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Measuring the impact of major life events upon happiness

Dimitris Ballas* and Danny Dorling

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Background In recent years there have been numerous attempts to define and measure happiness in various contexts and pertaining to a wide range of disciplines, ranging from neuroscience and psychology to philosophy, economics and social policy. This article builds on recent work by economists who attempt to estimate happiness regressions using large random samples of individuals in order to calculate monetary 'compensating amounts' for different life 'events'.

Methods We estimate happiness regressions using the 'major life event' and 'happiness' data from the British Household Panel Survey.

Results The data and methods used in this article suggest that in contrast to living states such as 'being married', it is more events such as 'starting a new relationship' that have the highest positive effect on happiness. This is closely followed by 'employment-related gains' (in contrast to employment status). Also, women who become pregnant on average report higher than average levels of subjective happiness (in contrast to 'being a parent'). Other events that appear to be associated with happiness according to our analysis include 'personal education-related events' (e.g. starting a new course, graduating from University, passing exams) and 'finance/house related events' (e.g. buying a new house). On the other hand, the event that has the highest negative impact upon happiness according to our analysis is 'the end of my relationship' closely followed by 'death of a parent'. Adverse health events pertaining to the parents of the respondents also have a high negative coefficient and so does an employment-related loss.

Conclusion The analysis presented in this article suggests that what matters the most in people's lives in Britain is to have good dynamic interpersonal relationships and to be respected at work with that respect being constantly renewed. These 'goods' are as much reflected through dynamic events as static situations. Relationships at work appear to be of a similar order of importance to those at home. Other factors that contribute to higher than average levels of subjective happiness, at least at a superficial level, include delaying death and keeping illness at bay, having babies, buying homes and cars and passing exams. The analysis presented here also suggests that people should not expect too much from their holidays and wider families. The findings presented in this article may help us to understand a little better the propensity for groups to be more or less happy and may help us to begin to better understand the importance of the dynamics of social context—the context in which we come to terms with reward and loss.

Keywords Happiness, well-being, major life events, British household panel survey

Introduction

Human perceptions of happiness vary and depend on a wide range of factors. Efforts to define and understand happiness date back long ago to include, for instance,

Department of Geography, The University of Sheffield, Winter Street, Sheffield S10 2TN, UK.

* Corresponding author. Department of Geography, University of Sheffield, Winter Street, Sheffield S10 2TN, UK. E-mail: d.ballas@sheffield.ac.uk

Buddhist traditions and practices. However, the origins of western thought in this area can be found only a few decades later than Buddhist scripts in the work of Socrates, Plato and Aristotle. In particular, Aristotle, in his work Nicomachean Ethics, attempted to give an answer to the question: what is the good life for man?[1,2] For Aristotle (born almost exactly a century after Gautama Buddha died), happiness is the highest good achieved by human action. Aristotle suggested that the attainment of happiness involves the satisfaction of the human desires that are necessary to live a full and rich life.[1] However, Aristotle believed that the question of what is a full and rich life cannot be answered for an individual in abstraction from the society in which they live, in contrast to some Buddhist traditions. The meaning of happiness varies through space and time and there have been numerous attempts to understand and define happiness since the work of Aristotle. Attempting to determine the factors that make individuals happy has long been represented as a research challenge that spans many academic disciplines. There have been numerous recent studies of happiness and well-being issues, often from very different perspectives. On the one hand there are critiques of the idea that happiness can be measured such as by Sumner[3] who argues that happiness is subjective and that no objective theory about the ordinary concept of happiness has the slightest plausibility. Nevertheless, there have been several researchers who suggested that happiness can be measured[4–7] and should be measured,[8] and there has been an ongoing debate over how to measure it.[9–11]

In an epidemiological context, it would be of practical use to have good measurements of happiness and well-being and to be able to also determine what the key psychosocial and environmental factors affecting well-being are. Amongst these factors are major events and experiences that occur throughout the life course. Such events have often been classified on the basis of their association with depression and ill-health and of how stressful they are in various contexts.[12–17] Cumulative exposure to 'negative' major life events throughout the life course may be linked to increased risks of chronic unhappiness, mental illness and premature mortality.[18] In contrast, cumulative lifetime exposure to 'positive' major life events may be associated with increased probabilities of sustained happiness, good health and well-being.[19]

Recent research reported in this journal[20] aimed at measuring the importance of different life events expressed in the form of money, in determining personal happiness, using data from the British Household Panel Survey (BHPS), a representative sample of some 10 000 individuals living in Britain in the 1990s (see Taylor *et al*.[21] for more details). This survey includes a question that asks whether the respondents have been recently unhappy or depressed, and a number of the straightforward questions that seek to measure individual contentment such as whether respondents feel 'able to enjoy normal day-to-day activities'; whether they 'have been losing self-confidence'; whether 'they are losing sleep over worry'.

