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ABSTRACT

Back to Baseline in Britain: Adaptation in the BHPS*

We look for evidence of adaptation in well-being to major life events using eighteen waves of British panel data. Adaptation to marriage, divorce, birth of a child and widowhood appears to be rapid and complete, whereas this is not the case for unemployment. These findings are remarkably similar to those in previous work on German panel data. Equally, the time profiles with life satisfaction as the well-being measure are very close to those using a twelve-item scale of psychological functioning. As such, the phenomenon of adaptation may be a general one, rather than being only found in German data or using single-item well-being measures.

JEL Classification: I31, J12, J13, J63, J64

Keywords: life satisfaction, anticipation, adaptation, baseline satisfaction, labour market and life events

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Back to Baseline in Britain: Adaptation in the BHPS

Andrew E. Clark and Yannis Georgellis

1. Introduction

Economists have becoming increasingly interested in adaptation over recent years. Many of the questions that have arisen are central to our understanding of individual behaviour and welfare: Are there welfare effects from the anticipation of future events? Do individuals get used to unemployment, marriage or higher incomes? And if they do, were their prior decisions informed ones, or did they not foresee this adaptation?

With our current state of knowledge, it is not possible to answer all of these questions at the same time, although a number of pieces of work have contributed parts of answers to one or more of them. A recent paper (Clark *et al.*, 2008) was arguably one of the first to trace out systematically the pattern of well-being leading up to and following a number of significant labour-market and life events, using large-scale long-run panel data. Their analysis sample of over 130,000 person-year observations in twenty waves of German Socio-Economic Panel (GSOEP) data revealed significant lag and lead effects. However, while the patterns in well-being were reasonably similar for men and women, they did differ noticeably between events. Complete adaptation in terms of life satisfaction was found for marriage, divorce, widowhood, birth of child, and layoff. The exception was unemployment, for which there was only little evidence of adaptation.[1]

The information provided in Clark *et al*. is novel, but inspires a number of questions: we deal with two of these here First, are these striking patterns of adaptation (or not) specific to Germany, or are they broadly representative? Second, their analysis was based on a single-item measure of well-being (life satisfaction). In the light of the strong preference expressed by Psychologists for multi-item measures of individual well-being, should these single-item results then be regarded with some suspicion?

With respect to the first of these questions, while we do not have harmonised data over a variety of countries that would allow us to replicate the analysis in Clark *et al.* (which requires relatively long-run panel data including a measure of individual overall subjective well-being), we can apply the method used for the GSOEP data to another well-known long-run panel survey: the British Household Panel Survey (BHPS). This latter does include (at least from Wave Six onwards) an overall life satisfaction question similar to that used by Clark *et al*. for their analysis of GSOEP data. Regarding the second of these questions, the BHPS also includes at every wave a psychological measure of mental stress (the 12-item General Health Questionnaire, or GHQ-12).

Our results suggest that the phenomenon of adaptation may be a general one, rather than being only

[1] We use the term adaptation to describe a well-being impact of being in a particular state that is attenuated over time. This may well reflect "getting used" to the event, as is often argued to apply to rises in income. However, it could also reflect learning new behaviours that help the individual overcome adversity. This may well apply to disability: individuals can learn how to become more mobile, how to operate specialised equipment, or have changes made to their houses which will make their lives easier. They then arguably have not adapted to a disability but have found ways in which to live with it. It is not obvious how to mobilise data to distinguish between these readings.

found in German data or using single-item measures. Specifically, the adaptation graphs that result from our analysis of both measures of well-being in the BHPS data are remarkably similar to those found in the previous GSOEP analysis.

The remainder of the paper is organised as follows. Section 2 briefly reviews the existing GSOEP results and some other findings on adaptation, and Section 3 lays out the regression methodology and the BHPS data. Section 4 then describes the new anticipation and adaptation results in the BHPS from single- and multiple-item subjective well-being scores. Last, Section 5 concludes.

2. Some Previous Findings

The growing interest shown by Economists and other social scientists in the analysis of subjective well-being data has been reflected in a sharp increase in publications in this domain in recent years. While it continues to be true that the vast majority of work has analysed the relationship between well-being at time *t* and individual explanatory variables measured at the same point in time, there is a small but growing literature that has taken the idea of the profile of well-being around an event seriously.

Lucas *et al.* (2004) use longitudinal data for Germany (GSOEP) to examine whether individuals recover from the negative well-being effect of unemployment. They find that any adaptation to unemployment is at best incomplete. Similarly, using the British Household panel Survey (BHPS), the European Community Household Panel (ECHP) and the GSOEP, Clark (2006) finds that the negative effect of unemployment does not dissipate rapidly with the duration of the unemployment spell. Unlike unemployment, other events do seem to have a more transient effect on individuals. Lucas *et al.* (2003) and Stutzer and Frey (2006) explore adaptation patterns to changes in marital status concluding that any positive well-being effect does not last beyond the early years of marriage. Lucas (2005) and Gardner and Oswald (2006) provide evidence of a rapid adaptation to divorce using the GSOEP and BHPS data respectively. Oswald and Powdthavee (2008) track individuals' levels of reported life satisfaction in the years leading up to, and following, disability. Although their results show a significant degree of recovery in reported life satisfaction, adaptation to pre-disability levels of well-being is only incomplete.

These studies explore adaptation patterns for one single event, and do not necessarily inform us about adaptation patterns across events. Clark *et al*. (2008) are an exception here in that they apply the same analytical techniques to GSOEP data in order to provide standardised information on how individuals' well-being develops in the approach to and aftermath of six major life events: unemployment, marriage, divorce, widowhood, birth of child, and layoff. Their results provide strong evidence of both anticipation and adaptation, and show that for all events, bar unemployment, there is a rapid return to a baseline level of well-being. In the same spirit of providing large-scale standardised evidence of adaptation to major life and economic events, Frijters *et al*. (2011) use six waves of the Household, Income and Labour Dynamics in Australia Survey (HILDA) to examine adaptation to marriage, divorce, birth of child, injury/illness, death of spouse or child, being a victim of crime, redundancy, change in financial situation, and change in residence. They find that whilst for all events the well-being effect two years after the event is smaller than the

contemporaneous effect, for many events the effect two years later is roughly zero, implying complete adaptation. Rudolf and Kang (2011) appeal to eleven years of Korean Labor and Income Panel Study (KLIPS) data to consider adaptation to marriage, divorce, widowhood, unemployment, first job entry, and the shift from the six- to the five-day working-week. They find full adaptation for some of these events. On the contrary, there is little evidence of adaptation to unemployment (although the evidence for women is inconclusive, due to small cell sizes), and there is some evidence that men have received an enduring well-being boost from the five-day week. There is an intriguing sex difference with respect to marital status, with men enjoying a long-lasting positive satisfaction boost from a marriage, but a corresponding long-run drop in satisfaction following divorce.

