regarding adaptation come from fixed-effects regressions. The results of these regressions are actually remarkably similar to the simple bivariate correlations illustrated in the graphs, with one important exception. When looking for evidence of adaptation to a state (such as marriage or unemployment), it is important to be aware that there are potential composition effects (or shift-share effects) at work. For example, if it is those who suffer the most from unemployment (i.e. those who are the least happy when unemployed) who leave unemployment the quickest, then over time only the relatively "happy" unemployed will remain. The relationship between unemployment duration and well-being will thus mechanically be positive. But this "bouncing back" does not reflect adaptation; it is rather a composition effect. Regression analysis with fixed effects controls for composition, because it compares the same individual at different points of unemployment duration. The results in Clark et al. (2006), extended to a number of different countries in Clark (2006) show that in fixed effect regressions there is no evidence of adaptation to unemployment for men.

Social Capital

The last two substantive parts of this section consider comparisons with perhaps more nebulous aspects of the "good life". The first is social capital, as emphasised by Putnam (2000). While a growing number of economists seem to consider that social capital is an important variable in explaining economic outcomes, there is as yet no unambiguous way of measuring it. As is often the case, the definition that I have used in my own research has been dictated by data availability. I consider social capital as activity in organisations (social engagement), rather than some measure of trust. In this respect I follow Glaeser *et al*. (2002).

In Waves Seven and Nine of the BHPS, individuals are asked whether they are active in the following organisations:

- Political party
- Trade union
- Environmental group
- Parents association
- Tenants group
- Religious group
- Voluntary group

- Other community group
- Social group
- Sports club
- Women's institute
- Women's group
- Other organisation

The Yes/No answers to these questions can be summed to produce a social capital activity score which goes from 0 to 13. Equally, in Waves 8 and 10 individuals are asked about the intensity of the following activities:

- Walk/swim/play sport
- Watch live sport
- Go to the cinema
- Go to theatre/concert
- Eat out
- Go out for a drink
- Work in garden
- Do DIY, car maintenance
- Attend evening classes
- Attend local groups
- Do voluntary work

The replies are recoded so that a value of one refers to "At least once a month" or more often, and zero to less often than once a month. The sum of these recoded answers provides an intensity score which runs from 0 to 11. We therefore have two social capital measures, referring to activity (what you do), and intensity (how often you do it).

Regression analysis of life satisfaction shows that, as expected, those with more social capital are more satisfied with their lives. This holds for both activity and intensity. We should be aware of the difficulty of establishing causality in this relationship. Using the household aspect of the BHPS, we can match in the social capital activity of all of the other adults who live in the same household. The regression results below show that individuals do seem to evaluate their social capital activity relative to that of other household members. In particular, individuals seem to receive a life-satisfaction boost from being the most socially-active person in the household:

Life Satisfaction and Social Capital Regressions

Own Social Capital Activity	-0.001
	(.021)
Other Household Members'	0.062
Social Capital Activity	(.025)
More Active than Other	0.054
Household Members	(.026)

Individuals like to live in households with active members. But they also want to be more active than anyone else.

It is also possible to use information from the two separate waves to consider adaptation to social capital. Is the effect of a given amount of social activity at Wave Nine smaller for those who were more active at Wave Seven? Regression analysis provided no evidence of such an adaptation effect.

Religion

The last type of social comparison considered in detail here is religious. It is by now well-established that the religious report higher subjective well-being scores than do the non-religious. In Clark and Lelkes (2005), we appeal to data from the first wave of the European Social Survey to consider whether the life satisfaction boost from my own religiosity depends on how religious my neighbours are.

We find that own religious behaviour is positively correlated with individual life satisfaction, controlling for demographic characteristics and country fixed effects. Average religious behaviour in the region (defined at the NUTS2 level) also has a positive impact: people are happier in more religious regions. Equally, people are less happy in regions where there is a higher percentage of "atheists" (those who say they do not belong to any religious denomination). This positive spillover from others' religious behaviour is found for both religious and non-religious individuals.

We further investigate spillovers between individuals by considering the role of the dominant religion: do the religious receive a bigger satisfaction return when they belong to the dominant religion in the region? The results are shown in Table 1. Protestants report significantly higher life satisfaction when they live in a region where the dominant religion is Protestantism. On the contrary, the greater life satisfaction of Catholics is independent of the

local dominant religion. We interpret this result as reflecting the different institutional structure of the two religions, with more centralised Catholics being less sensitive to the local religious conditions.

Other possibilities

There are arguably a good number of other domains which are important determinants of subjective well-being. As above, the key question is to identify the extent of social comparisons and adaptation in these domains. One such domain is health, where and Oswald and Powdthavee (2005), Riis *et al*. (2005) and Wu (2001) have shown evidence of adaptation to illness or disability. I am not aware of work that has shown social comparison effects of health (in the sense that my own ill-health matters less if others around me are less healthy). In somewhat related work with Fabrice Etilé, we have investigated the relationship between well-being and BMI. We show that own obesity (a BMI of over 30) has a strong negative effect on individual well-being. However, this effect is smaller if the individual lives in a household where there is a at least one other obese person.

Another possible variable is political activity. It seems fairly uncontroversial to say that freedom and democracy are important. Frey and Stutzer (2000) is a nice example of the well-being return to democratic rights. However, are political rights related relatively to those in the reference group? And do we get used to democracy? These are for the moment open research questions.