Clark and Oswald[20] fitted regression models of happiness that measured the impact of different life events upon human well-being. In particular, using pooled data from the first seven waves of the BHPS (1991–97), they defined an occurrence of a 'life event' as a change between different states such as 'single' to 'married', 'employed' to 'unemployed' and 'health excellent' to 'health good'. They then estimated ordered probit regression equations, with measures of subjective well-being as their dependent variables and 'life event' (state change) dummy variables as well as monthly income as their independent variables and they used these equations to estimate the 'compensating amounts' for various changes of states. For instance, they estimated that a change between a state of having 'Excellent Health' to having 'Good Health' was equivalent to losing, on average, £12 000 a month in income.

This article builds on the work of Clark and Oswald[20] and complements the work of Oswald and Powdthavee[22] by investigating further the potential of the BHPS to measure the impact of life events on happiness. However, we do not attempt to attach monetary values to life states. Instead, this article focuses on BHPS variables that explicitly pertain to 'life events' for a similar time period to that examined by Clark and Oswald. In particular, the so called 'Major Life Event' BHPS data (see appendix of this article and Taylor *et al*.[21] for a detailed description of all event categories) were utilized in order to investigate the degree to which these events affect subjective well-being by using simple cross-tabulations of 'Major Life Events' and 'Subjective Happiness'. A multiple regression equation was also fitted on the 'Major Life Event' data in order to measure the relative importance of different events in relation to subjective happiness.

Data and method: examining happiness and major life events in the BHPS

Between September 1992 and December 1995, members of the BHPS were asked to: 'state in your own words what in the last year has happened to you (or your family) which stood out as important'. Up to four events were recorded on up to four occasions in four consecutive years (1992, 1993, 1994 and 1995). [This question was discontinued in 1996 but was then asked again in 1999, 2001 and 2004. In the context of this article, we focused on the years when the question was asked consecutively (1992–95), which also represent a relatively similar period to that examined by Clark and Oswald (1991–97).] These were coded as 80 types of event that were placed by us into the following categories:

- Health related events
- Education
- Employment
- Leisure
- Births and Deaths
- Relationships
- Finance and Other

In addition, each of these events related to 21 possible subjects (see Appendix). For instance, one of the events was coded as: 'my mother' (subject 8) 'passed her driving test' (event 32).

In the context of this article, different combinations of 'major life events' and 'event subjects' have been explored in order to define a smaller number of more 'statistically manageable' events. It should be noted that in practise, of the 1680 possible events only 34 combinations accounted each for more than 1% of all recorded events and so an aggregation of major life events

to these 34 combinations is used here. Table 1 lists these 34 combinations of 'major life events' and 'subjects'.

In order to explore the possible relationship between different events and subjective well-being, we used the following ' "GHQ: General Happiness' BHPS question: 'Have you recently been feeling reasonably happy, all things considered?' with the responses: 'More so than usual', 'Same as usual', 'Less so' and 'Much less'. For the purposes of exploring the impact of different variables upon happiness, it was more meaningful to aggregate the third and fourth responses, so we recoded these into one category entitled 'Less so than usual'. We also reversed the scores, so that higher values indicate 'higher happiness'. We then used the data from the years in which the event data discussed above were also collected (1992–95) in order to explore the impact of our 34 'Major Life Events' (Table 1) upon subjective happiness. Table 2 gives an indication of what these relationships might be. In particular, it shows how average happiness levels, measured on the 1–3 scale varies across different events.

Results

As can be seen in Table 1, according to the data most survey respondents are likely to report that there were no major life events in the previous year: 'nothing important happened' makes up 66.12% of all 'events'. Next most commonly occurring are events that can be labelled: 'Finance and other'; and then 'Relationships' events that make up 6.49 and 6.02% of the total number of recorded events, respectively.