Focusing on the question of adaptation to income, Ferrer-i-Carbonell and Van Praag (2008) emphasise the importance of asymmetries in adaptation patterns, as income rises seem to have a larger impact on life and financial satisfaction than do income falls. Their results suggest that the adaptation of life satisfaction to income changes is only partial, depends on the specification of the utility model used and, if it occurs at all, is only for income falls. In contrast, they find no evidence of adaptation in terms of financial satisfaction, implying that money does buy financial satisfaction in the long run. Extending their analysis to explore adaptation to life events, they uncover some evidence of an asymmetry to changes in partnership. Losing a partner has a significant negative effect on well-being while the positive effect of acquiring a partner is not statistically significant. Ferrer-i-Carbonell and Van Praag (2008) conclude that the adaptation phenomenon is more intricate than previously thought and that adaptation patterns differ for the various life events and for different satisfaction domains. Lucas (2007) makes the same point, arguing that evidence based on large-scale panel studies rejects the notion that adaptation is inevitable. Reviewing recent findings in the adaptation literature, Lucas (2007) concludes that whilst it is possible for long-run subjective well-being to change, heterogeneity in patterns of adaptation across events and across individuals cannot be ignored. One of the aims of our paper is to provide some systematic evidence regarding this latter point

3. Methodology and Data

We here use data from eighteen waves of the British Household Panel Survey (BHPS) covering the period 1991-2008. We evaluate the extent of adaptation in well-being using two separate measures of the latter. The first is satisfaction with life, based on the responses to the question of "*How dissatisfied or satisfied are you with your life overall*"? The replies to this question are on a scale from one to seven, where 1 means completely dissatisfied and 7 means completely satisfied. This question is available from wave six onwards, effectively limiting our analysis period in terms of reported satisfaction to 1996-2008. Focusing on respondents aged from 16 to 60 yields an unbalanced panel of 55467 and 64859 person-year observations for men and women respectively, although the fact that we will need to take both lag and lead information into account simultaneously will seriously reduce the number of observations that will end up in the regressions. For the analysis of birth of child we limit our sample to include only those less than 40 years of age. For the analysis of widowhood we include respondents up to the age of 80.

The second well-being measure is the GHQ-12 measure of mental well-being (see Goldberg, 1972), based on responses to the General Health Questionnaire. This latter consists of twelve questions (administered via a self-completion questionnaire) covering feelings of strain, depression, inability to cope, anxiety-based insomnia, and lack of confidence, amongst others (see Appendix A). Responses are made on a four-point scale of frequency of a feeling in relation to a person's usual state: "Not at all", "No more than usual", "Rather more than usual", and "Much more than usual". The GHQ is widely used in medical, psychological and sociological research, and is considered to be a robust indicator of the individual's psychological state. The GHQ has previously been used in Economics to examine the psychological impact of unemployment (Clark and Oswald, 1994, and Clark, 2003).

This paper uses the Caseness version of the GHQ score, which counts the number of questions for which the response is in one of the two "low well-being" categories. This count is reversed so that higher scores indicate higher levels of well-being, running from 0 (all twelve responses indicating poor psychological health) to 12 (no responses indicating poor psychological health).[2] The GHQ question is available for all BHPS waves, thus increasing the effective sample for the analysis to 78108 and 90876 person-year observations for men and women respectively.

Tables 1a and 1b show the distribution of these two measures in our sample. Median life satisfaction is five on the one-to-seven scale, and median GHQ is 12 for men and 11 for women on the zero-to-twelve scale. There are however long tails in all of the well-being distributions here: 10% of individuals have life satisfaction scores of three or less, and ten per cent of men and sixteen per cent of women have GHQ scores of six or less.

[Tables 1a and 1b about here]

We here apply exactly the same methodology as in Clark *et al*. (2008), and appeal to a within-subject (fixed-effect) approach to examine how unemployment, marriage, divorce, birth of a child and widowhood are associated with life satisfaction and GHQ scores both before and after the event in question takes place. Specifically, we look for evidence of both anticipation and adaptation by using a series of appropriate dummies in a fixed-effects regression. We concentrate on the four years preceding the event in question with respect to anticipation, and the five individual years following the event in order to identify adaptation.

For each event we consider only the first occurrence per individual that we observe within the BHPS sample period. For example, to trace out any adaptation to marriage, we follow the individual's reported well-being scores for each year during the first observed marriage spell during the duration of this spell; we drop from the sample any observations for subsequent marriage spells. We thus estimate changes in well-being for those who get married for as long as they remain married.[3] Any left-censored spells are also excluded from

[2] An alternative is to sum up the answers to the 12 questions, where the most negative answer to each question is given a value of 0 and the most positive a value of 3. This produces a 0-36 index. The regressions results using this latter scale are very similar to those presented here.

[3] This analysis of course does imply some selection, as individuals do not leave unemployment (or marriage or divorce) randomly.

the analysis (*i.e.* we have to observe the transition under consideration). This implies dropping all the individuals who are married in the first year that they are observed in the BHPS (which explains why the number of observations for the marriage analysis is much lower than that for any of the other life events).