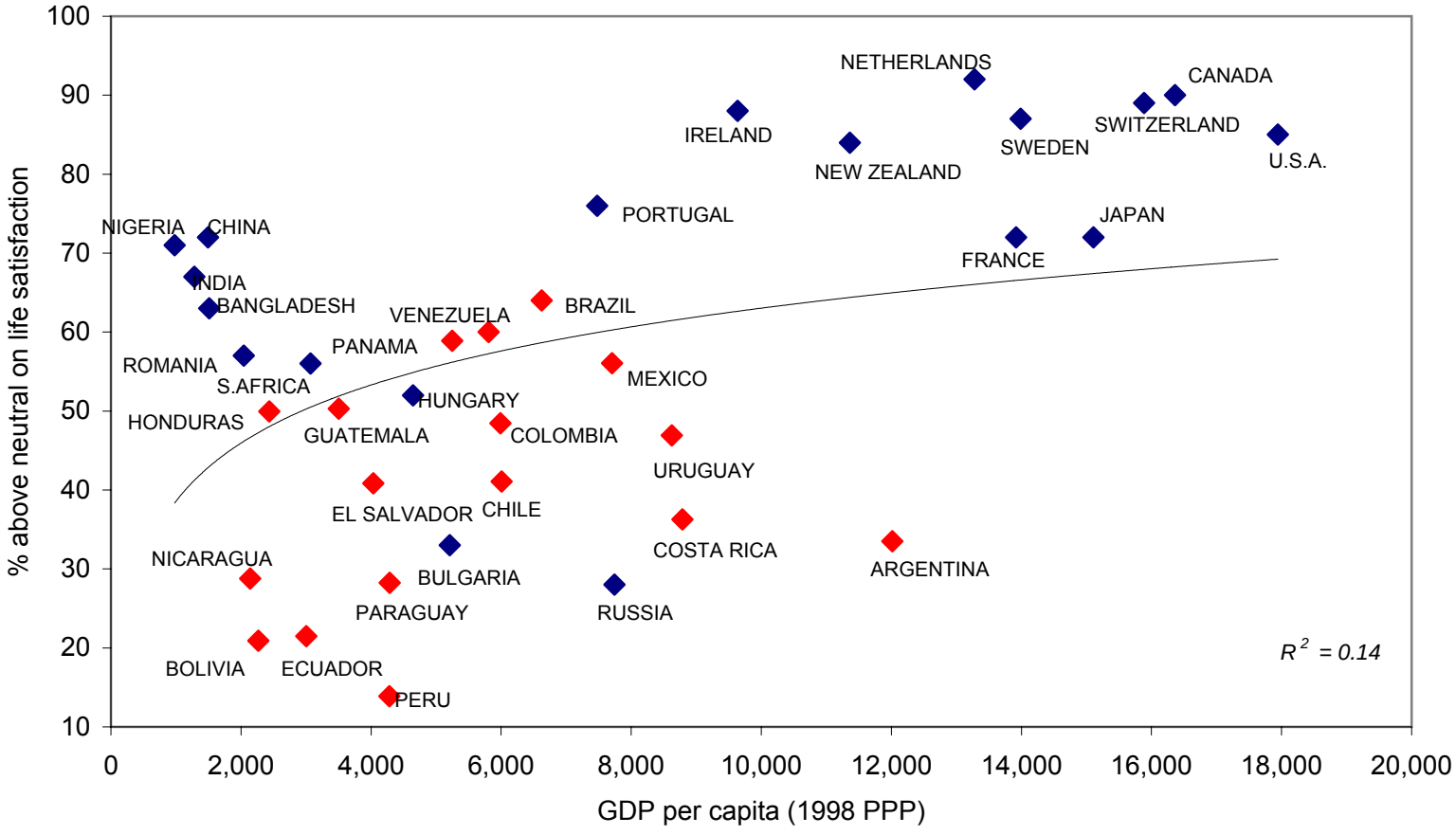
4. Conclusion

Table 2 summarises the rough position of our current knowledge regarding comparisons, to others and to the past, in a number of areas of economic and social life. Two key points should be drawn from this table. The first is that many of the policy statements that have issued from research on subjective well-being have considered the first line of this table only: social comparisons and adaptation seem rife with respect to income, so we should change our priorities from income to something else. To be sure of this policy prescription, we need to establish that comparisons and adaptations are not present (or are at least less strong) in the alternative activities we propose. The general message of the work surveyed in this paper is that we should not take this for granted. We have not found evidence of comparisons and adaptation in all areas of life, but certainly in a number of different non-income fields.

The second point is that our knowledge is still incomplete. Even in terms of the domains

that appear in Table 2, there are an impressive number of question marks. And we can always imagine new elements to add to the table. One of the interesting applications of subjective well-being data has been to reveal information about the structure of the utility function. An important application of this research will be to determine which policy variables have significant and long-lasting effects on subjective well-being, without attracting status concerns. This will likely be the greatest contribution of research on well-being to the economic policy debate.

Figure 1
Happiness and Income Per Capita, 1990s



Source: Graham and Pettinato, 2002.

FIGURE 2: Happiness and Real Income Per Capita in the US, 1973-2004[11]

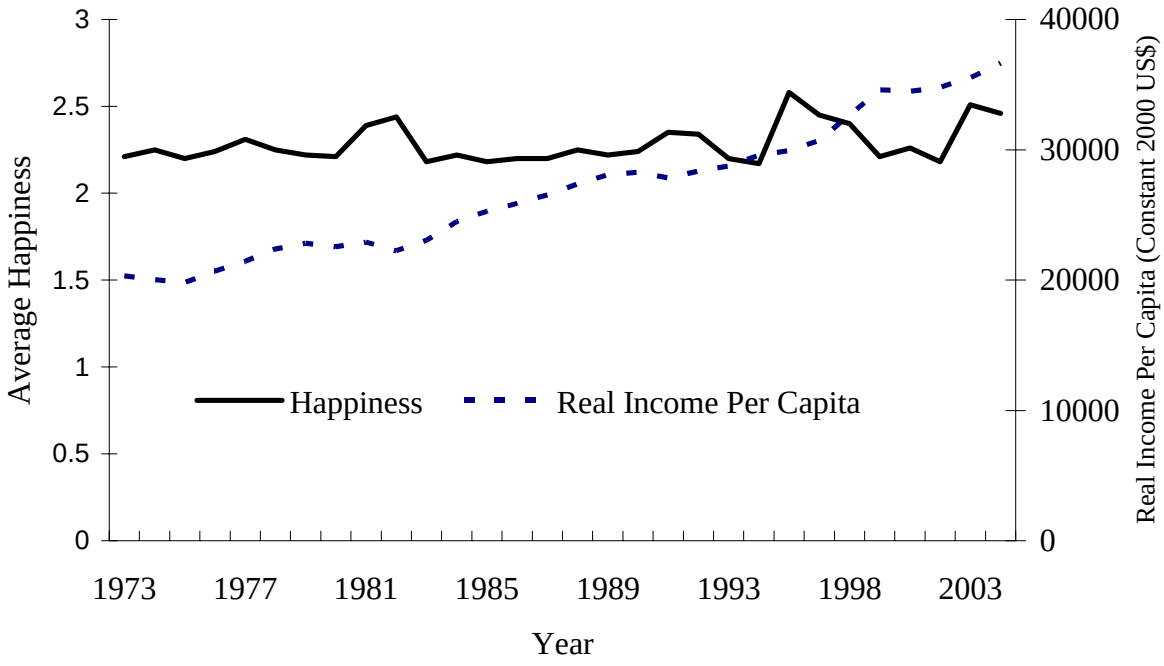
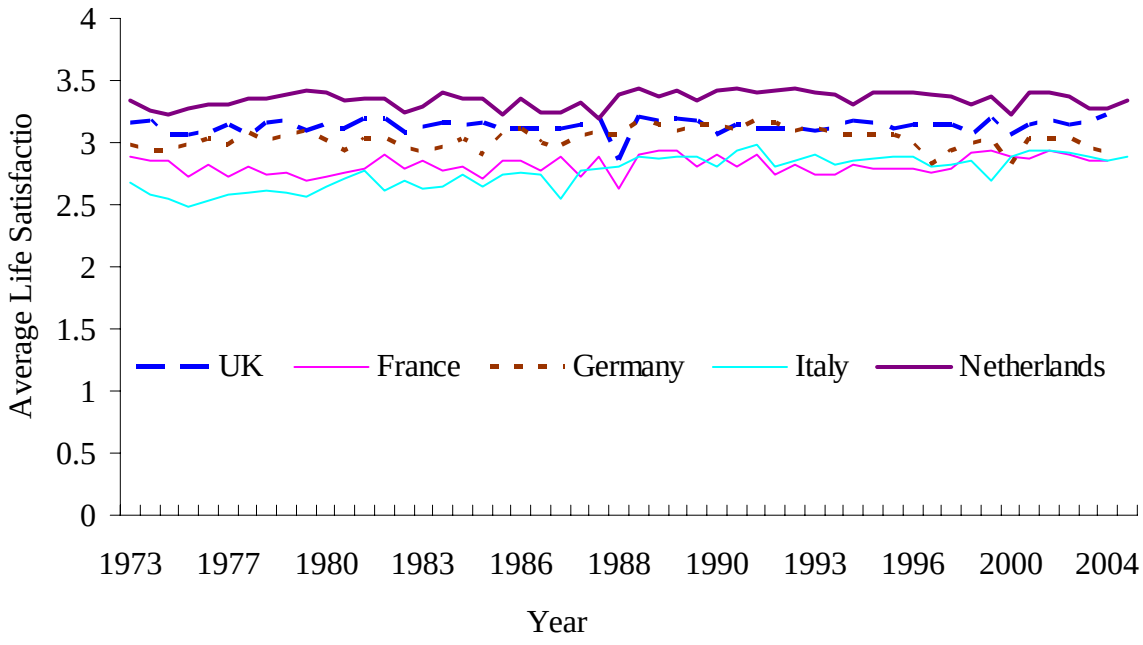