It should be noted that the frequency of the various 'major life events' described in Table 1 vary considerably across different age groups. Figure 1 shows this variation by single year of age group for events in each of the eight categories

Table 1 'Major life event' and 'subject' combinations; BHPS waves 1992–95 (pooled)

Description of event combination	Frequency	Frequency (%)
Nothing important happened	94 911	66.12
Health related events		
Health 1–9[a] (other[b])	991	0.69
Health 1–9 (mine)	2678	1.86
Health 1–9 (partner)	755	0.52
Health 1–9 (child)	620	0.43
Health 1–9 (parent)	648	0.45
Subtotal	5692	3.96
Education		
Education (other)	903	0.63
Education (mine)	2185	1.52
Education (child)	1828	1.27
Subtotal	4916	3.42
Employment		
Employment (other)	1808	1.26
Employment (job change)	2615	1.82
Employment (job gain)	1143	0.79
Employment (job loss)	1370	0.95
Subtotal	6936	4.82
Leisure		
Leisure (other)	1824	1.27
Leisure (our holiday)	1223	0.85
Leisure (my holiday)	3635	2.53
Subtotal	6682	4.64
Births and deaths		
Pregnancy/birth (other)	97	0.07
Pregnancy/birth (mine)	1284	0.89
Pregnancy/birth (child's)	1309	0.91
Pregnancy/birth (family)	1264	0.88
Death (other)	384	0.27
Death (parent)	708	0.49
Death (family)[c]	1674	1.16
Subtotal	6720	4.67
Relationships		
Relationships (family 35, 41–42)	988	0.69
Relationships (mine starting 35, 42)	1597	1.11
Relationships (child's starting 35, 42)	830	0.58
Relationships (mine ending 36, 43)	637	0.44
Relationships family (46–53, 55–59)	3728	2.59
Relationships (pet ownership/ companionship 54)	560	0.39
Subtotal	8661	6.02
Finance and other		
Finance (other 60–69, 73–79)	2563	1.78
Finance (car 70)	973	0.68
Finance (house 71)	772	0.54
Moving home (44, 80–81)	2810	1.95
Other event (10–11, 32–34, 37–39, 90–95)	2224	1.55
Subtotal	9342	6.49
Total number of recorded events*	143 860	

*The total number of recorded events include all reported 1st, 2nd, 3rd and 4th important life events. Respondents were asked to list all events in order of importance. In the cases when respondents only reported at least one important event but not all four, we assumed that the rest of the events were equivalent to the 'nothing important happened' category. (e.g. if an individual reported 'employment, job change' as the 1st important life event, but did not report any other events, we recorded the rest of the event responses as 'nothing important happened').

[a]'1–9' and all other numbering in this table refer to the major life event categories, as coded by the BHPS and described in the Appendix.

[b]'Other' meaning any person or subject other than 'mine', 'partner', 'child' (e.g. it could be 'friend/colleague/neighbour/employer' or 'grandparents etc; see Appendix for more details).

[c]Note that thankfully too few children in the BHPS died in these years for enough of their parents to record the event for us to include in this analysis. Results not reported here, however, do suggest that death of a child or grand child is extremely traumatic and future research using more years of life histories should examine this further.

Table 2 Major life events and happiness; BHPS waves 1992–1995 (pooled)

Event	Subjective General Happiness (%)			
	Less so than	As usual	More so than	TOTAL
Nothing important happened	13	74	13	100
Health (other[a] 1–9[b])	18	70	12	100
Health (mine 1–9)	22	68	10	100
Health (partner 1–9)	17	75	8	100
Health (child 1–9)	18	73	9	100
Health (parent 1–9)	25	61	14	100
Education (other 12–19)	11	74	15	100
Education (mine 12–19)	13	62	25	100
Education (child 12–19)	15	73	12	100
Employment (other 23, 26–29)	18	64	18	100
Employment (job change 20–21)	12	68	20	100
Employment (job gain 22)	10	67	23	100
Employment (job loss 24)	24	64	12	100
Leisure (other 30-31)	10	73	17	100
Leisure (our holiday 30)	11	76	13	100
Leisure (my holiday 30)	11	74	15	100
Pregnancy/birth (other 40)	17	64	19	100
Pregnancy/birth (mine 40)	12	64	24	100
Pregnancy/birth (child's 40)	10	78	12	100
Pregnancy/birth (family 40)	11	71	18	100
Death (other 45)	23	66	11	100
Death (parent 45)	26	66	8	100
Death (family 45)	20	69	11	100
Relationships (family 35, 41–42)	12	70	18	100
Relationships (mine starting 35, 42)	11	56	33	100
Relationships (child's starting 35, 42)	11	76	13	100
Relationships (mine ending 36, 43)	32	48	20	100
Relationships (family, 46–53, 55–59)	14	73	13	100
Relationships (pet ownership/companionship 54)	17	68	15	100
Finance (other 60–69, 73–79)	15	70	15	100
Finance (car 70)	10	72	18	100
Finance (house 71)	9	66	25	100
Moving home (44, 80–81)	14	68	18	100
Other event (10–11, 32–34, 37–39, 90-95)	16	68	16	100
Population mean levels	13	73	14	100

[a]See Appendix for a detailed description of all subject codes.