We model both anticipation[4] and adaptation to unemployment, for example, at the same time using the regression below:

$$WB_{it} = \alpha_i + \underline{\beta}'\underline{X}_{it} + \theta_{-4}U_{-4,it} + \theta_{-3}U_{-3,it} + \theta_{-2}U_{-2,it} + \theta_{-1}U_{-1,it} + \theta_0 U_{0it} + \theta_1 U_{1it} + \theta_2 U_{2it} + \theta_3 U_{3it} + \theta_4 U_{4it} + \theta_5 U_{5it} + \varepsilon_{it} \quad (1)$$

Here, WB stands for some measure of individual well-being, and $\underline{X}$ is a vector of standard controls. To pick up adaption, we split the unemployed up into six groups: those who have been unemployed 0-1 years, 1-2 years, 2-3 years, and so on up to the last group who have been unemployed five years or more. With no adaptation, all of the values of θ_0 through to θ_5 will be roughly the same; with adaptation the later values of θ will be less negative – we will observe individuals "bouncing back" from unemployment; with complete adaptation some of the later values of θ will be insignificant. Equation (1) includes an individual fixed effect, α_i, so that we test adaptation by comparing, for example, the well-being of those who have been unemployed for 1-2 years to the well-being scores reported by the same individuals in their first year of unemployment.

Anticipation is treated similarly in the same equation. The *U* dummies referring to future entry ($U_{-4,it}$ to $U_{-1,it}$) show whether the individual will enter unemployment in the next 0-1 years, 1-2 years, 2-3 years, or 3-4 years.

The omitted category in equation (1) is thus those who will not enter unemployment (for example) in the next four years, and the estimation sample consists of all those individuals who are not unemployed in the first year that they are observed in the BHPS. The control variables in the $\underline{X}$ vector include dummies for being in employment, being in self-employment, high education, medium education,[5] age and its square, the number of children, the log of household income, two dummies for subjective health over the past 12 months (Good, and Fair to Very Poor), and a full set of 19 regional dummies and 18 year dummies. The regressions also include dummies for marital status.[6]

We should make clear that we here estimate all of the lags and leads jointly in one regression. In our

It is likely that well-being while unemployed will predict the exit rate from unemployment, for example. One key point here is that all of our estimates here are within-subject, so that if this is a level effect found at all durations it is subsumed into the individual fixed effect. Alternatively, it might be the case that those who were unhappy about unemployment (and so leave quicker) would have had a greater rise in well-being after being unemployed for one, two or more years than do those who we observe remaining unemployed. We do not have any clear idea about whether this is likely or not. Finding out would require the instrumentation of unemployment (or marriage or divorce) duration, which is beyond the scope of the current paper.

[4] Our use of the terms "anticipation" is arguably loose here. While it may be the case that the prospect of future unemployment is associated with lower current well-being, with more endogenous behaviours the causality could be reversed (lower current well-being acting as a precursor to divorce, for example).

[5] High education is defined as the highest educational qualification being at the degree or other higher level; medium education is defined as highest educational qualification being O-Levels, A-Levels or a Nursing qualification.

[6] The exact form of which depends on the research question under consideration. The regression considering the effect of adaptation to divorce does not include a divorce dummy, for example. The set of lagged divorce entry variables in equation (1) covers all observations on those who are currently divorced.

previous work (Clark *et al.*, 2008) we estimated the lag and lead equations separately. This is a valid approach to the question. However, we then plotted the estimated coefficients on one graph, and this was incorrect, as the omitted categories are not the same in the lags and leads equations. Specifically, a lag equation compares current durations of unemployment to not being unemployed at all. However, if there are significant lead effects, then not being unemployed at all will include years prior to unemployment in which the individual already experiences lower well-being. Finding that the effect of unemployment goes down to "zero" is then not synonymous with complete adaptation as this "zero" includes years in which the individual already had lower well-being due to their upcoming unemployment. This point is clearly made in Qari (2010).

Estimating lags and leads jointly avoids this misinterpretation. The clarity comes at a price of course as we now need to observe individuals both for four years prior to the event and for five years afterwards. This reduces the sample size, even in a relatively long dataset such as the BHPS. It turns out that the joint estimation of equation (1) produces empirical results that are qualitatively very similar to those from separate estimation of lags and leads (our results from such separate estimations in the BHPS can be found in Clark and Georgellis, 2010).

Table 2 summarises the number of occurrences of each event in our sample after imposing the above restrictions. These refer to the number of events that can be matched to GHQ scores, which are available at every wave of the BHPS; the number of events that can be matched to life satisfaction scores is necessarily somewhat lower. As Table 2 makes clear, the restrictions imposed by the joint estimation do yield only rather small numbers of past and future transitions that can be used in the regression analysis of current well-being.

[Table 2 about here]

4. Regression results

Table 3 summarises the key estimated coefficients on the lags and leads variables with life satisfaction as the dependent variable. The first two columns refer to the results for unemployment. The estimated leads coefficients suggest that women who will enter unemployment within the next three years report significantly (at the ten percent level) lower levels of life satisfaction; all of the estimated lead effects for men are negative and significant. At the bottom of the table, the estimated lag coefficients for men show that unemployment is generally associated with significantly lower well-being. The size and significance of these estimated coefficients (which correspond to the parameters θ_0 through θ_5 in equation (1) above) provide no evidence of quick adaptation to unemployment: unemployment starts off bad and pretty much stays bad (see also Clark, 2006). The estimated lag coefficients for women reveal a significant negative well-being effect of unemployment for at least the first two years. Due to the very small sample cell sizes, we combine unemployment of two years or more, which attracts a negative, but insignificant, coefficient. For women, there is thus no evidence of quick adaptation to unemployment, although the longer-run position remains unclear (due in part to very few observations on women who have been unemployed for two years or more).

[Table 3 about here]

The remaining columns of Table 3 present the analogous estimated lag and lead coefficients for the four other life events under consideration. For ease of reading, these results are summarised graphically in Figure 1. The dashed horizontal line corresponds to an effect of zero, representing no effect of the event on life satisfaction. The vertical bars around each point refer to the 95% confidence interval. The top two graphs in Figure 1 trace out these within-subject movements in life satisfaction around the entry into unemployment for men and women. As discussed previously, there is little evidence of habituation (although we cannot explain the small blip at around three to four years for men), and somewhat lower life satisfaction precedes the transition from employment to unemployment.

The following pair of graphs in Figure 1 refers to a positive event: marriage. As might be expected (or hoped), the correlation between marriage and life satisfaction is positive. The peak life-satisfaction effect of marriage occurs around the year that it happens. However, this well-being boost is not permanent in nature. In this data, we cannot reject the hypothesis of full adaptation to marriage, and indeed the longer-run point estimate of the relation between marriage and life satisfaction is negative for women. There is also evidence of lead effects in the two years prior to marriage for both men and women.