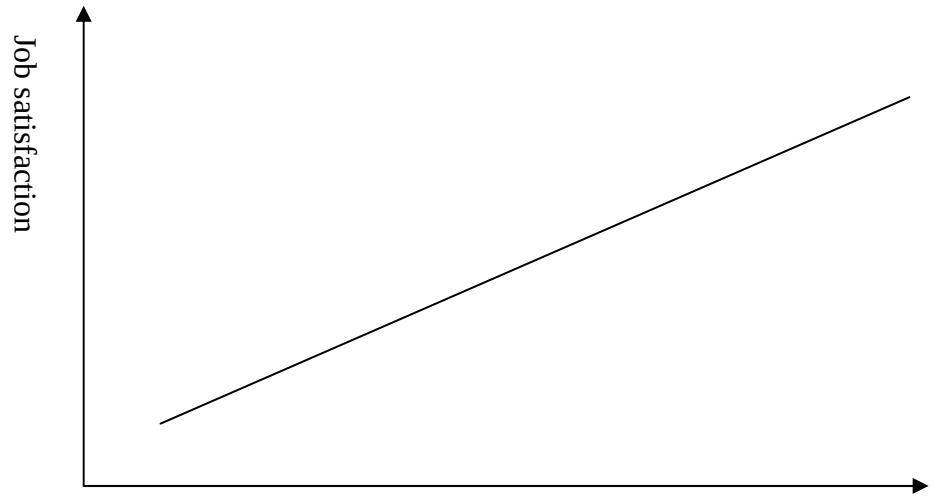
FIGURE 3: Life Satisfaction in Five European Countries, 1973-2004[12]



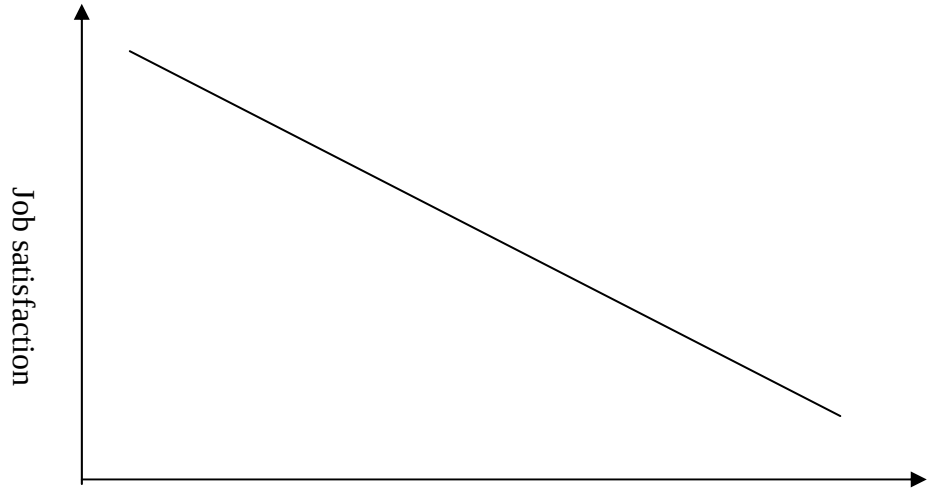
[11] *Source*: World Database of Happiness and Penn World Tables. Average reply to the following question: '*Taken all together, how would you say things are these days? Would you say that you are…?*' Responses are coded as (3) Very Happy, (2) Pretty Happy, and (1) Not too Happy. Happiness data are drawn from the General Social Survey.

[12] *Source*: World Database of Happiness. Average responses to the following question: '*On the whole how satisfied are you with the life you lead*'. Responses are coded as (4) Very Satisfied, (3) Fairly Satisfied, (2) Not Very Satisfied, and (1) Not at all Satisfied. Life satisfaction data are drawn from the Eurobarometer Survey.

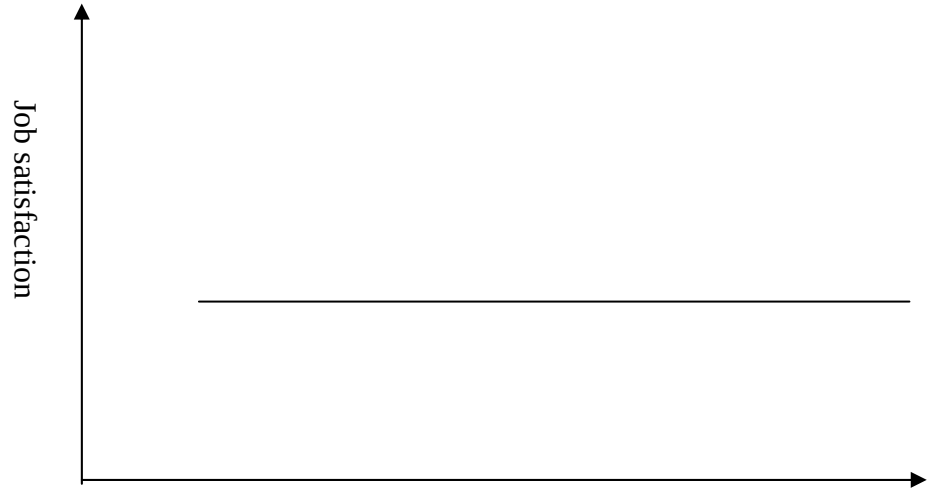
FIGURE 4. Satisfaction, Own Pay and Others' Pay