[b]See Appendix for a detailed description of all event category codes.

described in that table. There are many notable patterns in Figure 1, for instance, the tendency of younger people to report 'education' related events as major, whereas older people tend to report 'health' related events. People of an age likely to be parents of school age children also have a higher than average interest in education. Many events that matter to folk are not those that immediately affect them but those that affect people they care about and/or for (or who care for them).

Table 2 shows how subjective happiness levels vary across different events and which events are characterized by higher than average levels of 'happiness' or 'unhappiness'. For instance, 32% of the observations that recorded 'relationship mine ending' as a major life event also record subjective happiness, which is 'less so than usual' (relationships ending are generally a source of unhappiness but for a smaller but quantifiable group the end of the relationship is reason for celebration). The respective figure for average unhappiness of those that recorded 'death of a parent' as a major life event is 25% (perhaps most of these deaths occurred at a time that was more predictable than are the demise of most partnerships). On the other hand, 33% of the people that recorded the start of a personal relationship as a major life event also record 'more than usual' levels of subjective happiness (in this case, its interesting how many are sanguine). In addition, 25% of the folk that record 'education, mine' as a major life event report 'more than usual' levels of happiness. It is also interesting to note that 'pregnancy/birth, other' is associated with relatively high rates of both 'happiness' (19% of 'more than usual') and 'unhappiness' (17% of 'less than usual', possibly expressing unwanted pregnancies or post-natal depression, and often of people's grown up children being pregnant, perhaps cementing a relationship with an off-spring's partner that the parents had hoped would end).

In order to evaluate the effect of the events described in Tables 1 and 2 upon happiness, we employed the statistical tool of ordinary least squares (OLS) multivariate regression, building on the work of Clark and Oswald briefly reviewed in the previous section. It should be noted though that, unlike Clark and Oswald, we fitted an OLS model (instead of ordered probits) on data pertaining to changes of state—events—that respondents themselves declare as important (instead of differences in state) and we did not attempt to assign a monetary value upon different events (and hence we did not include an income variable in the analysis). Table 3 summarizes the results of the OLS regression analysis (listing the life event regression coefficients in ascending order). High negative values imply an association of the event with 'unhappiness', whereas high positive values indicate that an event has an association with 'happiness'. As can be seen in Table 3, the event 'the end of my relationship' has the highest negative coefficient and therefore according to the BHPS data and the method used here, it has the highest positive association with 'unhappiness'. This is followed by 'death of a parent' and the effect upon the individual of health events pertaining to the parents of the respondents. A 'death of some other person' (not family member) also has a high negative coefficient and so does an employment-related loss (e.g. being made redundant or experiencing a pay cut). Note that, as stated earlier, we only considered events that when aggregated, accounted for more

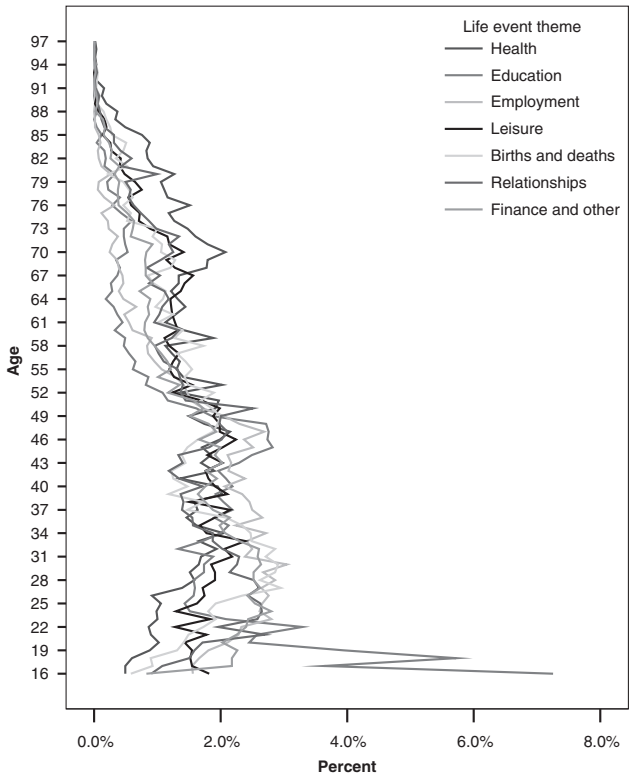

Figure 1 Life event themes and age

than 1% of all recorded events. By using this aggregation, major events such as 'death of a child'—which accounted for <1% of all events—were subsumed in the 'death in family' overall category.