[Figure 1 about here]

The dynamic effect of divorce in the third set of graphs in Figure 1 is to some extent the mirror image of that of marriage. Habituation to divorce would appear to be both fairly rapid and complete. There is even mild evidence that women are more satisfied with their lives after a number of years of divorce. In any case, both sexes are in general significantly more satisfied after divorce than they were in the four years preceding divorce: there are large significant negative lead effects for both sexes.

The next event is more positive: birth of child. There is a sharp contrast here between men and women. Female life satisfaction is significantly higher three years before the birth of a child, and remains high up until birth. After birth, life satisfaction quickly reverts to its baseline level. By way of contrast, birth of a child has no discernible effect on the life satisfaction of men.[7]

The last set of results in Figure 1 refers to widowhood. Whilst for both men and women the longer-run effect is zero, or even positive, the short-run effects are large and negative (at about half a satisfaction point on the one to seven scale). There thus seems to be complete habituation to widowhood in the BHPS data, although the impact is longer-lasting for women. There are statistically significant lead effects of one or two years for both sexes.

Thus far, the results regarding adaptation in the BHPS are remarkably similar to those obtained in the

[7] The lack of a positive relationship between children and subjective well-being is commonplace in the psychological literature: see Lyubomirsky and Boehm (2010).

GSOEP data by Clark *et al*. (2008).[8] However, both of these analyses appealed to a single-item measure of well-being, overall life satisfaction. One of the advantages of the BHPS data used here is that it also contains a widely-used multiple-item measure of well-being, the GHQ-12. The empirical results in Table 4 and Figure 2 then show whether the same kind of lags and leads patterns are found using this different measure of individual well-being.

The results using the GHQ actually turn out in fact to be qualitatively very similar to those from the analysis of life satisfaction. The negative well-being effect of unemployment does not dissipate quickly for men (although we do see the same blip at durations of three to four years as noted above for life satisfaction). Men who have been unemployed for four to five years continue to report statistically significant lower GHQ scores, although the coefficient is negative but insignificant for unemployment of five or more years' duration (which only covers very few observations). For women, the negative effect of unemployment persists for at least two years. The estimated lead effects suggest that the negative impact of unemployment is anticipated for at least two years before the entry into unemployment.

[Table 4 about here]

Figure 2 summarises the GHQ findings for all five of the life events that we consider here. Overall, the results are similar to those based on the analysis of life satisfaction. For all events bar unemployment there is evidence of habituation and adaptation towards baseline levels. There are certain particular points on which the GHQ results differ somewhat from those obtained for life satisfaction in Figure 1. First, there are fewer significant marriage effects in GHQ, although the profile is the same shape for both well-being regressions. Second, the long-run effects of divorce are estimated to be positive and significant for men but negative and significant for women in the GHQ regressions; in the life satisfaction regressions both estimated coefficients were positive but insignificant.[9] Last, there is a noticeable divergence in GHQ scores for five or more years of divorce between men (positive) and women (negative).

[Figure 2 about here]

We have so far considered adaptation as pretty much binary: if the estimated coefficient after *t* years is insignificant, then we have full adaptation. We can also test for the degree of adaptation by seeing whether the well-being impact *t* years after the event is significantly different from the estimated effect at the time of the event. This will tell us about partial adaptation. It also avoids the irksome possibility of concluding that there is full adaptation simply because the estimated coefficient *t* years after the event is imprecisely estimated: in other words an insignificant estimated coefficient at t+4, say, may not be significantly different from the

[8] Even though the latter article estimated lags and leads equations separately.
[9] The sex difference in measures of satisfaction and mental stress is discussed in Nolen-Hoeksema and Rusting (1999).

significant estimated coefficient at *t*.[10]

This second test makes sense when there is a significant effect at the time of the event. For the life-satisfaction regressions, this is the case for unemployment, marriage and widowhood for both sexes, plus birth of a child for women. Divorce is something of a special case, in that the negative effects are found before the year of the divorce.

The results of these tests are that there is no adaptation to unemployment. However, the positive well-being effect of marriage essentially entirely disappears (as can be seen from the figures), as does the effect of birth of child for women: in all of these cases the longer-run coefficients are significantly different from the coefficient at the time of the event. This is also the case for the widowhood figures: immediately so for men, but only after three years for women. The results of this alternative test for adaptation are thus not much different from our (1,0) test. One case where significant coefficients persist, although at a reduced level is widowhood for women using the GHQ (see the final column of Table 4). Here the well-being effect two or more years after widowhood is estimated to be around 10-15% of the effect at the time of the event.

6. Conclusion

This paper has used eighteen waves of British panel data to examine the relationship between subjective well-being and past, contemporaneous, and future labour market and life events. We have two main conclusions.

The first is that the remarkably similar patterns of adaptation from our analysis of the BHPS data compared to those found in Clark *et al*.'s (2008) analysis of the GSOEP suggest that adaptation is a general phenomenon, rather than being only found in German data.

The second is that the BHPS allows us to compare movements in subjective well-being using both a commonly-found single-item measure (life satisfaction), and a multiple-item measure of psychological functioning (the GHQ-12). While some differences in the well-being profiles are apparent, the overall conclusion is that the profiles are qualitatively fairly similar. The phenomena of anticipation and adaptation would then seem to be fairly general, and not the preserve of any specific well-being measure.

The time profile of well-being around significant life events will likely continue to be the subject of lively research in Social Science. The research presented here has suggested that the same broad anticipation and adaptation profiles can be found in panel datasets from two different countries, and furthermore do not seem to be artificial constructs of the well-being questions used, as the same profiles are by and large found in the analysis of two very different well-being measures in the BHPS data.

While there may then be broad agreement regarding the concepts of anticipation and adaptation, almost all of the research to date has traced out average adaptation profiles. We believe that one fruitful area of research for the future would be to identify groups of individuals who adapt faster or slower to certain events. One useful recent step in this direction is Boyce and Wood (2012). The identification of different groups that

[10] We are grateful to an anonymous referee for suggesting this second test.

do better or worse in the face of significant life events not only informs us directly about the changing distribution of well-being over time, but may also provide some clues about why different groups do not adapt in the same way. While there is no clear optimal degree of adaptation (in well-being terms, we would probably like individuals not to adapt to good events, but to adapt to bad events), any adaptation that we do observe might be determined by variables that are to some extent under the control of policy-makers. The extent to which we can, and should wish to, affect the degree of adaptation to life events remains an open question.