Own pay (y), holding y* constant

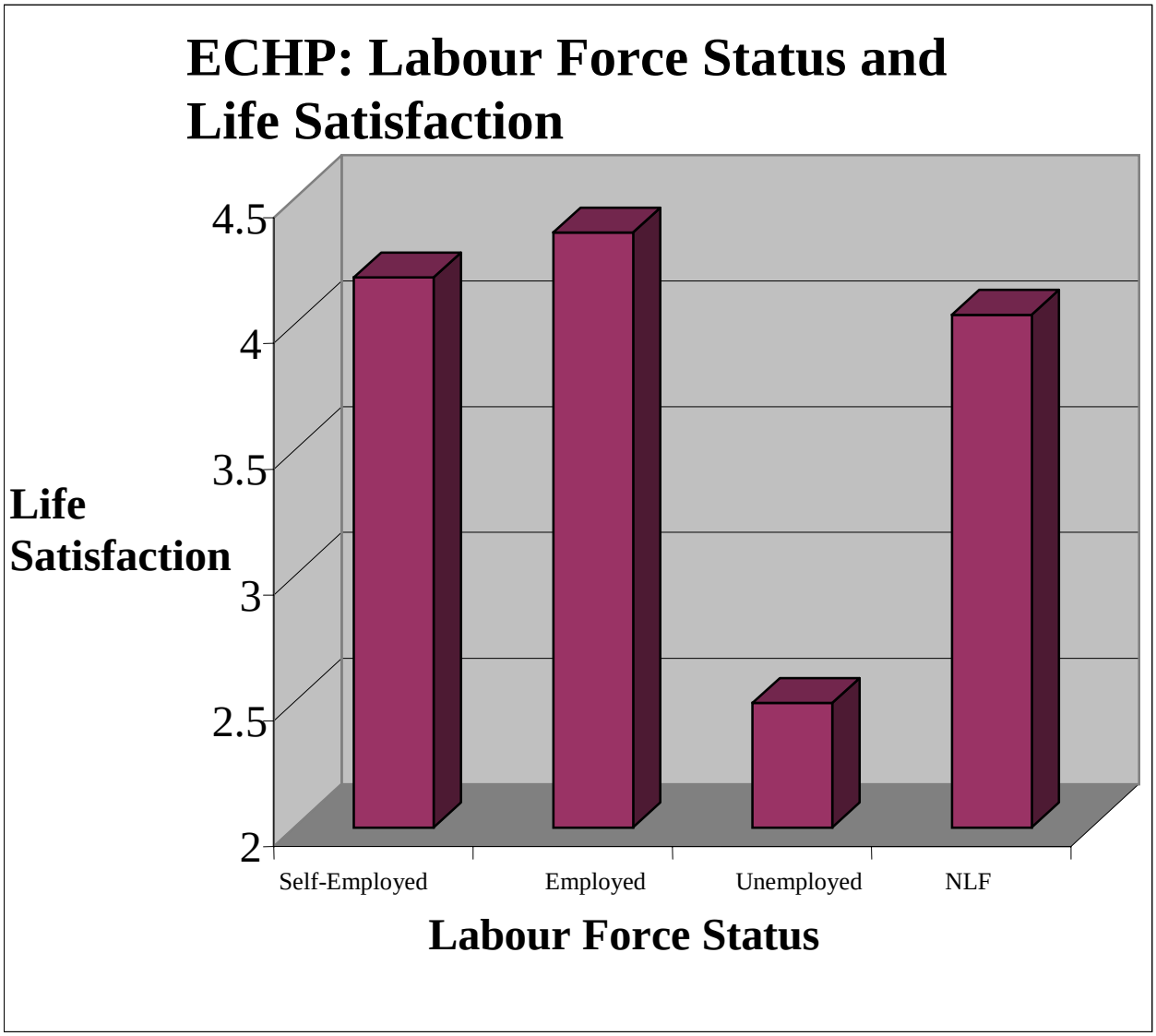


Others' pay (y*), holding y constant



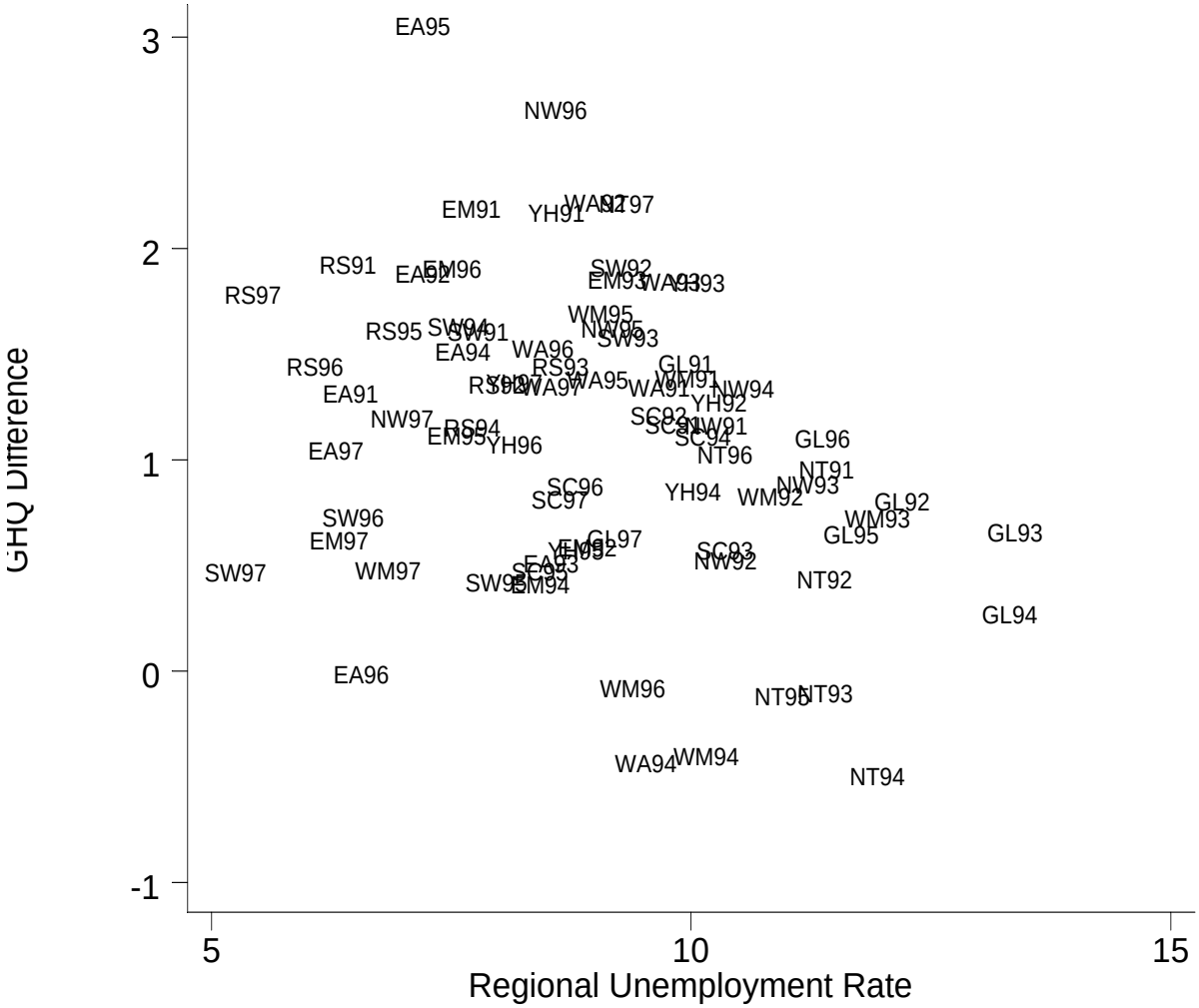
Pay rises for everybody (y/y* constant)

Figure 5. Life Satisfaction and Labour Force Status.



Source: ECHP. Life Satisfaction measured on a one to six scale.

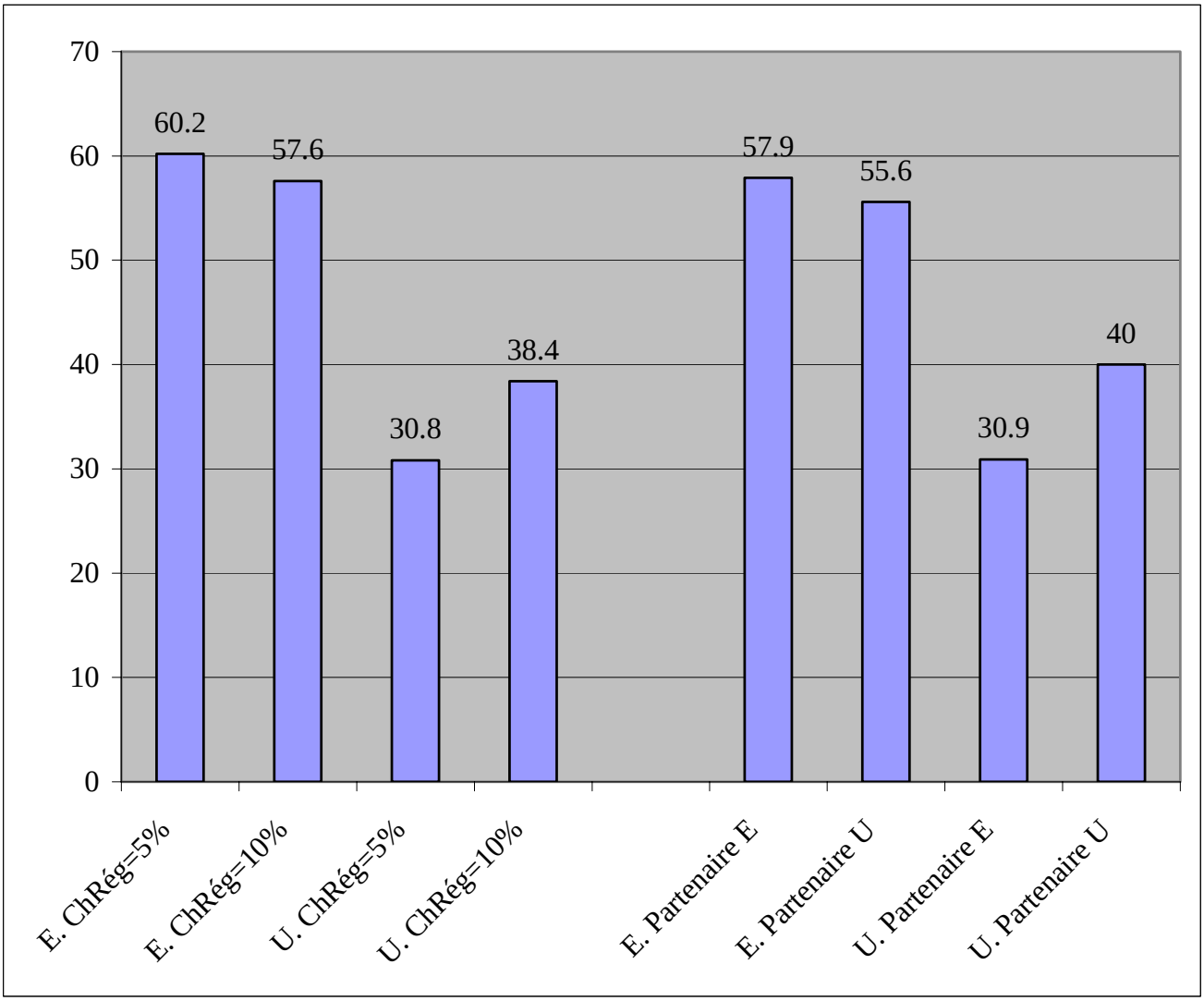
Figure 6. The Well-Being Gap between those in Work and the Unemployed (GHQ_E-GHQ_U) and Regional Unemployment Rates.
BHPS Waves One to Seven. (Eleven Regions)