The events listed in the bottom of Table 3 have the highest positive coefficients and therefore can be considered to have a relatively high association with 'happiness'. 'starting a new relationship' has the highest positive coefficient and this is closely followed by 'employment-related gain' (e.g. a new job, or a promotion or pay rise) and 'financial, house related events' (e.g. buying a new house). Other events that appear to be associated with happiness according to our analysis include pregnancies and 'personal education-related events' (e.g. starting a new course, graduating from university, passing exams).

The regression model takes into account the frequency of the different events and this is expressed to a degree through the '*P*-values' (second column in Table 3)—infrequent life events with unpredictable consequences are less likely to show effects with small *P*-values. However, it is useful at this stage to combine the frequency data presented in Table 1 with the regression results of the rough importance of an event in order to give prominence to events that both matter (have a not insignificant effect), and which are more likely to happen in people's lives (and also more likely to be reported as 'major life events'). For example, it is interesting to note that there were 1597 events (1.11% of total events) described as 'relationship, mine, starting', which as seen in Table 3, has the highest regression coefficient and can therefore be considered to be the (aggregate) life event type that is most associated with happiness. In addition, the event with the second highest positive coefficient ('employment, job gain') was reported 1143 times (0.79% of all major life events). It is noteworthy that the top 10 events in terms of positive regression coefficients were reported 14 283 times in the survey (10.32% of all events). On the other hand, the event with the highest negative coefficient ('end of my relationship') was reported 637 times in the survey (0.44% of the total). The event with the second highest negative coefficient ('death of a parent') was reported 708 times (0.49% of the total). The top 10 events with the highest negative coefficient were reported 10 465 times (7.29% of all major life events). People may thus, presumably be a little averse to report bad news in social surveys. As many relationships have to end as start, albeit some that last long—only through death.

It is interesting to see how the life events would be ranked if their prevalence were taken into account. The fifth column of Table 3 shows how the life events would be ranked if the overall impact on population happiness is taken into account, by multiplying the frequency of events (second column in Table 1) by the regression coefficient (first column in Table 3). When ranked in this way, the event category 'nothing important happened' is on top (compared with 14th place in the regression coefficient-based rank). This 'event' category has a very low regression coefficient but also has the highest frequency. Thus, it can be argued that the slow, mundane aspects of most of everyday existence, when nothing of interest happens, have one of the highest negative impacts on our happiness. Comparing columns 4 and 5 in Table 3, it is also interesting to note that there is a considerable shift in the order of the events associated with unhappiness. Events pertaining to personal health problems ('health, mine') are, when ordered by magnitude in this way, on top of the list, followed by 'employment, job loss' and 'death of a family member'. 'End of my relationship', which has the highest negative regression coefficient is the 6th event when ordered by magnitude. Looking at the events in the bottom of the alternative prevalence-based regression rank, it is also interesting to note that events pertaining to a new personal relationship ('relationships, mine starting') still have the highest positive position even when measured as the product of frequency and regression coefficient (life is not as simple as the song lyric 'all you need is love', but love gets you most happiness in the short-term). New social/emotional relationships are followed in happiness rankings by new school/collegiate friends and challenges 'education, mine starting', and then the same for the slightly less best-days-of-your-life world of new work: 'employment, job gain'.

Discussion

The results presented in this article can be used to paint a picture of the life events that superficially matter the most in people's lives. Our analysis suggests that in British society by the end of the 20th century personal relationships were extremely important in terms of happiness. In short, the analysis presented in this article suggests that what matters the most in British people's lives is to have good interpersonal relationships (to be respected and cared for at home) and to be respected at work. Respect in work is shown best by promotion and events related to that that we have similarly coded.