APPENDIX A

The 12 questions used to create the GHQ-12 measure appear in the BHPS questionnaire as follows:

1. *Here are some questions regarding the way you have been feeling over the last few weeks. For each question please ring the number next to the answer that best suits the way you have felt*.

Have you recently . . .
a) been able to concentrate on whatever you're doing?

Better than usual 1
Same as usual 2
Less than usual 3
Much less than usual . . . 4

then
b) lost much sleep over worry?
e) felt constantly under strain?
f) felt you couldn't overcome your difficulties?
i) been feeling unhappy or depressed?
j) been losing confidence in yourself?
k) been thinking of yourself as a worthless person?

with the responses:
Not at all 1
No more than usual 2
Rather more than usual 3
Much more than usual 4

then
c) felt that you were playing a useful part in things?
d) felt capable of making decisions about things?
g) been able to enjoy your normal day-to-day activities?
h) been able to face up to problems?
l) been feeling reasonably happy, all things considered?

with the responses:
More so than usual 1
About same as usual 2
Less so than usual 3
Much less than usual 4

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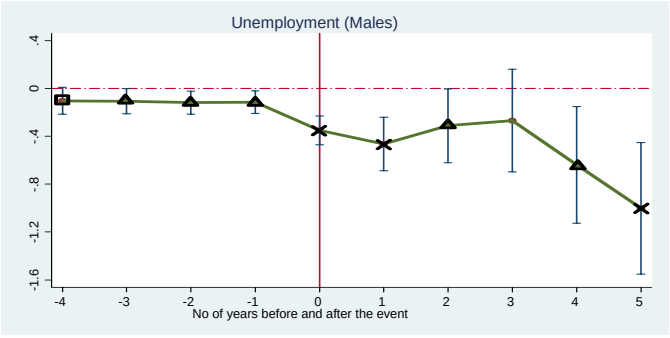
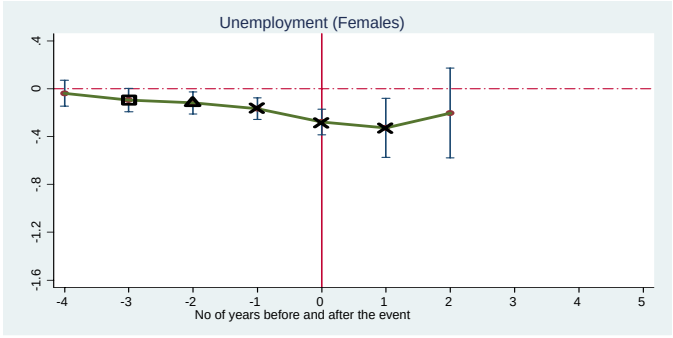
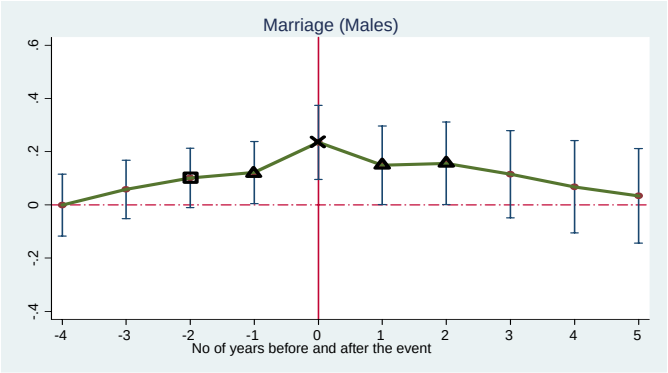
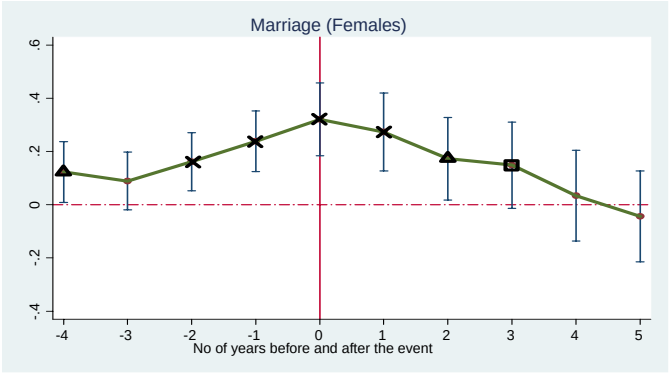
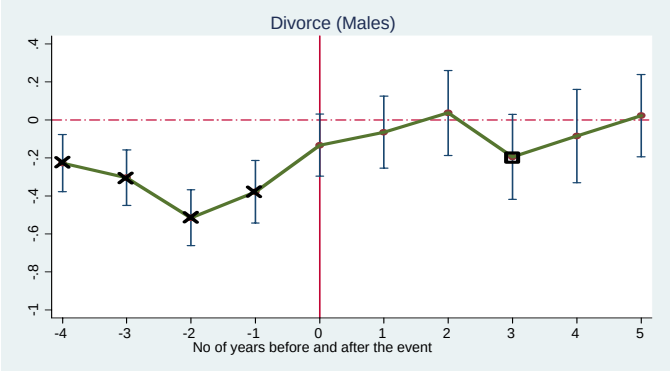
Figure 1. The Dynamic Effect of Life and Labour Market Events on Life Satisfaction