Key: GL = Greater London, RS = Rest of the South East, SW = South West, EA = East Anglia, EM = East Midlands, WM = West Midlands, NW = North West, YH = Yorkshire and Humberside, NT = North, WA = Wales, SC = Scotland.

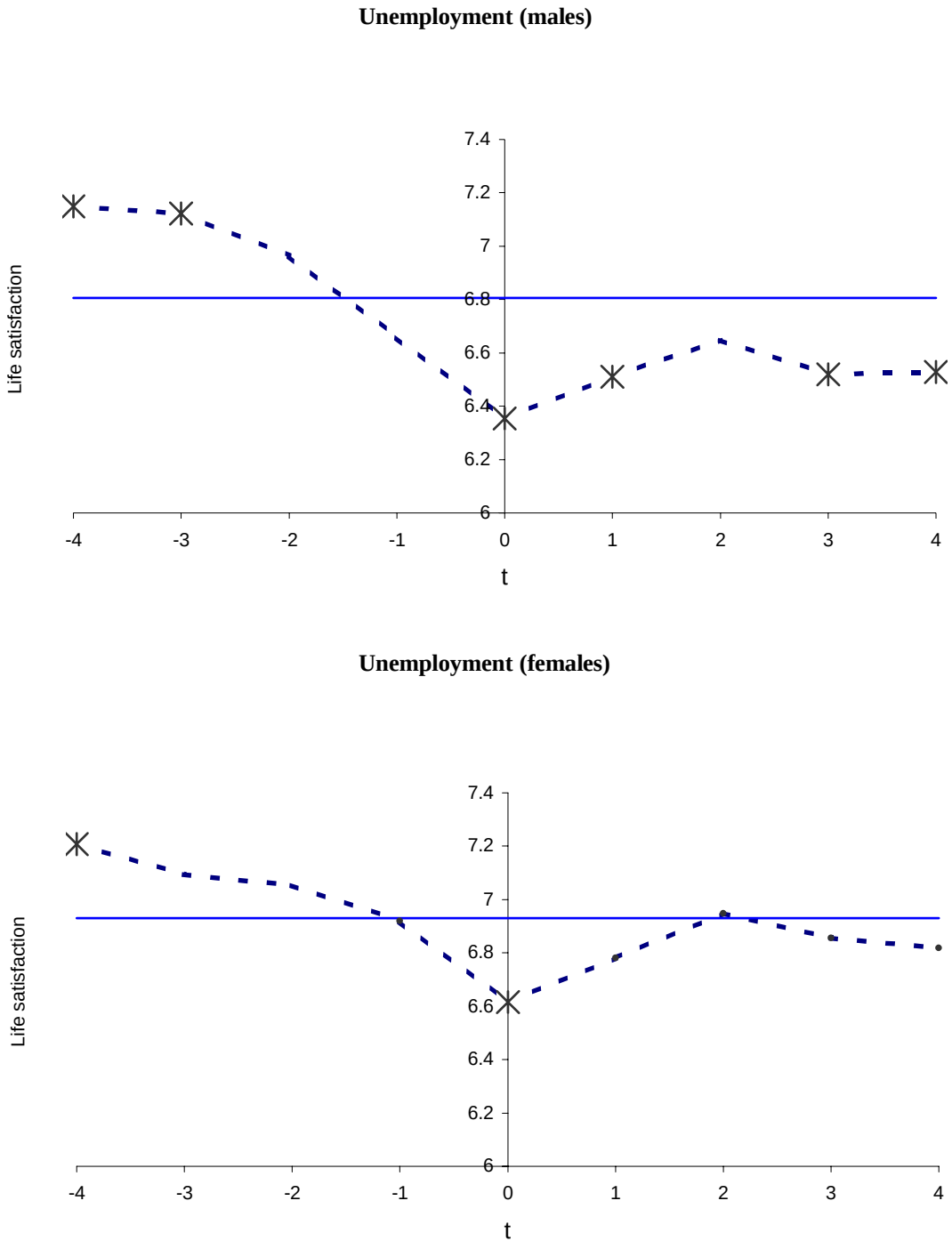
Source: Clark (2003)

Figure 7. Well-Being and a) Regional Unemployment, and b) Partner's Unemployment.



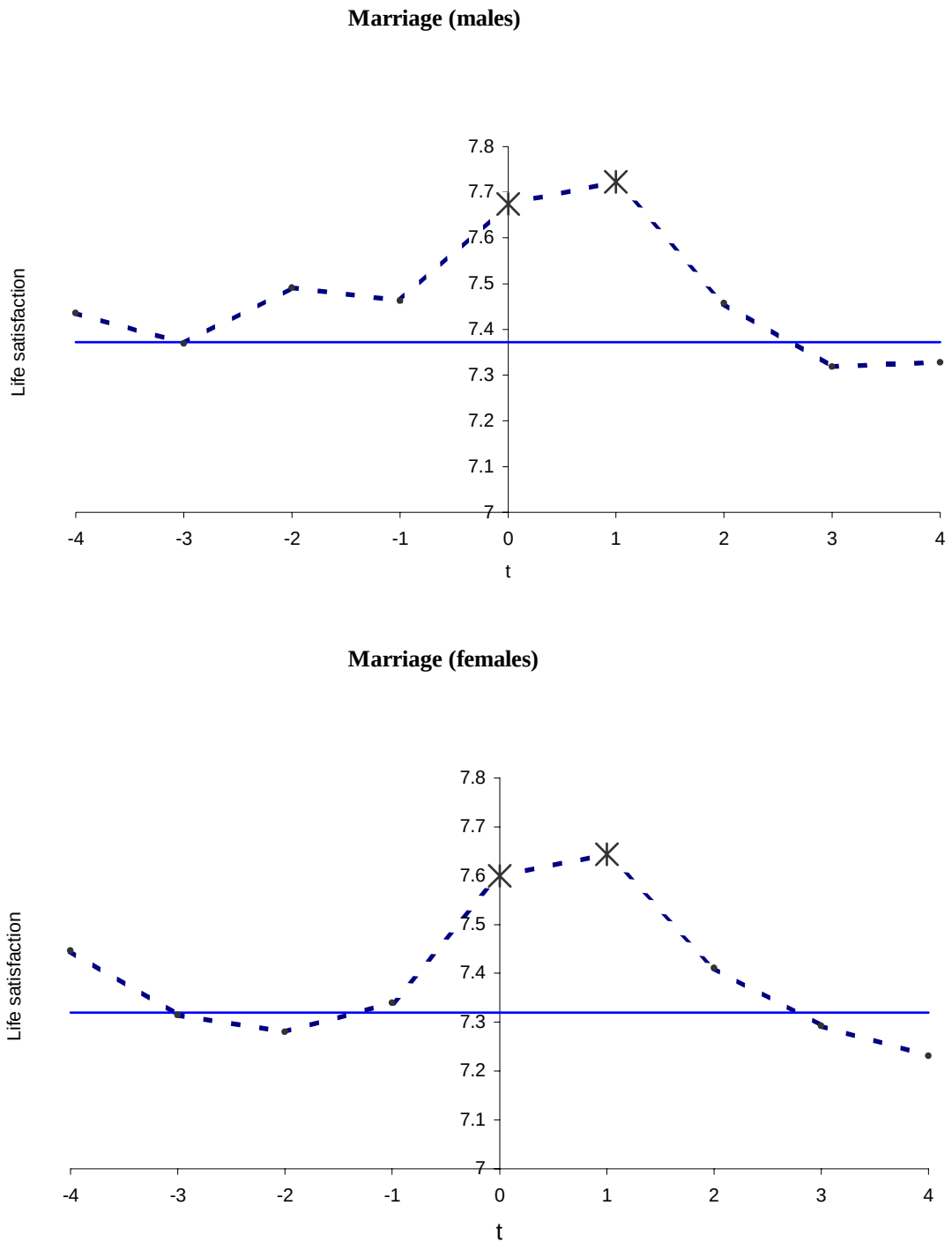
Note to all Figures: * indicates significance at the 5% level.