Table 3 OLS regression equation of subjective happiness and major life events. (Adjusted for gender, age, age squared and education) BHPS waves 1992–95 (pooled and weighted on the basis of the 1995 cross-sectional weights; note that the value of the constant is 2.25)

Life Event	Coefficient	*P*-value[a]	Frequency (%) × Regression coefficient	Original regression rank	Prevalence-based regression rank
Relationships (mine[b] ending 36, 43[c])	−0.178	0.00	−0.08	1	6
Death (parent, 45)	−0.166	0.00	−0.08	2	5
Health[d] parent (1–9)	−0.139	0.00	−0.06	3	7
Death (other 45)	−0.137	0.00	−0.04	4	11
Employment job loss 24	−0.129	0.00	−0.12	5	3
Health mine (1–9)	−0.117	0.00	−0.22	6	2
Death (family 45)	−0.098	0.00	−0.11	7	4
Health partner (1–9)	−0.092	0.00	−0.05	8	9
Health child (1–9)	−0.084	0.00	−0.04	9	13
Health other (1–9)	−0.073	0.00	−0.05	10	8
Education child (12–19)	−0.029	0.12	−0.04	11	12
Employment other (23, 26–29)	−0.028	0.13	−0.04	12	15
Other event (10–11, 32–34, 37–39, 90–95)	−0.026	0.14	−0.04	13	10
Nothing important happened	−0.022	0.11	−1.47	14	1
Relationships (pet ownership/companionship 54)	−0.020	0.44	−0.01	15	17
Finance (other 60–69, 73–79)	−0.019	0.27	−0.03	16	16
Relationships family (46–53, 55–59)	−0.014	0.39	−0.04	17	14
Relationships (family 35, 41–42)	0.002	0.91	0.00	18	18
Leisure (our holiday 30)	0.010	0.61	0.01	19	20
Moving home (44, 80–81)	0.013	0.46	0.02	20	24
Education other (12–19)	0.024	0.27	0.02	21	21
Finance (car 70)	0.027	0.22	0.02	22	22
Leisure (my holiday 30)	0.029	0.07	0.07	23	30
Pregnancy/birth (other 40)	0.031	0.56	0.00	24	19
Pregnancy/birth (family 40)	0.034	0.09	0.03	25	25
Relationships (child's starting 35, 42)	0.037	0.10	0.02	26	23
Employment job change (20–21)	0.040	0.02	0.07	27	29
Leisure (other 30–31)	0.043	0.02	0.05	28	28
Education mine(12–19)	0.052	0.00	0.08	29	33
Pregnancy/birth (child's 40)	0.053	0.01	0.05	30	26
Pregnancy/birth (mine 40)	0.084	0.00	0.08	31	31
Finance (house 71)	0.097	0.00	0.05	32	27
Employment job gain 22	0.097	0.00	0.08	33	32
Relationships (mine starting 35, 42)	0.160	0.00	0.18	34	34

[a]Note 0.00 means ''less than 0.005''.
[b]See Appendix for a detailed description of all subject codes.
[c]See Appendix for a detailed description of all event category codes.
[d]Health-related events include 'negative' (e.g. injury) as well as 'positive' events (e.g. recovery, positive test results); the same applies to many of the other variables listed here; see Appendix for more details.

Over love—it is easy to recognize that interpersonal relationships are good when they are new. Many in happy relationships may well adapt to seeing that state as normal. However, our methods will not effectively measure long-lasting happiness when relationships do not change other than very obliquely through the general negative reporting of 'nothing changing'. What the research presented in this article has hopefully provided is instead an initial suggestion, of which dynamic events appear to matter most in people's lives and some idea of to whom and where those events are most likely to occur. It can be argued that the findings presented here may help us to understand the propensity for groups to be more or less happy, better or worse-off, made more or less ill through sustained worry or cumulative good fortune.

The findings appear to be consistent with much recent research on happiness, but they hopefully add some more

concrete examples to that work and further clues as to the proximal mechanisms involved. For instance, the importance of interpersonal relationships is consistent with relevant research findings highlighting the importance of social well-being[23] as well as social trust and local community networks to our quality of life[24] and suggesting that friendship is one of the biggest sources of happiness and well-being.[25,26] The strength of the importance of employment is unexpected but is consistent with new theories of the importance of respect and self-esteem in societies in general.[27] It can also be argued that the negative impact of the 'nothing happened' event category is consistent with arguments made by Bauman,[28] according to which in modern materialistic societies being bored, in addition to making one feel uncomfortable, is also turning into a shameful stigma and a testimony of negligence or defeat, which may lead to a state of acute depression.

Instead of the GHQ, there are a number of alternative measures of happiness and subjective well-being in the BHPS that could be used as a dependent variable in the regression model described above. In the context of this research, we explored these measures and re-fitted the regression equations in order to examine whether there were any differences in the results.