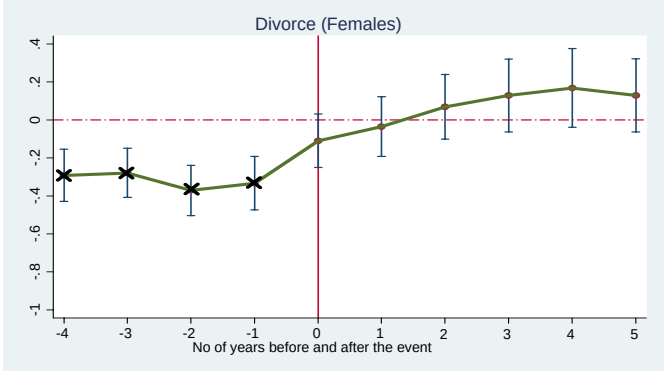


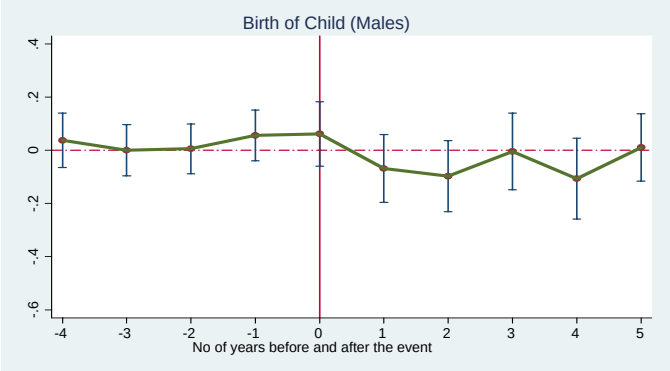


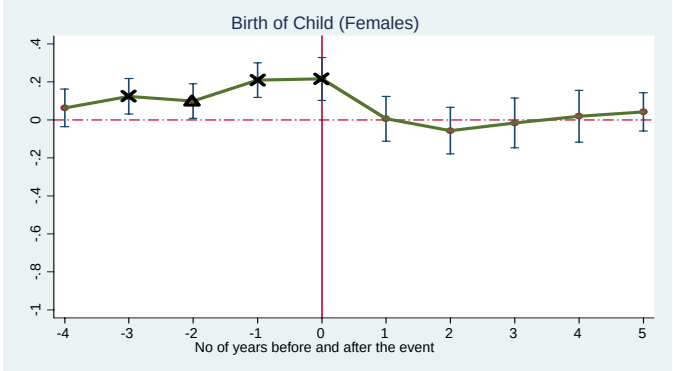


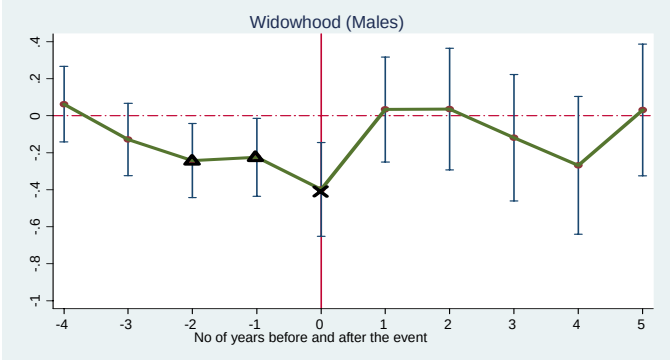












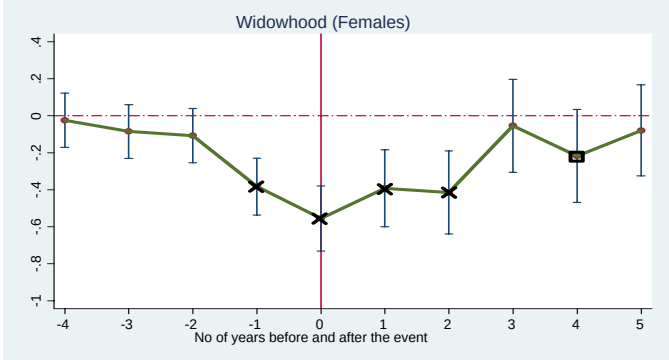
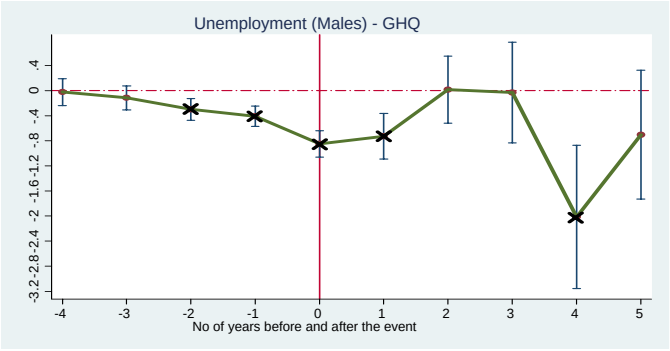
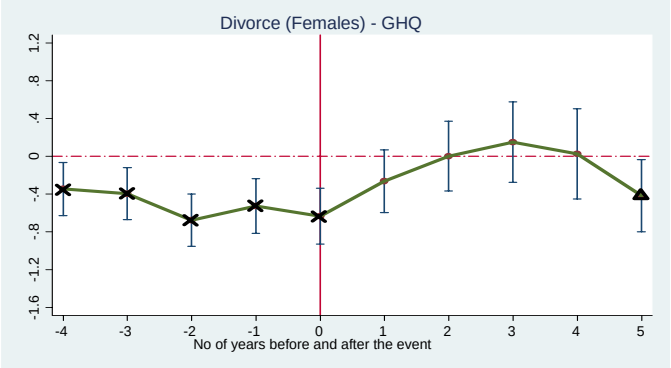
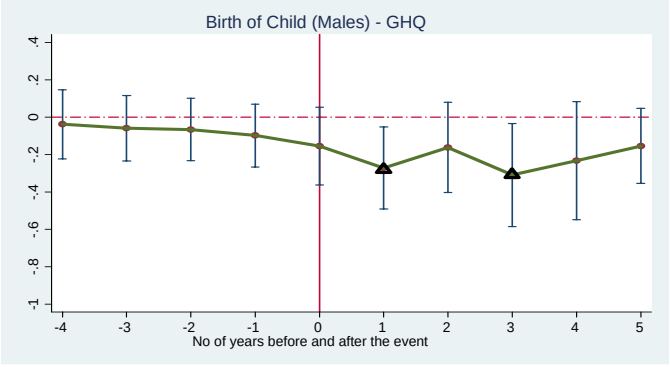
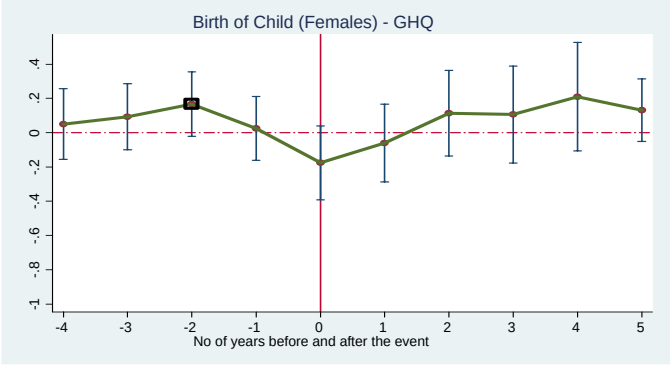