Figure 8. Unemployment and life satisfaction.



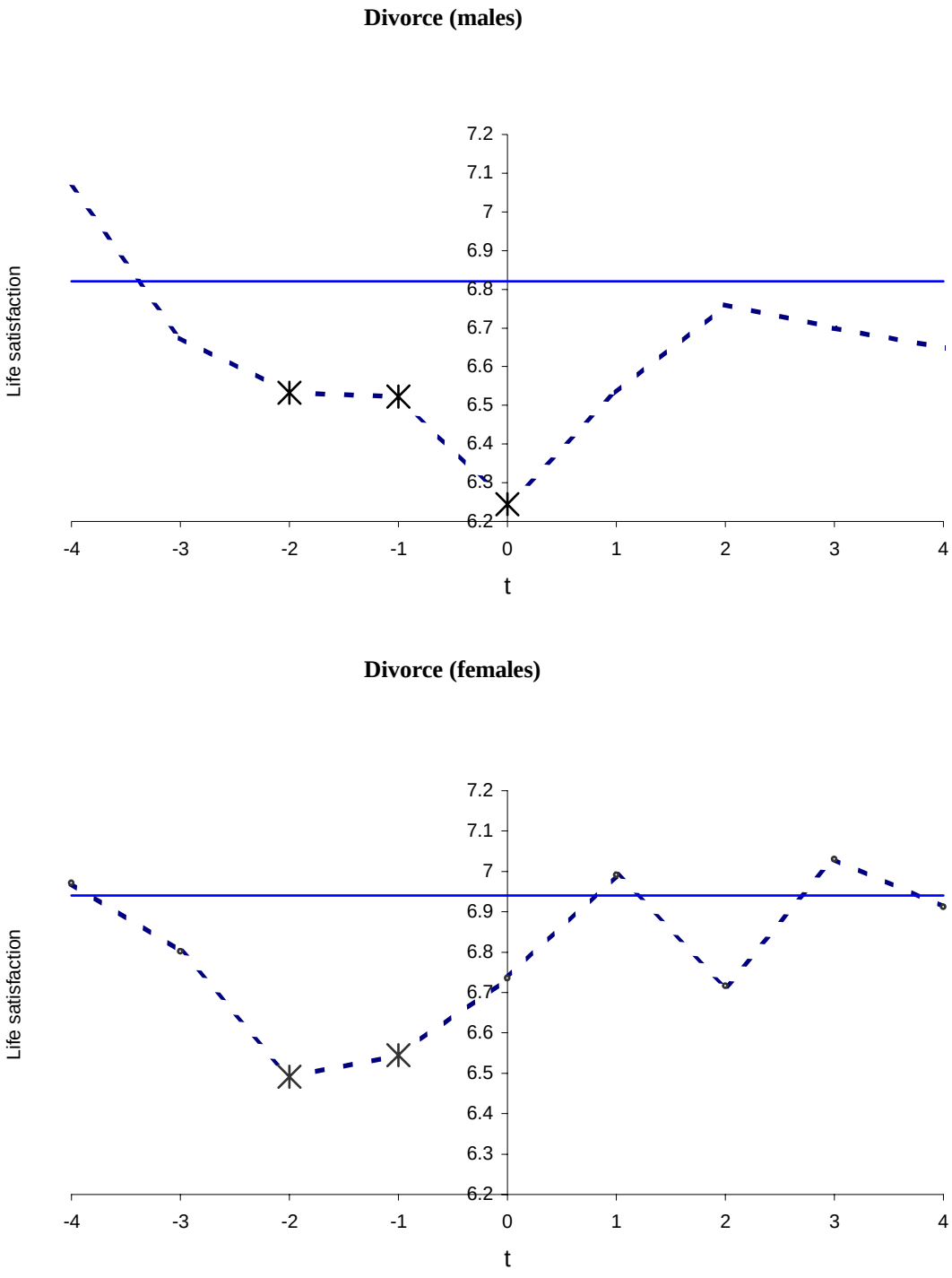
Note: Based on 283 and 383 observations for men and women respectively

Figure 9. Marriage and life satisfaction.



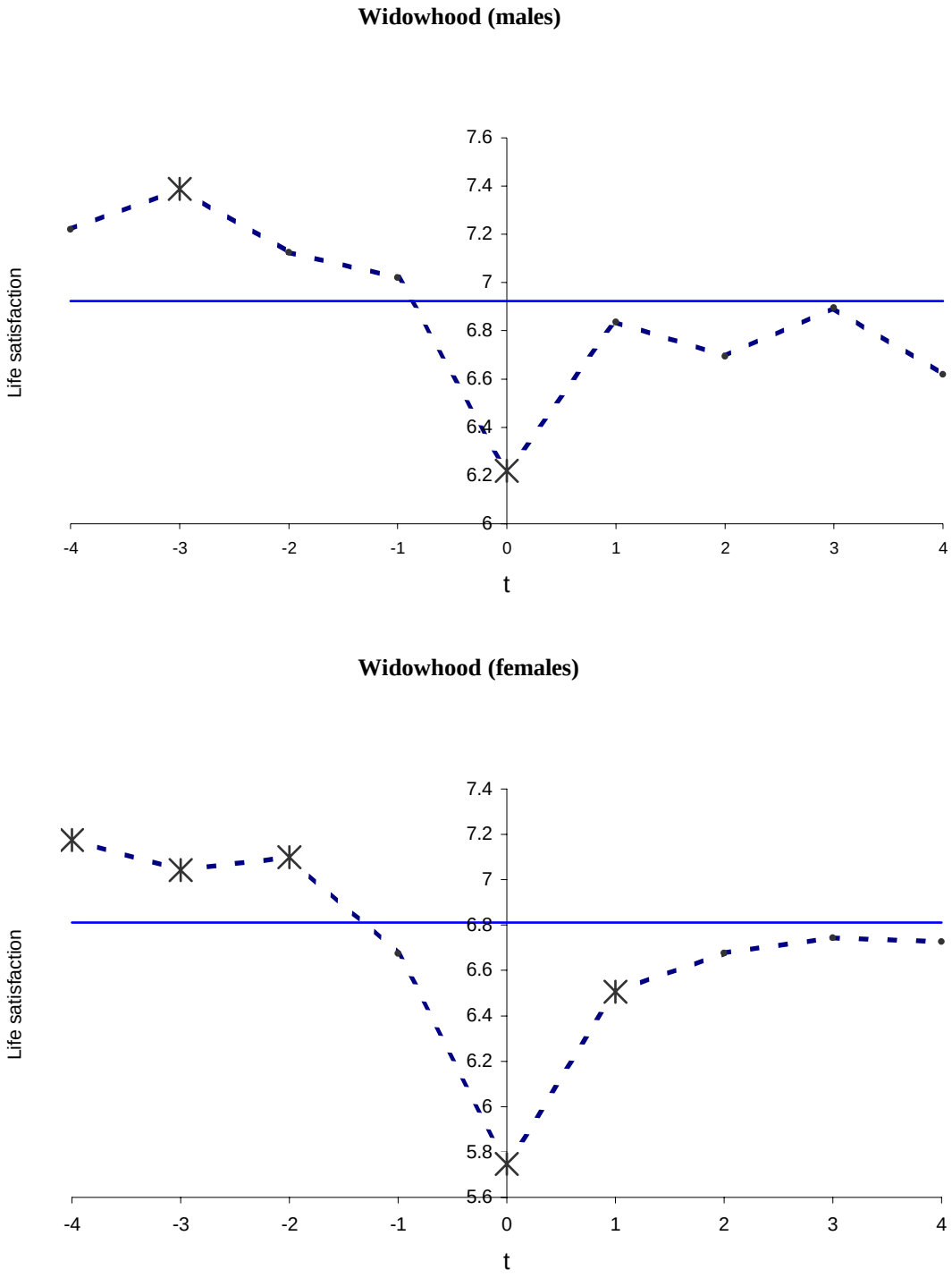
Note: Based on 279 and 261 observations for men and women respectively

Figure 10. Divorce and life satisfaction.