It is also interesting to compare the relative importance of the 34 life event variables with that of the variables examined by Clark and Oswald.[20] In order to do so, we added the following variables to the regression model described in Table 3: 'Health Status', 'Educational Qualifications' and 'Employment status'. According to this alternative model, if included, 'health status' has a much higher impact on happiness when compared with other life events. In particular, the coefficient of the dummy variable 'Health Excellent' (with having 'poor' or 'very poor' health as a reference category) has a value, which is more than double that of the 'start of my relationship' life event. This is perhaps to be expected given that good health and happiness are often interchangeable concepts. [For instance, in many languages the expression 'good health' is commonly used (instead of 'cheers') upon having a drink.] Apart from the health-state variable, the inclusion of the other 'state' variables analysed by Clark and Oswald did not change the relative magnitude of the top-ten positive and top-six negative coefficients of the original equation described in Table 3. Nevertheless, it is interesting that being 'separated' and being 'unemployed' are in the top-ten list of negative coefficients (eighth and ninth in the list, respectively). It is also noteworthy that the state of being unemployed has a smaller (in absolute terms) coefficient than the life event of job loss (which includes 'becoming unemployed'). It can be argued that this adds quantitative evidence supporting the idea that people adjust to new circumstances through adaptation and habituation processes.[29–31]

It should be noted that one of the limitations of the analysis presented here is that the data and methods that were used would not allow us to consider possible 'memory recall bias' effects and in particular the degree, to which the psychological state of subjective happiness might influence which life events are retrospectively retrieved from memory and which are nominated as 'major'. It may be the case for instance that 'unhappy' survey respondents may be less likely to remember or report as important a desirable life event and, in contrast, happy respondents may recall more desirable events.[32]

Conclusion

The findings presented in this article build upon an existing and rapidly growing body of interdisciplinary research on the determinants of well-being adding to the debate on whether increasing happiness should be a key public health policy goal. Among the aims of such policies could be to raise the occurrence of lifetime exposure to 'positive' major life events and to minimize the exposure to and/or outcome of 'negative' events (or 'non-events' in the case of 'nothing important happening'). Our results could be used to inform more humane versions of cost–benefit analysis. For instance, at the national level, it could be argued that there is a need for policies that would increase leisure and social time (possibly via taxation change).[25] It is also possible to enhance the chances of events such as 'job gains' to occur in people's life and to increase educational opportunities. To give just one example, employers could be encouraged (through taxation) to adopt a policy of small pay rises spread across many employees over many years rather than larger rises for the few.

It should also be noted that there might be a considerable degree of interdependencies between life events and other factors. For instance, the ability to make and maintain friends may be affected to a certain degree by factors such as income and occupational status. Thus, the probability and severity of major life events may be influenced by life course and socio-economic position and further research is needed to study such influences that would have major policy implications. It has also long been argued that there is a strong relationship between inequalities and health, although that relationship is more about one's place in a society than a locality.[27,33] It can similarly be argued that there is a relationship between subjective happiness and inequalities[34] and in this context the degree, to which there are inequalities in the probabilities of major life events to occur to different social groups would mirror a similar inequality in the distribution of happiness.

The degree to which people compare themselves most with their 'near equals' in a society[35] or 'peer groups'[36–39] will affect the relative impact of different life events upon happiness (if everyone else is getting a promotion or boyfriend/girlfriend, why not you?). Finally, the ability of people to adjust to new circumstances through adaptation processes[40,41] may also affect their responsiveness to different life events. Whatever else may be true, it is hard to argue that, we should not be looking a little more closely at what folks themselves say most matters to them in their lives.[42]

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KEY MESSAGES

- Secondary data analysis of self-reported happiness and major life event data can provide an initial suggestion, of which dynamic events appear to matter most in people's lives and some measure of to whom and where those events are most likely to occur.
- Our analysis suggests that in British society at the end of the 20th century personal relationships were extremely important in terms of happiness, just surpassing the importance of relationships at work on individual well-being.
- Births and deaths as well as health and employment-related events, also appear to have a considerable effect on happiness. In contrast, events such as 'going on holiday' or 'buying a pet' do not seem to have any significant consistent impact on happiness.

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Appendix

This appendix provides more information on the ways in which the responses to the open-ended BHPS question asking people to state in their own words 'what has happened to you (or your family), which has stood out as important' were coded in the BHPS (for a more detailed discussion see Taylor *et al*.[21]). Answers were recorded verbatim, but verbatim responses were not made available for public release, because of confidentiality concerns. However, the following numeric codes were developed to capture the full range of events:

Health: '01 Ill Health/Concern about Health', '02 Hospitalization/Operation', '03 Accident (Involving Injury)', '04 Health Tests (Positive & Negative)', '05 Loss of Mobility/House-Bound', '06 Recovery/Continuing Good Health', '09 Health (not elsewhere classified—nec)'

Caring: '10 Caring Responsibilities—Not Childcare (i.e. Who is Cared For?)'; '11 Babysitting i.e. Who is the Sitter?)'.