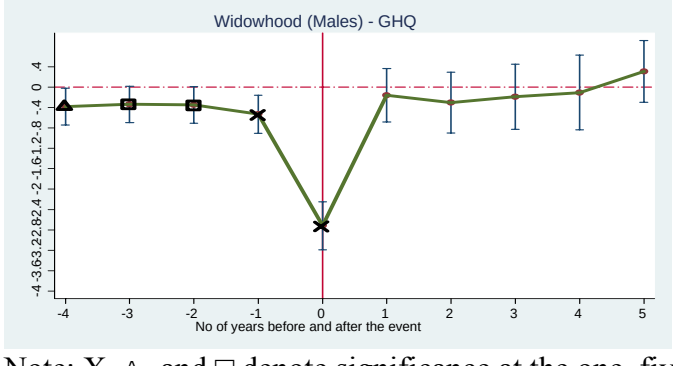
Figure 2. The Dynamic Effect of Life and Labour Market Events on GHQ well-being

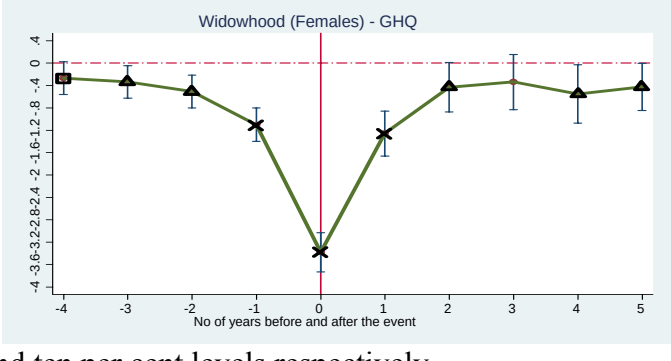












Note: X, Δ and □ denote significance at the one, five and ten per cent levels respectively.

Table 1*a*. The distribution of life satisfaction in the analysis sample of the BHPS

Life satisfaction	**Males**		**Females**	
	Count	*%*	*Count*	*%*
1	664	1.20	1037	1.59
2	1238	2.23	1563	2.40
3	3521	6.35	4270	6.56
4	7734	13.94	9838	15.27
5	18338	33.06	19624	30.15
6	18889	34.05	21224	32.61
7	5083	9.16	7423	11.41
Total	55467	100.00	64859	100.00

Note: These numbers refer to the sample aged 16-60.

Table 1*b*. The distribution of the GHQ-12 measure of well-being in the analysis sample of the BHPS

GHQ-12	**Males**		**Females**	
	Count	*%*	*Count*	*%*
0	968	1.24	2004	2.21
1	759	0.97	1574	1.73
2	786	1.01	1697	1.87
3	981	1.26	1807	1.99
4	1138	1.46	2042	2.25
5	1381	1.77	2413	2.66
6	1851	2.37	2797	3.08
7	2333	2.99	3380	3.72
8	2952	3.78	4189	4.61
9	4035	5.17	5517	6.07
10	6138	7.86	7669	8.44
11	11145	14.27	12179	13.40
12	43641	55.87	43608	47.99
Total	78108	100.00	90876	100.00

Note: These numbers refer to the sample aged 16-60; higher figures indicate better levels of psychological functioning.

Table 2. The Number of Lags and Leads Observations

	Unemployment		**Marriage**		**Divorce**		**Birth of Child**		**Widowhood**	
	Males	*Females*	*Males*	*Females*	*Males*	*Females*	*Males*	*Females*	*Males*	*Females*
Leads										
3-4 Years hence	477	615	542	655	266	401	693	848	162	355
2-3 Years hence	657	809	677	851	296	469	908	1144	184	392
1-2 Years hence	970	1072	879	1104	365	555	1248	1502	204	456
Within the next year	1466	1471	1189	1400	482	753	1647	2023	223	546
Lags										
0-1 Years	657	675	663	791	248	421	1098	1414	102	294
1-2 Years	167	108	558	654	164	321	917	1198	81	221
2-3 Years	73	26	467	543	123	253	624	845	61	178
3-4 Years	31	8	400	462	93	183	393	566	53	138
4-5 Years	15	3	329	385	77	141	267	407	38	122
5 or more Years	28	1	1105	1386	219	380	1133	2775	95	385

Note: The number of events is calculated for those aged 16-60, with the exception of birth of child, based on the sample of those aged 16-40 and widowhood which is based on a sample of 16-80 year-olds.

Table 3. The Effect of Life and Labour Market Events on Life Satisfaction. Fixed Effect "Within" Regressions.