Note: Based on 103 and 120 observations for men and women respectively

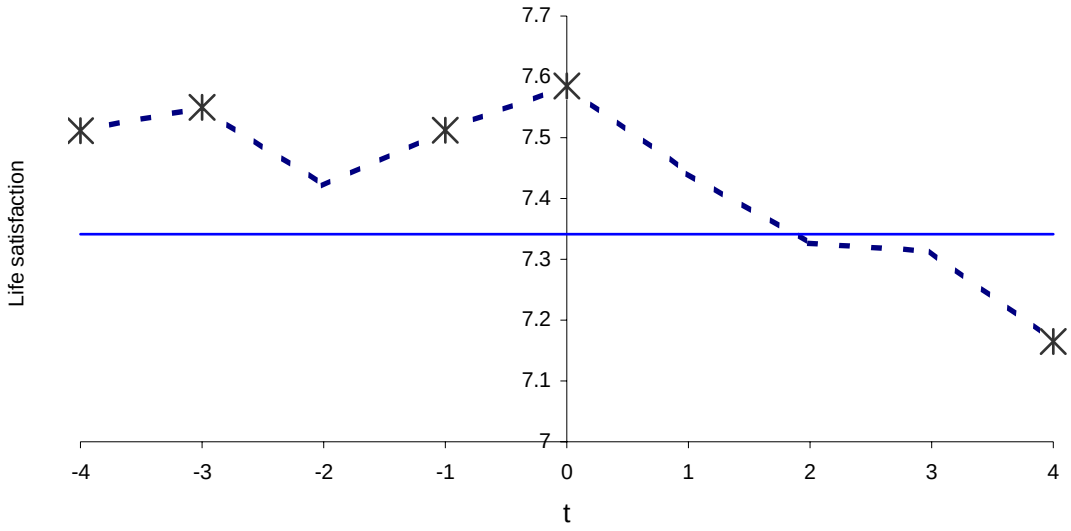
Figure 11. Widowhood and life satisfaction.



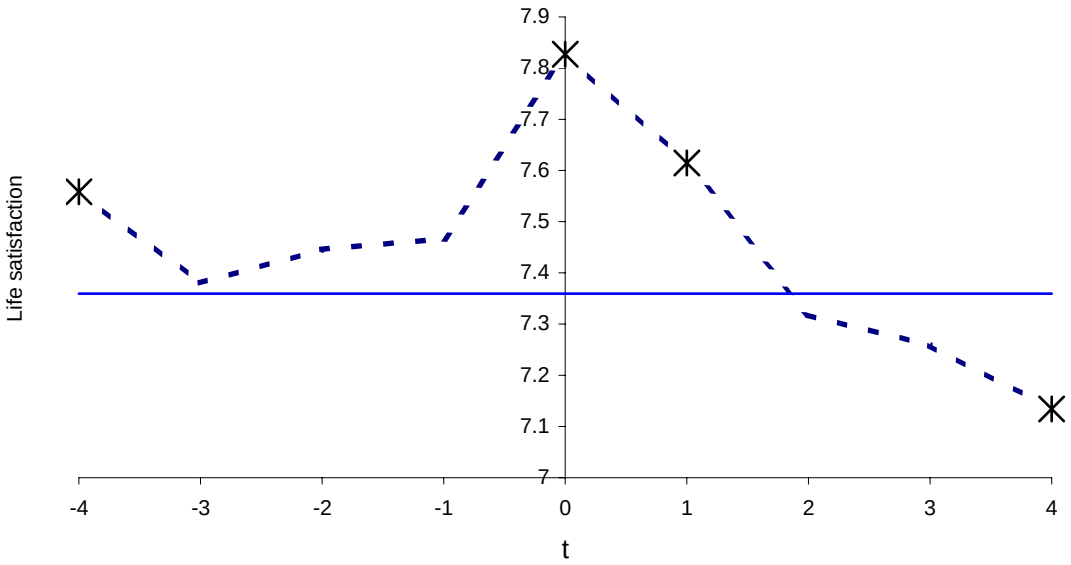
Note: Based on 55 and 207 observations for men and women respectively

Figure 12. Birth of first child and life satisfaction.

Birth of first child (males)

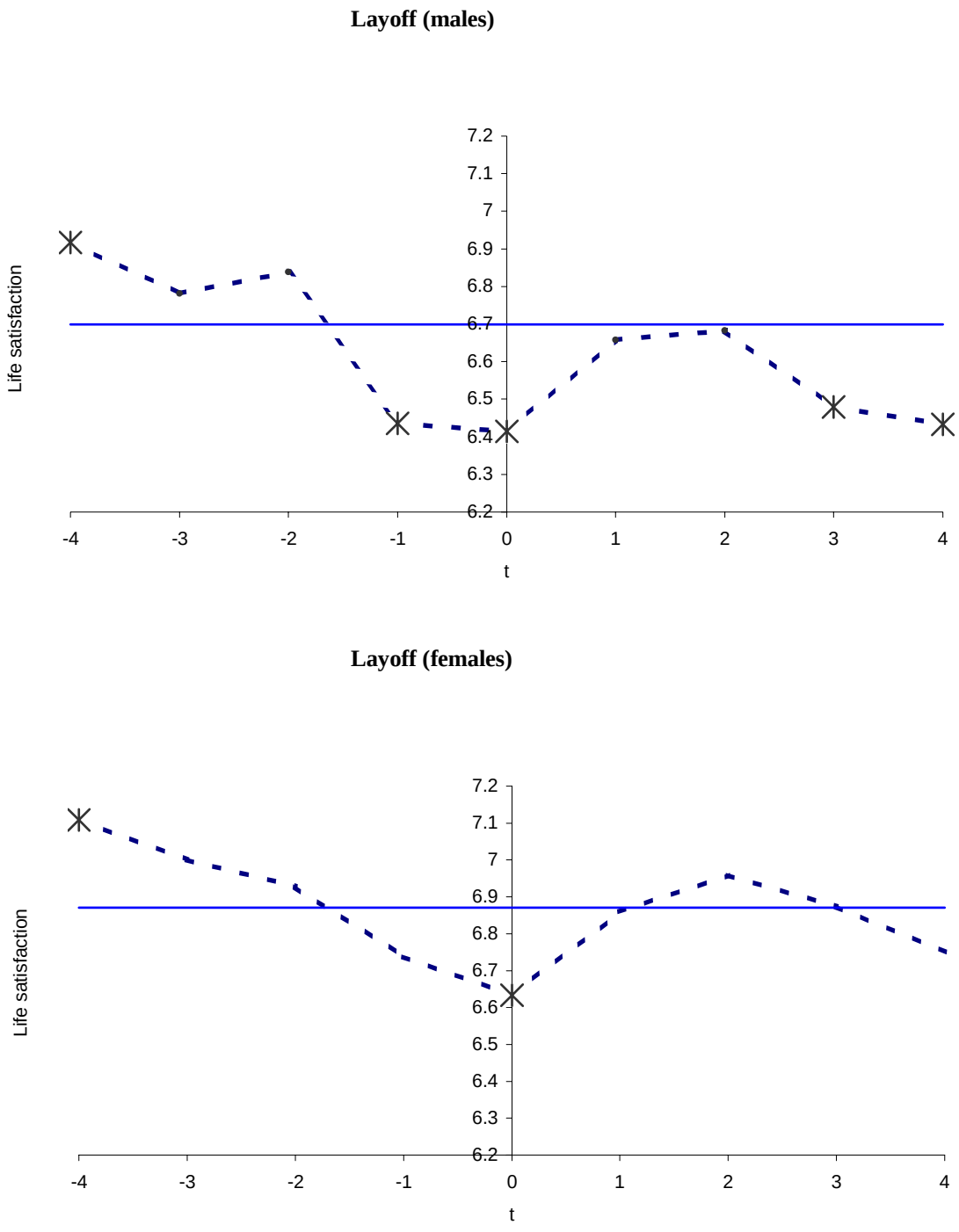


Birth of first child (females)