Education: '12 Starting/In School', '13 Leaving School', '14 Starting/In Further Education (inc. Sixth Form)', '15 Leaving Further Education', '16 Studying For/Passing Educational/Vocational Qualifications/Acquiring Skills/Training (nec)', '17 Travel Related to Study', '19 Education (nec)'. *Employment*: '20 Change of Job (inc. Hours, Status)/Starting Own Business'; '21 Planned/Possible Change of Job', '22 Getting Job (Following Economic Inactivity)', '23 Work-related Training (inc. Apprenticeship/HGV Licence/Work Experience)', '24 Redundancy/Unemployment (Threat of or Actual)', '25 Retirement', '26 Travel Related to Work (Who Travels?)', '27 Work-related Problems', '29 Jobs/Careers (nec)'. *Leisure/Political*: '30 Vacation/Travel (nec)', '31 Leisure Activities', '32 Learning to Drive/Passing Test (not HGV)', '33 Political Participation/Voluntary Work (inc. Committee Work)', '34 Reference to National/World Events (who is Concerned by Event?)'.

Non-familial relationships: '35 Began Friendship (including Girl/Boyfriend)', '36 End Friendship (including Girl/Boyfriend)', '37 Spending Time with/Visiting Friends (Coded as Holiday as Appropriate)', '38 Problems with Neighbours (Who Has the Problem?)', '39 Non-Family Relationship (nec)'.

Family events: '40 Pregnancy/Birth (Identity of Parent?)', '41 Cohabitation', '42 Engagements/Weddings', '43 Separation/Divorce/End of Cohabitation', '44 Leaving Parental Home', '45 Death (Who Died?)', '46 Wedding Anniversaries', '47 Birthday Celebrations', '48 Becoming Godparent', '50 Spending Time/Visits with Relatives (Not Within Household)', '51 Day-to-day Family Life', '52 Family Problems (Person Causing Problems?)', '53 Domestic Incident (e.g. Fire/Burst Pipes, etc)', '54 Pets/Animals (Pet Coded)', '59 Family Event/Family Reference (nec)'. Financial matters: '60 Money Problems/Drop in Income/Debt', '61 Forced Move (Repossession/Eviction) (Residential Move Not Included)', '62 Improved Financial Situation', '63 Received Money (Inheritance/Compensation/Pools)', '69 Financial Other (nec)'. *Consumption*: '70 Bought/Buying Vehicle (Car, Caravan, etc)', '71 Bought/Buying/Building House', '72 Household Repairs/Improvements/Appliances', '73 Won Prize (Not Cash)/Award', '74 Received Present (from whom?)', '79 Other Purchases (nec)'.

Residential move: '80 Moved In Past Year', '81 Future Intention to Move', '82 Move into Residential Home (Nursing/Retirement, etc)', '83 Move into Respondent's Household (Who is Moving In?)'.

Crime: '90 Victim of Crime (Burglary, etc)', '91 Committed Crime/In Trouble with Police'.

Religion: '92 Joined/Changed Religion', '93 Other Religious Reference (Not Confirmation/Baptism of Children)'.

Other: '94 Plan Not Fulfilled/Something That Didn't Happen (e.g. Didn't Have a Holiday)', '95 Civil Court Action/Battles with Bureaucracy', '96 Other Occurrence (nec) given low priority', '97 Nothing Happened'.

People's answers to the BHPS event question included not only events that happened to them personally but also events that happened to other family members or friends. Each event has, therefore, been assigned a subject code as follows:

'00 Not Mentioned', '01 We/Household', '02 Self (Explicit or Inferred or No Pronoun)', '03 Spouse/Partner', '04 Daughter(s)', '05 Son(s)', '06 Child(ren) (nec)', '07 Son/Daughter in-law', '08 Mother' '09 Father', '10 Parents (both or not specified)', '11 Parent(s) in-law', '12 Siblings (sister/brother)', '13 Sister-in-law/Brother-in-law', '14 Grandparent(s)', '15 Grand child(ren)', '16 Other Family Members/Family Members Unspecified', '17 Friend/Colleague/Neighbour/Employer', '18 Other', '19 Pet', '20 Not Specified'.

Note: nec, not elsewhere specified.