	Unemployment		Marriage		Divorce		Birth of Child		Widowhood	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
3-4 Years hence	-0.103+	-0.038	-0.001	0.123*	-0.227**	-0.293**	0.037	0.063	0.062	-0.025
	(0.057)	(0.055)	(0.059)	(0.058)	(0.076)	(0.070)	(0.052)	(0.051)	(0.104)	(0.075)
2-3 Years hence	-0.107*	-0.095+	0.058	0.089	-0.305**	-0.279**	0.000	0.123**	-0.128	-0.085
	(0.053)	(0.050)	(0.056)	(0.055)	(0.075)	(0.066)	(0.049)	(0.048)	(0.100)	(0.074)
1-2 Years hence	-0.119*	-0.119*	0.101+	0.162**	-0.516**	-0.371**	0.006	0.099*	-0.243*	-0.107
	(0.049)	(0.047)	(0.057)	(0.056)	(0.075)	(0.068)	(0.048)	(0.047)	(0.102)	(0.075)
Within the next Year	-0.115*	-0.167**	0.122*	0.239**	-0.379**	-0.333**	0.056	0.209**	-0.225*	-0.383**
	(0.048)	(0.046)	(0.060)	(0.058)	(0.084)	(0.072)	(0.049)	(0.046)	(0.107)	(0.079)
0-1 Years	-0.350**	-0.279**	0.235**	0.321**	-0.133	-0.110	0.061	0.216**	-0.398**	-0.555**
	(0.061)	(0.055)	(0.071)	(0.070)	(0.083)	(0.072)	(0.062)	(0.058)	(0.129)	(0.090)
1-2 Years	-0.464**	-0.326**	0.149*	0.273**	-0.064	-0.035	-0.068	0.006	0.034	-0.393**
	(0.114)	(0.126)	(0.075)	(0.075)	(0.097)	(0.080)	(0.065)	(0.060)	(0.145)	(0.106)
2-3 Years	-0.312*		0.157*	0.173*	0.037	0.069	-0.097	-0.057	0.036	-0.416**
	(0.157)		(0.079)	(0.079)	(0.114)	(0.087)	(0.068)	(0.063)	(0.168)	(0.115)
3-4 Years	-0.268		0.115	0.149+	-0.195+	0.128	-0.005	-0.016	-0.119	-0.055
	(0.219)		(0.083)	(0.083)	(0.114)	(0.098)	(0.074)	(0.067)	(0.174)	(0.128)
4-5 Years	-0.639*		0.068	0.035	-0.084	0.168	-0.107	0.019	-0.269	-0.218+
	(0.249)		(0.089)	(0.087)	(0.125)	(0.106)	(0.078)	(0.070)	(0.190)	(0.128)
5 or more Years	-1.002**		0.034	-0.044	0.022	0.129	0.010	0.042	0.031	-0.079
	(0.280)		(0.091)	(0.087)	(0.111)	(0.099)	(0.065)	(0.051)	(0.182)	(0.125)
2 or more Years		-0.203								
		(0.192)								
R^2	0.04	0.02	0.04	0.03	0.04	0.03	0.04	0.03	0.03	0.02
N	23,254	29,550	12,571	15,165	23,342	28,049	13,182	16,474	30,429	36,200

Notes: Standard errors in parentheses; + significant at 10%; * significant at 5%; ** significant at 1%; other controls include marital status, labour-force status, health, education, number of children, age, household income, region and year dummies. The analysis of adaptation to unemployment drops the single "unemployed" dummy, as it is multicollinear with the dummies for unemployment duration. The same applies for the "married", "divorced" and "widowed" dummies in the respective adaptation regressions.

Table 4. The Effect of Life and Labour Market Events on GHQ. Fixed Effect "Within" Regressions.

	Unemployment		Marriage		Divorce		Birth of Child		Widowhood	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
3-4 Years hence	-0.025	-0.047	0.074	0.134	-0.438**	-0.346*	-0.038	0.050	-0.381*	-0.269+
	(0.109)	(0.117)	(0.107)	(0.123)	(0.148)	(0.144)	(0.094)	(0.105)	(0.184)	(0.150)
2-3 Years hence	-0.117	-0.140	0.016	-0.056	-0.366*	-0.397**	-0.059	0.093	-0.337+	-0.336*
	(0.098)	(0.107)	(0.103)	(0.118)	(0.147)	(0.140)	(0.089)	(0.098)	(0.181)	(0.149)
1-2 Years hence	-0.302**	-0.378**	0.079	0.185	-0.965**	-0.677**	-0.066	0.167+	-0.345+	-0.506**
	(0.088)	(0.100)	(0.101)	(0.115)	(0.147)	(0.141)	(0.085)	(0.096)	(0.183)	(0.150)
Within the next Year	-0.409**	-0.599**	0.128	0.278*	-0.651**	-0.528**	-0.098	0.025	-0.530**	-1.101**
	(0.083)	(0.096)	(0.102)	(0.118)	(0.160)	(0.148)	(0.086)	(0.095)	(0.191)	(0.153)
0-1 Years	-0.851**	-0.939**	0.207+	0.321*	-0.262	-0.634**	-0.155	-0.176	-2.719**	-3.381**
	(0.107)	(0.116)	(0.122)	(0.143)	(0.163)	(0.151)	(0.106)	(0.110)	(0.241)	(0.180)
1-2 Years	-0.727**	-0.970**	0.042	0.134	0.541**	-0.264	-0.272*	-0.060	-0.156	-1.258**
	(0.186)	(0.272)	(0.131)	(0.154)	(0.193)	(0.170)	(0.112)	(0.116)	(0.268)	(0.205)
2-3 Years	0.012		-0.108	0.058	0.467*	0.001	-0.162	0.114	-0.303	-0.431+
	(0.273)		(0.141)	(0.165)	(0.221)	(0.189)	(0.123)	(0.128)	(0.305)	(0.225)
3-4 Years	-0.032		-0.119	-0.045	0.277	0.149	-0.310*	0.106	-0.186	-0.339
	(0.409)		(0.151)	(0.177)	(0.248)	(0.217)	(0.141)	(0.144)	(0.326)	(0.251)
4-5 Years	-2.014**		0.034	0.028	-0.259	0.027	-0.233	0.210	-0.106	-0.552*
	(0.582)		(0.164)	(0.190)	(0.271)	(0.244)	(0.161)	(0.162)	(0.374)	(0.266)
5 or more Years	-0.705		-0.107	0.003	0.391+	-0.418*	-0.154	0.131	0.310	-0.425*
	(0.524)		(0.152)	(0.172)	(0.212)	(0.195)	(0.103)	(0.093)	(0.309)	(0.216)
2 or more Years		-0.439								
		(0.470)								
R^2	0.03	0.04	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.04
N	37,923	47,927	19,426	23,071	38,256	45,556	22,244	27,366	49,384	58,015

Notes: Standard errors in parentheses; + significant at 10%; * significant at 5%; ** significant at 1%; other controls include marital status, labour-force status, health, education, number of children, age, household income, region and year dummies. The analysis of adaptation to unemployment drops the single "unemployed" dummy, as it is multicollinear with the dummies for unemployment duration. The same applies for the "married", "divorced" and "widowed" dummies in the respective adaptation regressions.