Note: Based on 322 and 305 observations for men and women respectively

Figure 13. Layoffs and life satisfaction.



Note: Based on 229 and 221 observations for men and women respectively

Table 1. Spillover effects of belonging to the dominant denomination. European Social Survey.

	Protestants		*Roman Catholics*	
Belongs to dominant denomination (incl. atheists)	0.304** (0.076)		0.082 (0.064)	
Belongs to absolute majority denomination (incl.atheists)		0.286** (0.089)		0.068 (0.075)
Observations	5440	5440	9801	9801

Note: dominant denomination defined at the regional level. Ordered logit estimates. The models include personal controls and country fixed effects. Standard errors in parentheses. * significant at 5%; ** significant at 1%

Table 2. Social Comparisons and Adaptation in Economic and Social Life

	Horizontal Comparisons (Status)	*Intertemporal Comparisons (Adaptation)*
Income	Yes	Yes
Unemployment	No	Yes
Marriage and Family	Partial	?
Health	?	Partial?
Social Activities	?? (Yes and No)	No
Freedom	?	?
Religion	Perhaps?	?

REFERENCES

Alpizar, F., Carlsson, F. and Johansson-Stenman, O. (2005). How much do we care about Absolute versus relative income and consumption? *Journal of Economic Behavior and Organization*, vol. 56, pp. 405-421.

Clark, A.E. (1996). "L'utilité est-elle relative? Analyse à l'aide de données sur les ménages". *Economie et Prévision*, **121**, 151-164.

Clark, A.E. (1999). "Are Wages Habit-Forming? Evidence from Micro Data". *Journal of Economic Behavior and Organization*, **39**, 179-200.

Clark, A.E. (2003). "Unemployment as a Social Norm: Psychological Evidence from Panel Data". *Journal of Labor Economics*, **21**, 323-351.

Clark, A.E. (2006). "A Note on Unhappiness and Unemployment Duration". *Applied Economics Quarterly*, **52**, 291-308.

Clark, A.E., Diener, E., Georgellis, Y., & Lucas, R. (2006). "Lags and Leads in Life Satisfaction: A Test of the Baseline Hypothesis". IZA Discussion Paper 2526.

Clark, A.E., Frijters, P., & Shields, M. (2006). "Income and Happiness: Evidence, Explanations and Economic Implications". PSE Discussion Paper 2006-24.

Clark, A.E., & Lelkes, O. (2005). "Let us Pray: Religious Interactions in Life Satisfaction". PSE, mimeo.

Clark, A.E., & Oswald, A.J. (1994). "Unhappiness and Unemployment". *Economic Journal*, **104**, 648-659.

Clark, A.E., & Oswald, A.J. (1996). "Satisfaction and Comparison Income". *Journal of Public Economics*, **61**, 359-81.

Clark, A.E., & Oswald, A.J. (1998). "Comparison-concave Utility and Following Behaviour in Social and Economic Settings". *Journal of Public Economics*, **70**, 133-155.

Di Tella, R., & MacCulloch, R. (2006). "Some Uses of Happiness Data in Economics". *Journal of Economic Perspectives*, **20**, 25-46.

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

Fehr, E., & Schmidt, K. (1999). "A Theory of Fairness, Competition and Cooperation". *Quarterly Journal of Economics*, **114**, 817-868.

Frank, R.H. and Hutchens, R.M. (1993). Wages, seniority, and the demand for rising consumption profiles. *Journal of Economic Behavior and Organization*, vol. 21, pp. 251-276.

Frey, B.S., & Stutzer, A. (2000). "Happiness, Economy and Institutions". *Economic Journal*, **110**, 918-938.

Glaeser, E., Laibson, D., & Sacerdote, B. (2002). "An Economic Approach to Social Capital". *Economic Journal*, **112**, 437-458.

Gruber, J., & Mullainathan, S. (2005). "Do Cigarette Taxes Make Smokers Happier?". *Advances in Economic Analysis & Policy*, **5**, Article 4.

Johannsson-Stenman, O., Carlsson, F., and Daruvala, D. (2002). Measuring future grandparents' preferences for equality and relative standing. *Economic Journal*, vol. 112, pp. 362-383.

Kahneman, D., Krueger, A., Schkade, D., Schwarz, N., & Stone, A. (2004). "Toward National Well-Being Accounts". *American Economic Review*, **94**, 429-434.

Knight, J., & Song, L. (2006). "Subjective Well-being and its Determinants in Rural China". University of Nottingham, mimeo.

Layard, R. (2005). *Happiness: Lessons from a New Science*. London: Penguin.

Loewenstein, G. and Sicherman, N. (1991). Do workers prefer increasing wage profiles? *Journal of Labor Economics*, vol. 9, pp. 67-84.

Luttmer, E. (2005). "Neighbors as Negatives: Relative Earnings and Well-Being". *Quarterly Journal of Economics*, **120**, 963-1002.

Melenberg, B. (1992). "Micro-econometric Models of Consumer Behaviour and Welfare". Tilburg University, mimeo.

Oswald, A.J., & Powdthavee, N. (2005). "Does Happiness Adapt? A Longitudinal Study of Disability with Implications for Economists and Judges". Warwick University, mimeo.

Platt, S.M.R. and Tansella, M. (1992). Suicide and Unemployment in Italy: Description, Analysis and Interpretation of Recent Trends. *Social Science & Medicine*, vol. 34, pp. 1191-1201.

Putnam, R.D. (2000). *Bowling Alone*. New York: Simon & Schuster.

Rabin, M., & Charness, G. (2002). "Understanding Social Preferences with Simple Tests". *Quarterly Journal of Economics*, **117**, 817-869.

Riis, J., Loewenstein, G., Baron, J., Jepson, C., Fagerlin, A., & Ubel, P. (2005). "Ignorance of Hedonic Adaptation to Hemodialysis: A Study Using Ecological Momentary Assessment". *Journal of Experimental Psychology: General*, **134**, 3–9.

Solnick, S.J. and Hemenway, D. (1998). Is more always better?: A survey on positional concerns. *Journal of Economic Behavior and Organization,* vol. 37, pp. 373-383.

Van Praag, B.M.S., & Baarsma, B.E. (2005). "Using Happiness Surveys to Value Intangibles: the Case of Airport Noise". *Economic Journal,* **115**, 224-246.

Winkelmann, L., & Winkelmann, R. (1998). "Why Are the Unemployed So Unhappy? Evidence from Panel Data". *Economica,* **65**, 1-15.

Wu, S. (2001). "Adapting to Heart Conditions: A Test of the Hedonic Treadmill". *Journal of Health Economics*495-508.

Zizzo, D.J., & Oswald, A.J. (2001). "Are People Willing to Pay to Reduce Others' Incomes?". *Annales d'Economie et de Statistique*, **63-64**, 39-65.